A Note from the Dean

At intervals of up to eight years, medical schools in North America must be accredited by a joint commission of the Association of American Medical Colleges and the American Medical Association known as the Liaison Committee on Medical Education (LCME). In February 2007, a survey team of educators from around the country will convene a site visit on our campus as the culmination of this process.

In preparation for this visit, we undertook an intense, sixteen-month self-inquiry to assess the clarity of our objectives, determine whether our programs and resources are organized to meet those objectives, and assemble and critically consider the evidence that we are achieving them. Every constituency of the School was actively engaged in the process, and I want to praise and thank them for their dedication to this effort. Their accomplishment is presented in this report, the product of our Task Force on Reaccreditation. The analysis has confirmed what I have known since the time of our last site visit to be our institution’s core values and strategic assets: a rich tradition of excellence, a proud history, a liberal and warm institution that welcomes all based on merit, a University and School of Medicine that see growth and change not as criticism of the past, but as opportunity for further distinction, and, most importantly, a faculty and student body permeated by a deep and unwavering sense of commitment that can be translated into a successful action agenda.

This School was founded in New York City in 1841 as the University Medical College, became the University and Bellevue Hospital Medical College as an integral component of NYU in 1898, and adopted its current name, the New York University School of Medicine, in 1960. It has established a tradition of excellence that is enviable. In the coming decade, that tradition will face the challenges, opportunities and critical decisions embodied in twenty-first century training of physicians and scientists, research, and delivery of health care. Based upon the deliberations and conclusions of the Task Force, I am confident that the NYU School of Medicine will not only meet those challenges, but embrace them. With the exceptional talents of our faculty and student body, continued vibrant and forward-looking leadership, and the ongoing, strong support of the University, we will implement our growth agenda for the future and most effectively and successfully penetrate the new millennium in that same tradition of excellence with which we have been blessed and entrusted.

Robert M. Glickman, MD  
Saul J. Farber Dean and  
Professor of Medicine
This document is the summary of more than a year of introspection by the community of scholars who comprise the New York University School of Medicine. The self-study and the preparation for the visit of a survey team of educators representing the LCME began in June 2005. At that time, Dean Glickman appointed Veronica Catanese, MD, Senior Associate Dean for Education and Student Affairs as Chair, Task Force on Accreditation.

Under the direction of Dr. Catanese, a dedicated office to coordinate the activities of the Task Force was opened in July 2005 with Heather Campbell, Administrator of Education, Faculty & Academic Affairs in the Office of the Dean, serving as the Database Manager and Valerie Keane, Supervisor, Deans’ Office, as Task Force Coordinator. Seven committees and five subcommittees were appointed and charged. Nearly 125 members from every component of the School were involved: chairs; full-time, voluntary and emeritus faculty; medical students; trustees; and deans, administrators and officers of the School, NYU Medical Center and the affiliated hospitals. The full committees (Steering, Objectives, Institutional Setting, Educational Program for the MD Degree, Medical Students, Faculty, and Educational Resources) met an average of ten times each from October 2005 through November 2006.

An LCME Task Force website was established (http://lcme.med.nyu.edu/) to facilitate interaction within and among the committees and to maximize efficiency. Whenever possible, all documents were exchanged electronically and an archive of presentations, documentary evidence, survey results and reports were available on the Task Force website.

The 14 committees of the 2000 Task Force made 155 recommendations as part of the institutional self-study. Sixty-five percent of these have been accomplished, 11% have not and on 24% some progress has been made. Eight of the recommendations were deemed no longer relevant at the time of the current self-study.

The greatest achievements have been made in the areas of the educational program, faculty, and research. The educational program has been transformed by implementation of all six of the recommendations of the Curriculum 2001 Task Force. These recommendations from were to: 1) develop thematic content units that promote horizontal and vertical integration; 2) enrich the teaching of basic medical science in the clinical years; 3) ensure that the core clinical clerkships provide equivalent and high quality learning experiences across sites; 4) cultivate a culture of scholarship, mentoring, professionalism and humanism; 5) develop standardized methods of formative and summative assessment which are consistent with educational objectives; and 6) institute policies to specify teaching expectations and recognize the faculty’s teaching role. Self-study recommendations from 2000 related to clarification of the faculty academic tracks and requirements for promotion and tenure have largely been accomplished. Specific accomplishments in the research arena include the completion of the Joan and Joel Smilow Research Building and the growth of the research enterprise through faculty recruitment and programmatic development in accordance with the strategic frameworks articulated in the Dean’s Growth Agenda and the priorities of the Research Advisory Council (RAC).

The 2000 LCME survey team noted seven institutional strengths, seven concerns, and three transitional issues. The institutional strengths highlighted by the team were:

1. Dean Glickman has demonstrated his commitment to reform of the educational program by investing substantial resources in the educational mission of the school.
2. The School is moving aggressively in the development and use of information technology to enhance the quality of the educational program; examples are in the domains of Internet-based content delivery and student evaluation.
3. The students are bright and dedicated, with a documented commitment to scholarship as well as the practice of medicine.
4. The medical school has an outstanding record of biomedical and clinical research that creates an environment for student learning.
5. Both the administration and faculty of the medical school have demonstrated noteworthy responsiveness to the concerns and needs of students, and are generous of their time and effort in supporting student-led endeavors.
6. In recent years relationships between the medical school and the parent university have been strengthened to the mutual benefit of both.

7. The School continues to benefit from a rich array of health care facilities and patient populations to meet the needs of its educational program.

Substantial progress has been made in all but one of the areas of concern, and a task force has been formed to recommend a restructuring strategy for addressing that one area. The concerns identified during the last site visit as well as any progress made subsequently are outlined below:

1. *Existing institutional objectives for the educational program do not serve as effective benchmarks for guiding curricular evolution or facilitating the assessment of educational program effectiveness.* This concern has been addressed through intensive review, revision and refinement of our institutional educational program objectives, linkage of these program objectives to course objectives, specific methods of assessment and outcomes measures, and utilization of achievement of these objectives as an explicit guide for curricular “research and development.”

2. *The present system of clinical skills assessment, especially during the clerkship period, lacks sufficient rigor to assure that all students have acquired and can demonstrate the core clinical skills and behaviors needed in subsequent medical training.* This concern has been addressed through four interlocking mechanisms. First, beginning in the very first year of training, students’ clinical skills are formatively as well as summatively assessed in more than twenty objective, structured, clinical encounters (OSCEs). Second, each clerkship has developed and each student keeps a log of the set of well-defined, specific objectives linked to the types and numbers of actual or virtual patient encounters necessary for achievement of the core knowledge, skills and behaviors of that clerkship. Third, the clerkship directors, in conjunction with the Office of Medical Education, have developed and successfully implemented a web-based, qualitatively rich, quantitatively explicit assessment of students’ knowledge, skills and professionalism that is standardized across clerkships and made clear to students, faculty and house staff. Fourth, the School has developed and successfully implemented a cross-disciplinary, integrative Comprehensive Clinical Skills Exam (CCSE), which is given to all rising fourth-year students. Students must pass the CCSE in order to graduate, and those who have difficulties undergo specific, individualized remediation.

3. *Career counseling does not address the perceived needs of a significant fraction of the student body.* The School, through an annual series career/residency panels and specialty programs sponsored by the Office of Student Affairs and offered through the numerous student-led, faculty-mentored interest groups and clubs, provides the student body with ample opportunities for career exploration. Over the years, however, the School has struggled with successfully bridging the gap between overall, student-centered mentoring and specific, individual, professional career development counseling. This gap existed despite the Faculty Advisory College program in place at the time of the 1993 self-study and continues to exist despite the robust faculty mentoring program instituted under the banner of the Master Scholars Program and described in the 2000 self-study. Students and faculty perceive value in the thematic-based interactions of the Master Scholars mentorship; the seminar series and colloquia add depth and breadth to the total educational experience at the School. The mentorship interactions, however, also have been structured around the themes of the Master Societies, duplicating enrichment opportunities now well developed and open to the entire medical school community. The Program’s success in permeating the environment of the School of Medicine with humanism and professionalism now allows us to reconsider the roles of Society masters and members; a task force soon to be convened by the Senior Associate Dean for Education and Student Affairs and the new Associate Dean for Student Affairs and comprised of students and faculty will be charged with studying the structure of the current Master Scholar Program’s mentorship component and suggesting how it might be reconfigured to better meet the mentoring, career counseling and advising needs of the student body.
4. The School has failed to achieve self-defined goals for student and faculty diversity. The strengthening of the Office of Diversity Affairs, expansion of the activities of the Dean’s Committee on Women, and the recent formation of the Dean’s Council on Institutional Diversity illustrate the institutional commitment to diversity. Significant advances have been made in increasing diversity within the student population; the racial, ethnic and gender diversity of the faculty and, similarly, house staff, still lags behind what the School desires to achieve in providing an appropriately rich cadre of professional role models for our increasingly diverse student body. Both the Dean’s Council on Institutional Diversity and the Dean’s Committee on Women have prepared and recommended adoption of clear, formal guidelines for use in the search and recruitment of faculty members to the School of Medicine.

5. The system of personal counseling does not fulfill accreditation requirements for confidentiality of mental health counseling. The system for accessing mental health care has been restructured since the 2000 site visit. Mental health care professionals at Student Health Services do not participate in any clinical education activities. The student mental health records are kept separately, and the location for accessing mental health is now physically separate from other student health services. In all areas the school ensures that whenever possible students do not receive health care from faculty members responsible for their education.

6. Student housing is inadequate. The location of the School in Manhattan makes this concern particularly difficult to address. Despite the tightness of residential space in this area of the city, no student who desires on campus housing has been turned away, and off-campus housing assistance is available to those who wish to use it.

7. The School lacks faculty career pathways, clear standards for evaluating candidates for promotion and tenure, and consistent evaluation of faculty members' career development. There has been tremendous progress in this area since the last self-study. The faculty tracks have been revised and clarified, standards for promotion and tenure have been disseminated, and the School has developed mentoring and evaluation guidelines.

Three transition issues also were raised, and each was addressed in two follow-up progress reports. These “works in progress” included:

1. The recent separation of the medical school from the hospital system has shifted greater responsibility to the school for balancing its budget, which intensifies pressures to eliminate recurrent shortfalls in its operating budget. The talents of the school’s new leadership will be challenged to achieve this goal. The audited financial statements of the School for FY2005 show a $17.4 million operating profit. This compares favorably with the $28 million operating loss projected for FY1999 at the time of the last self-study. All financial metrics, including operating margin, capital spending and net cash flow indicate that the School is in a much better operating position that it was six years ago and, furthermore, is investing in its future.

2. The School has embarked on a process to restructure its academic faculty practice plans that, if successful, will substantially change the institutional culture and provide an important financial resource. Follow-up is needed to monitor this endeavor. Central oversight of the School’s academic faculty practices plans has been strengthened. There has been a 210% increase in Faculty Group Practice revenue since the time of the last LCME visit. More than 550 physicians have joined the group, which generates approximately $225 million/year in total revenue and contributes approximately $18 million annually to the Dean’s Academic Fund, overhead coverage for the School, and academic funds for various Department Chairs. Despite the penetration of academic faculty practice plans, members of the voluntary clinical faculty of the NYU School of Medicine have remained engaged in the educational, clinical care and, in some cases, research segments of the mission of the School. An added benefit of the cultural change has been a focus upon better definition of the criteria for promotion of faculty within this clinical track.
3. **Current plans for curricular reform are laudable and will require broad-based support to assure their successful implementation.** As discussed above, implementation of all of the recommendations of Curriculum Policy 2001 has been one of the most substantial achievements of the School since the time of its last self-study. In parallel with curricular reform, the School has made great strides in developing innovative, interactive learning tools and incorporating robust objectives and assessments of skills acquisition into the fabric of its educational program.

In summary, the School believes that it has responded to correct as many of the concerns raised by the 2000 LCME site visit team as resources allowed. Further, we believe that the record of these seven years is one of demonstrable, significant accomplishment.

### I. Institutional Setting

#### A. Governance and Administration

The School of Medicine has passed through a turbulent decade in its history. Over that decade, the School was home to a series of dislocations, now in the public record and the LCME archives, that began with a decision to merge both the schools and hospital systems of NYU and Mount Sinai, the failure of that attempt, the decision to merge only the hospital systems, a suit by our faculty to block that merger, the ultimate merger on July 16, 1998, and the syncopated dissolution of the merger over the ensuing eight years. In August 2006 that dissolution was completed, and the relationship between the School and University is now stronger than at any time in our history.

Despite these tumultuous events, the School of Medicine has enjoyed a solid and remarkably stable structure of governance since the last LCME site visit. The last self-study looked to the appointment on September 1, 1998 of Robert M. Glickman as the 14th Dean of the School with expectations of renewed growth and vigor and a return to more tranquil times. The former expectations have been met, the latter not entirely. Until January 1998, the School of Medicine, Tisch Hospital (the University Hospital of New York University), and the Rusk Institute of Rehabilitation Medicine were known as the NYU Medical Center and were organized as an administrative unit of the University. All assets of this Medical Center campus were owned by NYU. After the merger, the clinical assets were owned by Mount Sinai-NYU Health. The merger called for the decline over five years and then cessation of the traditional cash support of the medical school by the hospital, and the new Dean was asked to reinvent the School’s administration after losing the joint Medical Center administration that had managed both School and Hospital for many years.

That new administration was built, but the merger was never successful. Within three years, all attempts at merging the activities of the several campuses had ceased, the President of Mount Sinai/NYU Health had resigned, and Dean Glickman had been appointed the CEO of NYU Hospitals Center to complement his role as Dean and, ironically, to reunite the campus. Since that time, the Boards of Trustees of the School and the NYU Hospitals Center always have met jointly; Mr. Ken Langone serves as Chairman of both Boards, allowing for maximal cross-fertilization despite the two entities residing in separate corporations.

The consolidation of the roles of Dean and CEO has facilitated a greater integration within the governance structure. The Dean/CEO has developed a capable management team appropriate for an institution of this size and characteristics. In addition, with the restructuring as delineated above, the School of Medicine has become more closely aligned with the University, to the benefit of both. The NYU School of Medicine is governed by the New York University Board of Trustees. In addition, there is an NYU School of Medicine Foundation Board that acts in an advisory and fundraising capacity for the School and makes recommendations to the NYU Board of Trustees. Membership on the NYU School of Medicine Foundation Board is constituted largely of members from the NYU Board of Trustees.

In the first, full year of his tenure, Dean Glickman embarked on a strategic planning initiative that has been expanded and modified over subsequent years through a targeted, distributive process. Strategic planning for
the NYU School of Medicine is embedded in several overlapping and on-going processes, all of which are led by the Dean of the School of Medicine/CEO of the Hospitals Center, the Senior Vice President for Health, and the Trustees. As the leader of both the School of Medicine and the Hospital, the Dean/CEO plays a critical role, as does the Senior Vice President for Health, who is the key University leader overseeing the Medical Center. The three most prominent processes that comprise the strategic planning function from a University perspective are the following:

1. The activities and output of the Academic Medical Center Operations Committee (AMC), the senior leadership group at the Medical Center that meets weekly and is led by the Dean/CEO;
2. The long-range financial planning process that produces the running, ten-year financial plan for the School of Medicine;
3. A recent report of a Strategic Committee of the Boards of the Medical School, Hospital, and University.

In addition to the above-mentioned processes, several other strategic initiatives have taken place in specific arenas of the medical school. In the summer of 2000, RAC undertook a strategic review of the research programs at the School in the context of planning for and construction of the Smilow Research Building. During this process, RAC members evaluated the research environment and the goals of the School’s research portfolio in order to identify priority growth areas. The translational research programs which are now housed in Smilow were determined through this careful analysis.

The School’s distributive strategic planning and priority setting processes have served the school very well in the interval since the last LCME survey. The achievements in the School during this period of continuous, rapid change have been remarkable. Nonetheless, we believe that with the new stability that has been achieved, development of a formal, integrated, strategic plan for the School of Medicine should be a major agenda item.

Since the last LCME self-study, the collaboration between the NYU School of Medicine and the University has increased substantially in both dimension and quality. Under the leadership of President John Sexton, Dean Robert Glickman, and Senior Vice President for Health, Robert Berne, the School of Medicine, in fact the entire Medical Center, is a more organic part of New York University than at any other time in recent memory.

Communication among a medical school, the parent university, and its affiliated hospitals is essential but complex. It is accomplished at NYU through weekly AMC meetings among the leadership of the Medical School, the NYU Hospitals Center, and the University; weekly meetings between the Vice Dean for Clinical Affairs and Bellevue Hospital Center leadership; monthly meetings between Veteran’s Administration (VA) leadership and the Vice Dean for Clinical Affairs; and monthly, bilateral conversations between members of these groups with key committees, such as the Curriculum and Graduate Medical Education Committees, charged with education and training.

For the past eight years, the School has benefited from a singular vision under the administration of Dean Glickman. A reorganization of the School’s management structure was completed after the merger of the Hospital with Mount Sinai, and another, unexpected reorganization was undertaken when the NYU Hospitals Center de-merged from Mount Sinai. Both of these reorganizations have been successful and have resulted in an efficient and effective management structure for the NYU Medical Center. Having achieved what he felt was possible in almost a decade at the helm, Dean Glickman announced in March 2006 his intention to step down at the end of June 2007, providing adequate time for an orderly transition.

Since the last LCME site visit, the position of Vice Dean for Education, Faculty & Academic Affairs was created. This position has oversight responsibility for all educational programs within the School, as well as the management of faculty and academic affairs. Richard I. Levin, MD was appointed to this post in 2000 and left the institution to become Dean of the Faculty of Medicine and Vice Principal for Health Affairs at McGill University in September 2006. Steven Abramson, MD, who was the Vice Dean for Education at the
time of the last site visit, was appointed to this position in September 2006. Dr. Abramson has been an active
member of the School’s administration since 1991, having served as Associate Dean for Curriculum, Vice
Dean for Education, and Associate Dean for Clinical Research; his appointment, therefore, facilitated a
smooth transition.

**B. Academic Environment**

The Sackler Institute at the School of Medicine is a division of the Graduate School of Arts and Science of
New York University. It offers programs in the basic medical sciences leading to the PhD degree and, in
coordination with the Medical Scientist Training Program, combined MD/PhD degree. The more than 160
faculty members of the Sackler Institute of the NYU School of Medicine open their laboratory doors both to
MD and MD/PhD students, who also benefit from the more than 350 postdoctoral trainees of the School of
Medicine.

Through an aggressive national recruitment program there has been a significant increase in both the number
and quality of graduate applicants. Over the past ten years there has been an approximately ~250% increase
in total applicants, an approximately 600% increase in U.S. applicants, and a 2000% increase in the number
of underrepresented minority (URM) applicants.

The Sackler Institute programs undergo both internal and external review for quality and effectiveness. By
all evaluation measures, the graduate programs in the basic biomedical sciences constitute an area of great
strength and educational value for our students.

The School maintains over 100 residency training programs and has approximately 1,100 house staff
members. Since the time of the last LCME self-study, Graduate Medical Education (GME) at NYU has been
completely restructured. In July of 2002, the senior leadership of the School of Medicine and the affiliate
hospitals approved a strategic plan to enhance and update the systems, as well as facilitate and streamline the
processes that support the GME enterprise.

The Dean established an Inter-Institutional GME Task Force consisting of the leadership from the School of
Medicine, Graduate Medical Education Committee (GMEC), NYU Hospitals Center, Bellevue Hospitals
Center, House Staff Council, and representatives from the Finance Departments of the major affiliates to
ensure that the School of Medicine and primary hospital affiliates would be able to maximize the
coordination of resources for graduate medical education. Task Force initiatives have resulted in a shared
philosophical and financial commitment to GME, have been instrumental in identifying and collaboratively
pursuing additional means of support, and have fostered increased sharing of existing resources.

The first NYU Graduate Medical Education Retreat was held in January 2003. This retreat was specifically
designed to raise awareness of the ACGME Outcomes Project, to reinforce the importance of integrating
competency-based education and assessment into each training program’s curriculum, and to establish a
dialogue among Program Directors regarding the six general competencies. As a result of this event, the
GMEC commissioned its Curriculum and Technology Subcommittee to support and provide additional
resources to all training programs in the areas of the six general competencies. The Committee conducted a
comprehensive needs assessment across all training programs and has been preparing educational modules to
address the systems-based practice, Professionalism, and Practice-Based Learning and Improvement
competencies throughout the institution.

These changes were acknowledged by ACGME in June of 2005 as it awarded the School of Medicine a full,
five-year cycle as the institutional sponsor for graduate medical education. There were no institutional
citations in the review, no programs were placed on probation, and the School received four pages of
commendations.

Continuing Medical Education (CME) programs run by the academic departments are available, without
charge, to any students who wish to avail themselves of the opportunities. CME programs provide students
with yet another venue in which to enhance their clinical knowledge and skills, as well as to network with physicians and faculty from around the country.

Research has always been a major institutional priority at the School. Under the leadership of Dean Glickman and as part of the Growth Agenda, the research program has undergone significant development, including designation of research priorities, focused research recruitment, refurbishment of over 30,000 square feet of existing laboratory space, and opening of the Smilow building in the spring of 2006. This expansion complements the rich array of centers and institutes firmly established at the School of Medicine; these include the Skirball Institute for Biomolecular Medicine, NYU Cancer Center, NYU Lung Cancer Biomarker Center, Center of Excellence for the Study of Locally Advanced Breast Cancer, AIDS Clinical Trials Group, Center for AIDS Research, Nelson Institute of Environmental Health Science, NYU Child Study Center, General Clinical Research Center, Institute for Community Health and Research, and the Cardiac and Vascular Institute.

In FY2005, the School’s research programs received $166,731,031 in grant funding, of which 86.2% was from federal agencies. In FY2005, the School ranked 36th in NIH funding to medical schools. We expect our total grant portfolio to increase by 10% over the next seven years with the opening of the Smilow Research Building and the associated recruitment of over 40 new investigators.

In calendar year 2005, our faculty published 2,463 articles in peer-reviewed journals (718 from our basic science departments and 1745 from our clinical science departments). In addition, our faculty wrote 24 books and 67 book chapters. We believe that the research activities of our faculty are strong, productive and conducive to providing a high quality educational environment for our medical students.

Research activities at the School are physically distributed among the Medical Science Building (approximately 120,000 square feet), Skirball Institute of Biomolecular Medicine (60,000 square feet), Bellevue Hospital (approximately 26,000 square feet), Public Health Building (20,000 square feet), VA Hospital (40,000 square feet), Hospital for Joint Diseases (11,000 square feet) and Sterling Forest (72,000 square feet). Additionally, faculty members from the Department of Psychiatry conduct research at the Nathan S. Kline Institute for Psychiatric Research, which recently opened a new research complex with 200,000 square feet of laboratory, clinical research, and office space.

In April 2006, the School opened the Joan and Joel Smilow Research Center, a 13-story, state-of-the-art, biomedical research center. With this opening, approximately 110,000 new square feet of additional space for laboratories and conference rooms were added to the School’s portfolio.

To facilitate the conduct of modern biomedical research, the School supports, either directly or through center grants, the functioning of several core facilities and shared resources that provide a necessary complement to the ongoing efforts in individual laboratories. These shared resources include specialized cell flow cytometry, monoclonal antibody facilities, specialized immunological assays, mass spectrometry, DNA and protein sequencing, molecular diagnostics for detection of specific cancer and cell growth markers, a transgenic mouse production facility, tissue procurement and tumor banks, biostatistical analysis, clinical research resources, epidemiology, toxicology and animal pathology resources. The Division of Laboratory Animal Resources (DLAR) provides centralized veterinary services for the Berg Institute Central Animal Facility, the Skirball Institute Central Animal Facility, the Department of Medical and Molecular Parasitology Central Animal Facility, and the Kriser Dental Center Animal Facility, as well as a number of smaller satellite facilities.

The School has developed a number of mechanisms and programs to assist faculty in obtaining extramural support. The Sponsored Programs Administration (SPA) serves as a valuable resource and is dedicated to supporting and enhancing the education, service, and research programs of the School. SPA also assures compliance with University, School of Medicine, sponsor and government policies and procedures. Examples of the types of support provided include: customized funding searches, assistance with proposals,
provision of electronic resources, and grant-writing workshops. In order to streamline administrative processes, a new Senior Associate Dean for the Office of Sponsored Programs Administration recently was recruited. The new Senior Associate Dean will be responsible for all administrative and support activities related to sponsored research, clinical trials, and the administration of regulatory functions, including the Institutional Review Board (IRB), the Institutional Animal Care and Use Committee (IACUC), and the Institutional Biosafety Committee.

In 2005, the School instituted a Master of Science in Clinical Investigation training program with two tracks: Translational Medicine and Public Health Research. These educational programs are offered to clinically-trained individuals with an interest in clinical investigation who are making the transition to junior faculty; in its first year, this program enrolled nine trainees.

The Masters Program in Global Public Health recently was instituted as a collaboration of five of NYU’s professional schools. Students who are enrolled in this program and are interested in clinical research are permitted to use a portion of their time in this program for research projects in an aspect of clinical science within the School of Medicine. In addition, courses created for this Program will be available for clinical researchers.

There are additional, intramural programs which provide financial support for junior investigators. These grants are intended to enhance the faculty member’s ability to compete successfully for external funds. The School has developed a Bridging Fund for interim support for faculty who have experienced, or are about to experience, a lapse in extramural grant support. The Bridging Fund supports research activities which will directly contribute to a more competitive grant submission, such as acquiring data to meet recommendations of extramural reviewers, completing work needed for the "preliminary results" section, and demonstrating successful use of methods, technology, or instrumentation.

Overall, the Committee believes that the resources in support of research are adequate. The timing of this self-study coincides with the School’s planning efforts for the Clinical Translational Science Institute (CTSI) grant submission. The CTSI planning efforts, led by Bruce Cronstein, MD, involve over 100 faculty organized into seven advisory groups. As part of the planning process, a needs assessment was undertaken via a web-based survey, assessment by external colleagues, advisory meetings with key internal stakeholders, and engagement with consultants. This needs assessment has identified that, while the research enterprise is strong in many areas, our current research cores and administrative processes are “silo-ed,” and the Committee believes that a more coordinated approach would further strengthen the School’s research enterprise.

NYU School of Medicine has been an innovator in medical education. We were one of the first medical schools to award a PhD degree, one of the first recipients of an NIH MD/PhD (MSTP) Program grant, and one of the first schools to formally incorporate research into our general medical curriculum though an NIH-funded Honors program. Over the past 10 years, the vast majority of our incoming students had been actively involved in undergraduate research and over 80% have become actively involved in research (both basic science and clinical) during their tenure at the School of Medicine. Thus, the percentages of our students with continued engagement in biomedical research are among the highest in the country.

Over the past five years, the number of our medical students who choose to enhance and extend the period of medical training with a fifth year of research or master’s program work has significantly increased. We expect approximately 15-20% of our students to take advantage of this option in this academic year and a similar percentage in future years.

The basic science departments are dedicated to the achievement of excellence in research and teaching of the biomedical sciences. The School can boast a long and rich tradition of discovery in the basic sciences that has fostered the careers of many of our graduates as researchers. The essence of our educational philosophy is that a solid grounding in basic medical science is an essential component of the preparation of all modern physicians, and is even more essential for those physicians who want to pursue an academic career. On the
2005 AAMC Graduation Questionnaire, to which our School consistently has a greater than 90% response rate, 48.3% of our students reported their intent to become full-time university faculty, compared to a national average of 32.8%. By the time they graduate, 29.8% of our students believe that they will be significantly involved in research during their medical career, 36% have participated in a research project with a faculty member, and 24.9% have submitted a research paper for publication. Therefore, the School places great value on ensuring the strength of the basic science departments, as it regards them as critical for its ability to fulfill its mission.

Four of the ten basic science departments have undergone a change in leadership since the last LCME site visit: Pharmacology (2001), Pathology (2004), Medical Parasitology (2004) and Biochemistry (2006). Including the four mentioned above, the average tenure for a basic science chair is 12.8 years.

There are 265 faculty members in the basic sciences, 257 of whom are full-time. There is a satisfactory distribution among the full-time ranks (28.8% Professors, 26.5% Associate Professors, 43.2% Assistant Professors). Since the last LCME site visit, the number of faculty members in the basic science departments has remained relatively constant.

Funding for the basic sciences comes from a variety of sources, including federal and non-federal research grants, School operating funds, and endowment income. In FY2005, basic science departmental expenditures totaled approximately $80 million. With the opening of Skirball in 1993 and Smilow in 2006, the amount of research space has increased significantly. There are 183,876 square feet of research space in the basic science departments. The Committee believes that the leadership, faculty, funding, space and facilities of our basic science departments are sufficient to achieve the School’s mission.

The basic science departments play a major role in the first two years of the medical school curriculum. As described in the Educational Program section of this report, the transition from department-level courses to interdisciplinary modules was begun prior to the last LCME self-study and has been completed since 2000. In addition, as discussed elsewhere, the creation of the Advanced Science Selectives, offered at the end of the third year, has facilitated the inclusion of the basic science faculty in the clinical years of the curriculum. The basic science modules are evaluated annually by the medical students. The Committee believes that the positive results on these evaluations are an indicator of the high quality of the faculty teaching efforts.

Overall, data from the 2004 Faculty Salary Survey indicates that 80% of the basic science faculty are involved in research, with the majority of the researchers federally funded. In terms of quality, the School’s overall dollar density is $392 dollars per square foot, which is competitive with AAMC benchmarks. On average in the years 2000 through 2005, our basic science faculty published 747 articles yearly in peer-reviewed publications. The Committee believes that this is an indication of the strength of the research efforts of our basic science faculty.

As indicated in the Faculty Salary Survey results, 65% of our basic science faculty members report participation in administrative service. Most of the service work performed by basic science faculty involves participation on committees, with additional involvement in departmental and school administrative work.

Eleven of the 18 clinical departments have undergone a change in leadership since the last LCME accreditation process: Medicine (2000), Anesthesiology (2001), Radiology (2001), Emergency Medicine (2001), Obstetrics & Gynecology (2003), Otolaryngology (2003), Ophthalmology (2004), Dermatology (2006), Pediatrics (2006), Psychiatry (2006), and Surgery (2006). In addition, the chair of the new Department of Cardiothoracic Surgery is scheduled to be replaced in 2007; this was part of the original design for the department. Including the eleven above, the average length of service as chair of a clinical department is 5.2 years.

There are 807 full-time and 3,333 part-time and voluntary faculty members in the clinical departments. The Committee believes there is a satisfactory distribution among the full-time ranks (24.4% Professors, 24.2%
Associate Professors, 47.1% Assistant Professors, 4.3% Instructors/Other) and adequate representation in the specialties and subspecialties.

Clinical department funding derives from a variety of sources, including practice plan revenue, hospital affiliation agreements, federal and non-federal research grants, School operating funds and endowment income. Since the last self-study, there has been a marked increase in funding from the patient care activities in the clinical departments, due to the expansion of the faculty practice plans. In FY2005, clinical department expenditures totaled approximately $440 million.

There are 184,715 square feet of research space in the clinical departments, which the Committee believes is adequate.

On the 2004 Faculty Salary Survey, 84% of compensated, clinical faculty members self-reported that they are involved in teaching at some level. While the majority of the teaching effort is focused on residents and fellows, there also is substantial effort in teaching medical students. In addition, our voluntary clinical faculty continue to be important contributors to our teaching mission.

As discussed in the Educational Program section of this report, the clerkships are evaluated after each block by the medical students. In addition, the residency and fellowship programs are evaluated by the house staff. The Committee believes that the high quality of teaching is evidenced by the positive evaluations in both of these areas.

Overall, data from the 2004 Faculty Salary Survey indicate that 51% of the clinical faculty self-report involvement in research, with the majority of the researchers federally funded. In addition, a substantial number of researchers receive funding from non-federal sources (i.e., industry and foundations). On average in the years 2000 through 2005, our clinical faculty published 1,752 articles yearly in peer-reviewed publications. The Committee believes that this serves to indicate that the research efforts of our clinical faculty are strong and of high quality.

Data from the 2004 Faculty Salary Survey indicate that 60% of the compensated clinical faculty are directly involved in patient care. The growth in the clinical enterprise under Dean Glickman has been profound, and the quality of our physicians is exceptional. The success of the graduate medical education enterprise is evidenced by the institution’s favorable, five-year (longest possible cycle) accreditation in which we received numerous commendations. In addition, all of the individual programs have successfully maintained their accreditation status with their respective program Residency Review Committees (RRC).

II. Educational Program for the MD Degree

A. Educational Program Objectives
The NYU School of Medicine consistently has been guided in its mission by the statement made in The Mission of a Medical School, written by the Faculty of the School early in the last century. According to this prospectus,

“The mission of the medical school is threefold: the education and training of physicians and scientists, the search for new knowledge, and the care of the sick. The three are inseparable. Medicine can be handed on to succeeding generations only by long training in the scientific methods of investigation and by the actual care of patients. Progress in medicine, which is medical research, must look constantly to the School for its investigators and to the patient for its problems, whereas the whole future of medical care rests upon a continuing supply of physicians and upon the promise of new discovery. The purpose of medical school, then, can only be achieved by endeavor in all three directions – medical education, research, and patient care – and they must be carried on simultaneously for they are wholly dependent upon each other, not only for inspiration, but for their very means of success.”
This mission statement has guided pursuit of the environment in which our students are trained, one defined by commitment to the highest level of human achievement in a culture strongly supportive not only of excellence, but also of continual questioning, self-directed development and embrace of diversity of culture and opinion. Within this environment, the School seeks to promote a rich, generative atmosphere in which the faculty understands that the students, as their successors and stewards in society, should not merely replace, but surpass, them in scholarship, research and patient care. At the time of its last LCME self-study, the School elaborated upon its mission statement and defined a series of educational goals reflective of what the institution hopes to accomplish through its educational programs. These goals are responsive to the dominant events and trends that have reshaped and continue to affect medicine in our time. The goals of the NYUSoM, therefore, are to:

1. Develop physician-scholars who combine science and humanism in their approach to the fields of medicine by fostering these characteristics:
   - An understanding of the scientific principles upon which clinical medicine is based and the ethical principles and human values with which it must be practiced;
   - The use of the scientific method for thinking, judgment and decision making in professional endeavors;
   - A command of the core of essential concepts, facts and skills needed for the practice of modern medicine and the understanding that practice must include prevention and be based on evidence whenever possible;
   - A sense of the paramount, fundamental responsibility of caring for patients whose interests must always come before one’s own;
   - The recognition of the limits of individual ability and knowledge that will, of necessity, promote interaction with appropriate colleagues;
   - A commitment to a lifetime of continuing education in the disciplines of medicine;
   - The skills necessary for continuous self-education including awareness of the breadth of educational resources and the technologies for their distribution, their appropriate use, their critical evaluation, and the ultimate integration of new information into practice;
   - The ability to communicate effectively with, and value the contributions of patients, their families, colleagues and the greater communities we serve;
   - The highest standards of honesty and personal integrity and knowledge of the theories and principles that govern ethical decision making;
   - Knowledge of the variety of approaches to the organization, financing and delivery of health care and an understanding of the complexities that financial considerations may bring to the fiduciary responsibility of the physician for the patient;
   - An understanding of the possible conflicts of interest inherent in various financial and organizational arrangements for the practice of medicine in this era.

2. Provide programs in graduate medical education in a setting of the highest quality of patient care in the specialties of medicine.

3. Expose our students to our extensive programs for graduate and postdoctoral research training in the basic biomedical and clinical sciences so that, as developing physician-scholars, our students understand the nature of the research that is the basis of both current and future medical practice.

4. Create, acquire and disseminate new knowledge as the result of fundamental research in the basic biological sciences, in the clinical sciences, in public health, in the delivery of health care, and in the administration of health care. In this regard, we consider it essential to our educational mission at every level that our faculty be engaged in original research of the highest merit, and that our students have every opportunity to participate in research and become physician-scientists whose primary career focus will be original investigation.

5. Provide the highest level of primary through tertiary care to the extraordinarily diverse populations who receive medical treatment in our community and beyond. We consider the rich
diversity of cultures, ethnicity, socioeconomic levels and national origins to which our students are exposed to be a major strength of our program that fosters -- through an understanding of these circumstances on human behavior and disease -- responsibility, compassion and tolerance.

6. Offer programs in the Post-Graduate School of Medicine for the continuing education of physicians in the basic and clinical disciplines of medicine as well as in health economics and health policy.

7. Educate the public on matters of health.

8. Enrich the education of younger students in grade school through college, especially underrepresented minorities, in order to attract them to careers in biomedical fields.

9. Foster the development of research collaboration between our faculty and the private sector both to expand our faculty’s access to emerging therapeutic technologies and to ensure the transfer of new discoveries and inventions made by our faculty and students to full application in patient care.

The School recognizes that in order to remain true to its mission, it must clearly and specifically connect both that broad mission and its institutional goals to a medical educational program whose trainees meet and, ideally, exceed the expectations of both the medical profession and the public it serves. Therefore, to achieve the aspirations embodied in its mission statement, the School has moved beyond the robust set of specific strategic goals articulated in the Blueprint for the Millennium report of its last self-study to define a comprehensive set of specific objectives that constitutes an “implementation plan” by which those strategic goals can be met. The objectives of the NYU School of Medicine are specifically linked to the ACGME core competencies, to the individual module and clerkship objectives defined by the Office of Medical Education in conjunction with each of the module and clerkship directors, and to specific methods of assessment by which attainment of those objectives can be measured. After an intensive, six-month working period, led by Drs. Thomas Blanck and David Roth, a committee of faculty, students and deans drafted the Objectives of the Educational Program of the NYU School of Medicine. These objectives were presented to, modified by, re-presented to and approved by the Dean, Curriculum Committee, module, unit and clerkship directors, Student Council, Council of Chairs, Faculty Council, Graduate Medical Education Committee and House Staff Council.

The School fully recognizes the critical importance of fostering a heightened and continuous level of awareness of these objectives throughout the medical community. To ensure this, the objectives will be explicitly discussed with all faculty, house staff, students and administrators at the beginning of each module and clerkship, and the “congruence” of our educational program with these objectives will be specifically evaluated through the module and clerkship evaluation process centered in the Office of Medical Education. Furthermore, the Objectives of the School of Medicine are the backbone upon which the Office of Medical Education, in conjunction with the Advanced Educational Systems group, is developing a robust educational program planning and evaluation system. The School’s educational program objectives are now explicitly linked to existing measurements of attainment of knowledge, skills and attitudes by students in the various components of the curriculum. Therefore, the high success rate of our students on our internal assessments linked to those objectives, as well as their success rate on external assessments of those competencies, strongly suggest that the educational program at the NYU School of Medicine is meeting the School’s objectives.

NYU School of Medicine Educational Objectives:
1. Medical Knowledge

Before graduation, students must have demonstrated, to the satisfaction of the faculty, knowledge and understanding of the:

- Basic principles of the scientific method and their application to the gathering of medical knowledge and clinical decision-making;
- Principles of epidemiology and biostatistics and the strengths and weaknesses of the study designs used to develop new medical knowledge;
- Basic scientific principles underlying the biochemical, genetic, molecular, and cellular mechanisms that determine the normal development, structure, and function of the body as a whole and its major organ systems;
- Normal psychosocial development of individuals from birth through old age;
- Pathology, pathophysiology, and ecological context of major diseases;
- Biological factors that cause or contribute to genetic, developmental, toxic-metabolic, infectious, autoimmune, neoplastic, degenerative, traumatic, and behavioral disease;
- Nonbiological elements, including access to health care and economic, socio-cultural, and psychological factors, that may contribute to or prolong illness;
- Clinical, laboratory, radiographic, and pathologic manifestations of major diseases;
- Pharmacologic, surgical, and psychologic treatments of common physical and mental disorders and symptoms such as pain, the relative efficacy of therapeutic interventions, and the common adverse effects of therapies;
- Palliative care of individuals with life-terminating illness and management of acute and chronic pain;
- Role of preventive medicine, including nutrition, exercise, and healthy lifestyles, in promoting health and decreasing the risk of disease;
- Epidemiology of common disorders in populations and the approaches to screening for and detecting illness, as well as reducing the incidence and prevalence of disease in populations on a global and local scale;
- Human and systems factors which may adversely affect patient safety.

2. Patient Care

Before graduation, the student must have demonstrated, to the satisfaction of the faculty, the ability to:
- Reason inductively and deductively in solving clinical problems;
- Demonstrate training level-specific knowledge and skills in the core clinical disciplines: internal medicine, obstetrics and gynecology, neurology, pediatrics, psychiatry, surgery, critical care, and ambulatory care;
- Obtain an accurate medical history that covers all essential aspects, including issues related to age, gender, and socio-economic status;
- Perform both a complete and an organ system-specific physical examination, including a mental status examination, where appropriate, in adults, infants, and children;
- Retrieve (from electronic databases or other resources), manage, and utilize biomedical information for solving clinical problems and making clinical decisions;
- Perform routine technical and certain key routine emergency procedures, as detailed in the core clinical curriculum;
- Interpret the results of common diagnostic procedures;
- Identify key clinical data, seek critical pieces of missing clinical information and determine when it is appropriate to act on incomplete information;
- Develop the flexibility to challenge and reformulate an initial assessment as new information is gathered;
- Formulate a treatment plan that demonstrates the ability to express the relative certainties of a differential diagnosis and the relative risks and benefits of treatment options;
- Construct appropriate diagnostic and therapeutic management plans for patients with common conditions;
- Recognize patients with common, immediately life-threatening conditions, and institute appropriate initial therapy;
- Recognize and outline an initial course of management for patients with conditions requiring chronic, ambulatory care.
3. Practice-Based Learning and Improvement

Before graduation, students must have demonstrated, to the satisfaction of the faculty, the ability to:

- Maintain a scholarly approach to medical problems and continually improve one’s knowledge and skills through lifelong, self-directed study;
- Recognize uncertainty in clinical decision-making, including the ability to quantify and communicate the degree of certainty associated with specific items of scientific and clinical information;
- Use multiple information sources for problem solving;
- Make decisions based on evidence, rather than opinion, while recognizing the importance of clinical experience and the art of practice;
- Improve performance based on self-reflection, critical self-appraisal, and openness to feedback from others;
- Recognize and accept limitations in one’s knowledge and clinical skills and commit to continuously improve one’s knowledge and abilities;
- Educate colleagues, students, other health professionals, patients and the general public;
- Demonstrate an understanding of the critical role of research and scholarship in understanding human disease and alleviating human suffering;
- Apply the principles of continuous quality improvement to patient care.

4. Interpersonal and Communication Skills

Before graduation, students must have demonstrated, to the satisfaction of the faculty, the ability to:

- Work with other members of the health care team in a spirit of cooperation and respect;
- Communicate effectively, both orally and in writing, with respect to data gathering, relationship building, and patient education;
- Communicate effectively and compassionately with patients and their families about the evaluation, diagnosis, therapy, and prognosis of disease, and counsel patients in a caring, empathetic, and culturally sensitive way;
- Present scientific and clinical information clearly and cogently, both orally and in writing.

5. Professionalism

Before graduation, students must have demonstrated, to the satisfaction of the faculty:

- A commitment to provide compassionate treatment of patients, with respect for their dignity, privacy, and rights regardless of the patient’s disease, prognosis, age, gender, race, sexual orientation, ethnicity, religious, cultural, or health-related beliefs, socioeconomic status, citizenship status, or ability to pay for care;
- Knowledge of the ethical principles that govern the doctor-patient relationship;
- Understanding of the ethical principles that undergird medical decision making, particularly with regard to beginning and end of life issues, genetics, and molecular technologies;
- A respect in all interactions for the patient’s privacy, confidentiality, dignity, beliefs, rights, family, and cultural or religious values, even when such values or beliefs conflict with one’s own;
- Expression of a professional demeanor in one’s work and as a role model for society, including the consistent demonstration of honesty, integrity, and reliability in all interactions with patients, their families, colleagues, and co-workers;
- Awareness of the threats to medical professionalism posed by conflicts of interest inherent in various financial and organizational arrangements in the practice of medicine;
- Awareness of one’s vulnerability to stress and the influence stress has on one’s ability to care for patients;
- A commitment to place the patients’ interests over one’s own;
• The ability to recognize and effectively address unethical or unlawful behavior of other members of the health care team and to understand when and how such behavior must be reported;
• The ability to identify and address both self-impairment and impairment of the professional behavior of others.
• The capacity to recognize one's personal reactions to patients and manage those reactions in the patient's interest.

6. Systems-Based Practice

Before graduation, students must have demonstrated, to the satisfaction of the faculty, the ability to:
• Retrieve information by performing database searches and refining search strategies to improve relevance and completeness of retrieved items;
• Use and integrate the data from available information resources and tools, including 1) online databases and other medical internet resources; 2) textbooks and other reference sources; and 3) journal articles;
• Apply the principles of evidence-based medicine to patient care and demonstrate the ability to: 1) identify quality literature; 2) critically appraise written reports for internal reliability, validity and generalizability; and 3) apply data from a population to an individual’s patient care;
• Protect the confidentiality of private information obtained from patients, colleagues, and others and demonstrate understanding of and compliance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA);
• Incorporate knowledge of the various approaches to the organization, financing, and delivery of health care, including particular awareness of the needs of the underserved, into clinical decision-making;
• Understand how the system of care in which a physician operates can impact his or her patient care abilities and overall professional development.

B. Structure

The medical degree program at the New York University School of Medicine provides an education that is noteworthy both for its breadth and for its depth and, accordingly, prepares students for all career options in medicine. Over the course of 145 weeks, trainees acquire competence in biomedicine in the contexts of investigation, clinical care, and outcomes assessment through a curricular program designed in congruence with the articulated goals and objectives of the School of Medicine. The mechanisms for providing that general professional education include: 1) a formal required curriculum; 2) an elective curriculum; 3) a wide range of optional academic and enrichment experiences; and 4) a program of academic and career mentoring. The School is building its own curricular inventory and management system but, while doing so, maintains a basic inventory on the Kermit database.

The curriculum of the first two years of the educational program is presented in a blend of core lectures and multiple, student-centered, active learning exercises. Through a series of integrated, carefully sequenced, learning modules, students not only are first exposed to all of the relevant basic and clinical sciences, but also expand upon and continually augment their core knowledge base through small group, case-based and problem-based learning conferences, group exercises, and student-patient interactions.

Our general professional education continues into the years of clinical training. A two-week clerkship orientation at the end of the second preclinical year prepares our students for transition to the core clerkships. The required clerkships include medicine, surgery, pediatrics, neurology, obstetrics and gynecology, psychiatry, critical care, ambulatory care, and an acting internship in medicine. In each of these clerkships, students are exposed to a wide range of subspecialties within the discipline, both in terms of patient mix and formal didactics.

Students transitioning from the third to the fourth year participate in a two-week Advanced Science Selective. Having completed a full-year of clinical training and working toward defining the next phase of
their educational program, students integrate their preclinical and clinical thought patterns by engaging in an in-depth, literature-based, small group seminar on a topic drawn from the frontiers of translational medicine and/or biomedical technology. While the primary goal of the selective is to encourage scholarship, consolidation and integration of preclinical and clinical knowledge, the ability of students to select from among a variety of seminar choices permits them to pursue individualized interests and gain deeper appreciation for the interface between new biomedical discovery and clinical medicine. During this transition period between third and fourth years, all students participate in a required Comprehensive Clinical Skills Examination, a “capstone” assessment of their acquisition of core communication, history gathering, physical examination, diagnostic and clinical reasoning skills.

In addition to the required curriculum, students in the third and fourth years are required to participate in a minimum of eighteen weeks of electives. This allows students the opportunity to both broaden and deepen their educational programs still further, taking ownership of and customizing this segment of their learning program as they begin to “differentiate.” All of the clinical departments, and all of the subspecialty areas within these departments, offer electives. Students also may elect to fulfill up to 12 of the 18 credit-bearing elective weeks through approved, mentored, basic, translational or clinical research endeavors.

Upon this basic structural framework of the educational program, students deepen and broaden their training through research and complementary extracurricular enrichment opportunities. These include our NIH-sponsored Honors and Independent Research Elective Programs; fellowships awarded by the NIH, Alpha Omega Alpha, Doris Duke and Sarnoff Foundation; Master Scholars program seminars and colloquia; public, urban and international health research, clinical electives, and advanced degree programs; and a multitude of extracurricular activities and student clubs.

By all outcomes measures applied – including performance on national, standardized examinations, National Residency Match Program results and annual assessment of our graduates by their residency program directors – our students demonstrate exceptional preparation for all career options in medicine.

Students are prepared to take active responsibility for their own learning from the very first weeks of their educational training program. This key aspect of the educational program begins with student preparation for small group case studies in the first month of the first year and culminates during the fourth year acting internship. As the students move through the curriculum, these activities become progressively less faculty-directed and more self-directed. At all points, the changing nature of scientific and medical knowledge and the integrative skill set required to weigh evidence and base decision-making on evolving information are stressed. Evaluation of acquisition of these skills is a specific component of summative student assessment in all of the core clerkships, and formative assessment of the development of these skills is an objective of the small group, case-based conferences in the preclinical curriculum.

During the first two years of the educational program at the NYU School of Medicine, the bulk of the educational experience occurs at a single site. This centralization allows for consistent educational experiences when the entire class is engaged in a single session or when smaller groups of students are precepted by the same instructor. When small groups of students are precepted by different instructors, thorough faculty development/preparation precedes each series of small group exercises so that educational equivalency may be ensured.

The majority of students spend at least some time during their third and fourth year core clerkships at our affiliated clinical sites. The School of Medicine takes its responsibility for ensuring consistency in educational quality and student assessment across sites very seriously. With the assistance of the Office of Medical Education, each of the clerkships employs common mechanisms to promote cross-site educational consistency. These include bidirectional communication of specific educational objectives and assessment criteria among clerkship directors, site directors, faculty and residents; development and implementation of a common core curriculum to meet those established objectives; standardized, criterion-based assessment of student performance across sites; and feedback from students obtained both from their patient logs and their evaluations of the educational experience at each site. Each of the core clerkships, with the exceptions of
Ambulatory Care, Critical Care and Advanced Medicine, balance learning in the inpatient and ambulatory settings and track students’ experiences in those two complementary venues.

The School ensures consistency in student assessment across sites and among preceptors through its standardized, web-based, student clerkship assessment tool. This features qualitatively robust descriptors by which a student’s knowledge, skills and professionalism may be assessed with a minimum of evaluator bias and translated into a quantitatively valid assessment of student performance. Through these mechanisms, the School continually monitors quality, content, student achievement of educational objectives, and cross-site equivalency in its educational program. The Office of Medical Education works closely with the clerkship directors in translating information obtained from all of these sources, as well as from the Student Survey, AAMC Graduation Questionnaire, residency program directors’ evaluations of our graduates, and student performance on standardized examinations and internal examinations such as the CCSE, into curricular innovation and reform.

C. Teaching and Evaluation
The quality and attentiveness of faculty during the preclinical years and of both faculty and house staff on clinical rotations are rated highly by the students, confirming the School’s confidence in their dedication to the educational mission. Direct, attending-level feedback to students is of high quality when it occurs, but the frequency and consistency of delivery are uneven. The School is directly addressing this latter issue through its mid-clerkship, faculty-initiated, formative evaluation system and through programmatic activities, both face-to-face and online, sponsored by the Office of Medical Education. Through annual “residents as teachers” sessions in four clinical departments, invited resident and faculty development sessions scheduled by departments with the Office of Medical Education, pre-rotation, face-to-face meetings with teaching faculty and residents, and clearly articulated and publicized objectives, core curriculum, and assessment criteria tied to the ACGME core competencies and the educational program objectives of the School of Medicine, the School consistently strives to prepare all those who participate in medical student teaching for their responsibilities.

D. Curriculum Management
The twenty-nine member Curriculum Committee directly assumes responsibility for the curriculum and provides both component-specific and global oversight of the educational program. This integrated body includes members of the faculty, administration, and student body in proportions appropriate to assure wide understanding of the issues at hand, flexibility, a lack of bias, and full representation across the institution, in order to achieve the school’s overall educational objectives. The Committee reviews and endorses or rejects all proposals for additions or deletions to the core curriculum, annually reviews each component of the educational program, tracks student workload and preparation time, and cyclically reviews the cohesiveness and congruence of the entire educational program with the objectives of the School of Medicine and the dynamic environment of medical education.

The Office of Medical Education centrally manages and coordinates the interdisciplinary curriculum, and collects and shares all evaluative data with the course and clerkship directors, Curriculum Committee and relevant department chairs. The School’s faculty design, develop and implement all components of the curriculum.

E. Evaluation of Program Effectiveness
The NYU School of Medicine strongly believes that its institutional objectives are robustly met by its medical students. Our students consistently perform above the national average on the United States Medical Licensing Examinations, are accepted into highly ranked residency training programs, and perform at a level superior to that of their peers during their first year of residency training. In parallel with the pride it derives from the accomplishments of our students, the School uses the information obtained from students’ program evaluations – both “in the moment” as they progress through training and as they reflect upon graduation – to continually assess and improve its educational program.
III. Medical Students

The Steering Committee specifically acknowledges the outstanding efforts of our students throughout the period of self-study. Their management of the student report and survey, which achieved a 95% response rate, was exemplary, and their contributions to the conversations of each of the committees were thoughtful and incisive.

A. Admissions

The admissions process successfully attracts and recruits outstanding students who seek a rigorous education in an urban setting. Applicants are interviewed by one member of the school’s Committee on Admissions, tour the preclinical and clinical facilities with medical student guides, and meet with students as well as a dean or department chair over lunch. In the 2004-2005 admissions cycle, the School switched from an independent application system to the AMCAS program. The number of applicants has more than doubled since the introduction of AMCAS, and the percentage of accepted applicants has decreased proportionately. The quality of matriculants, exceptionally strong at the time of the last self-study, has remained so. We base this conclusion both on traditional quantitative measures (average GPA 3.73; average MCAT 33Q) and on the ability of our admissions process to identify applicants and attract matriculants with outstanding recommendations, even if their “numbers” do not rank them at the very top.

Students at the School of Medicine benefit from high faculty accessibility, a superior scope of clinical facilities, and a rich, diverse, patient population served by the municipal, private and government facilities at which they train. The Ehrman Medical Library, while space-constrained, ranks in the top 10% of U.S. medical libraries in e-holdings. The School has moved forward with a robust, web-based Course Material Management System and has invested in development of interactive teaching tools which have gained national recognition. Because of the asynchronous initial development of information technology infrastructures across departments and between the School and the previously merged Mount Sinai/NYU Health System, the structure of the School’s information technology system is being reinvented and made cohesive across the education, research and clinical care components of the institution. This, in the short run, should increase the speed and reliability of e-mail and technical support services and, in the longer run, create a platform for integrative sharing of information and learning tools across all aspects of the medical education continuum.

The resource to student ratio of the School of Medicine is not significantly affected by transfer or visiting students. The School accepts approximately five students per year into the third year of training from the Sophie Davis School for Biomedical Education, a program designed to enrich the pool of physicians from diverse backgrounds and encourage return of those physicians to their communities. Visiting students in good academic standing at their parent institution may come to NYU for electives, but they may not participate in core clinical clerkships.

The NYUSoM recognizes that the diversity of its students is essential to its goals of offering first class training in the provision of excellent and compassionate care to a diverse population. In 2005, Dean Glickman formed the Dean’s Council on Institutional Diversity to assess and enhance diversity in all areas of the Medical Center. The Assistant Dean for Diversity and Community Affairs works closely with the leadership of the Sackler Institute, which through an aggressive, national recruitment initiative, has generated a 2000% increase in underrepresented minority applicants to our graduate programs. In parallel, the School maintains active “pipeline” programs, such as its Summer Undergraduate Research and High School Fellows Program. Since the last LCME site visit, the School has seen a steady, annual increase in the number of matriculating, underrepresented minority, medical students to its current percentage of 13% of the incoming class of 2009. There also has been an increase in the percentage of women matriculated: from 42% in 2000 to a high of 58% in 2003. After a drop to 43% in 2005, the first year of participation in AMCAS, the percentage of female matriculants rose again to 53% in 2006.
Both the Office of Student Affairs and the Office of Diversity Affairs provide student support programs which cultivate an environment congruent with the School’s diversity goals. Through a rich array of clubs, mixers, individual and group peer and preceptor sessions, and medical center-wide colloquia and programming, the School proactively works toward creating an atmosphere of inclusion and not just understanding, but embracing, of difference. Although strides have been made in increasing diversity among the medical student population, the racial, ethnic, and gender diversity of the faculty lags behind what the School would desire to provide appropriate professional role models for our increasingly diverse student body. Guided by the recommendations of the Dean’s Council on Institutional Diversity and the Dean’s Committee on Women, the School is more clearly articulating its institutional goals on diversity and establishing clear guidelines for application to the search and screening processes for new faculty.

B. Student Services

The low level of student attrition attests to the academic strength of our student body. Students in academic difficulty are identified early and are offered individual tutoring, as well as specific remediation plans if necessary. The Associate Dean for Student Affairs also offers academic counseling to students and refers them to learning specialists should more targeted interventions be needed to promote acquisition of a stronger set of study or learning skills.

Students join one of six academic societies of the Master Scholars Program and, from the very beginning of their first year, are paired with a mentor in that society. The societies are comprised of faculty from many departments within the School of Medicine, so career-specific, as well as general mentoring and advising, are available through the Society structure. The Dean’s Office sponsors annual career panels led by the residency program directors and/or chairs of each of the clinical departments, and the Office of Student Affairs sponsors evening career exploration sessions organized by numerous student-led, faculty-mentored specialty interest groups. At all times throughout their training, students may meet at any time with the Associate Dean for Student Affairs to discuss their evolving professional goals.

The Senior Associate Dean for Education and Student Affairs approve every extramural elective, independent research, or individual preceptorship taken for credit by our students. The Office of Registration and Student Records obtains performance appraisals from the host programs prior to granting elective credit for extramural program activity.

By early winter of their third years, students begin a series of interactions with the Senior Associate Dean for Education and Student Affairs, who guides them through the process of residency application, matches them with individual faculty advisors in the students’ departments of interests, and meets with them in large groups, small groups and individually as part of the residency application preparation process. No core clerkships are scheduled during December and January of a student’s final year to ensure that the residency application process does not interfere with the student’s general medical education. Letters of reference are not accepted by the Office of Registration and Student Records until the beginning of a student’s final year of training.

Individual components of this sequence work well, as documented by the superb residency program matches attained by our students. The School, however, recognizes the need for seamlessness across the transition points within this program of career counseling, and is convening a task force charged with addressing the interfaces among mentoring, academic advising, personal counseling and residency advising.

Current tuition for the School of Medicine is $38,125. The average increase in tuition and fees over the past six years has been 5.6%. During the 2003-2004 and 2005-2006 academic years, the annual increase of tuition and fees was 7.2% and 7.4%, respectively. These increases reflect the increased operating costs of the School of Medicine, and now bring the School’s tuition and fees to the middle range of those of comparable institutions in the New York area. School-based financial aid, and the students’ level of satisfaction with it, remains high; as the level of student indebtedness has increased, however, students have become appropriately more conscious of the value of effective debt counseling. In response to this need, the School
is restructuring its Financial Aid Office to better serve the individual and collective financial planning requirements of its students.

All medical students have access to the Student Health Service (SHS), which provides the following, confidential services free of charge: urgent medical care, mental health care, specialty referrals, required vaccinations and screenings, and international travel vaccines and counseling. The School offers United Healthcare insurance coverage to all students; options include family and dental coverage. The School also purchases disability insurance for students.

Before engaging in direct contact with patients, students receive explicit education on infectious and environmental hazards - including respiratory and bodily fluid hazards. During their clerkship orientation, students also attend an infection control session and receive a pocket instruction card delineating what to do should they be exposed to potentially hazardous body secretions or fluids in the patient care setting.

C. The Learning Environment

Results from the AAMC Graduation Questionnaire, Student Survey and clinical clerkship evaluations show that while incidents of student mistreatment do occur at NYU, they do so at a frequency equal to or below that of the national average. As part of their self-study deliberations, the Committee developed a Compact between Learners and their Teachers, adapted from that endorsed by the Association of American Medical Colleges. One recommendation of the Committee is that all stakeholders in the compact – students, faculty and house staff – be asked to formally agree to and abide by the Compact. The School’s policies on sexual harassment and student mistreatment are clear; the visibility and level of awareness of these policies, again by all stakeholders, should be increased.

All of the School’s standards and policies for student advancement, graduation, disciplinary action, appeal and dismissal are clearly stated in the School of Medicine Student Handbook. The process by which students are considered for and elected to membership in Alpha Omega Alpha is included in the 2006-2007 edition of the Handbook. As new policies are developed in response to improvements in web-based access of student assessments and grades, they are disseminated to the student body, faculty and department chairs by e-mail and then incorporated into the next year’s version of the Student Handbook. Students have access to all their records through the Office of Registration and Student Records, which also assiduously follows federal guidelines in assuring access to and confidentiality of student records.

The Martin L. Kahn Teaching and Learning Center, Alumni Hall C study room and the Medical Library are the major sites of individual and small group study space for students; the number of seats, however, is not equal to the number of potential student users. Although it is closing in on its goal, the School is not yet able to provide sufficient, dedicated, study space for an entire class. Recognizing not only the tightness of study space but also significant changes in the ways in which students now learn, the School is investigating the feasibility of converting different-purpose sites to space that can add to the study space resources available to the student body.

Students can enjoy a variety of entertainment options in the recently renovated Rubin Hall student lounge, as well as use the rooftop basketball court for sports. The courtyard of Greenberg Hall and the newly constructed outdoor court between the Medical Science and Smilow buildings add “green space” to the urban campus environment.

IV. Faculty

A. Number, Qualifications and Functions

The period since the last self-study has included the largest expansion of the faculty in decades. Since the arrival of Dean Glickman in September of 1998, new chairs have been recruited to lead 16 of the 28 academic departments. Of the large number of full-time faculty members who have been recruited in each of the past eight years, there has been a loss of only 3.1% of new recruits per year.
We interpret these data to indicate that there are no insurmountable barriers to recruitment to the School of Medicine. Chairpersons and their laboratories have been relocated from as far away as California and Great Britain. The recruitments have followed extensive academic searches which have identified excellent rosters of candidates.

The factors which have facilitated recruitment and retention include: 1) the location of the School in New York City; 2) the review and annual approval by the Trustees of a rolling 10-year budget plan which incorporated the Growth Agenda recruitments from the outset; 3) the inclusion of the necessary recruitment funds in the annual budgets; 4) a large and diverse faculty with expertise in many areas; 5) the new ambulatory cancer center; 6) a re-funded cancer center grant from the NIH; 7) a packed, linear array of primary, teaching, affiliated hospitals along First Avenue that represent archetypes of the federal, municipal and private health care systems with the resulting diversity of patient populations; 8) the standing of the entire University, 9) the outstanding medical, graduate, and postgraduate students at the School; 10) a top 10% e-resource library; 11) the ability to support a two-career family in the New York area; and 12) a spirit of renewal that accompanied the first new administration of the medical center in several decades.

The factors which have hindered recruitment and retention include: 1) the high cost of housing and living in New York City and a lack of university-subsidized housing for faculty, graduate students and postdoctoral students; 2) the lack of some “core” facilities for research and the inability to define what cores ought to be present in the Smilow building; 3) scarcity of office and laboratory space for clinical faculty; 4) an aging research infrastructure in many sites, including the Medical Science Building (MSB), Tisch Hospital and Bellevue, which has now been partially alleviated by the opening of the Smilow Research Building; 5) despite the new facilities of the last eight years, lack of space for expansion; 6) an IT service that was split after the merger of NYU Hospitals Center with Mount Sinai Hospital, with separate units servicing the School and clinical facilities (just now being reunited under a single administration) and which is deemed under-resourced for modern research; 7) the absence of portable tuition benefits; 8) lack of adequate assistance in school placement for faculty children; 9) inadequate child care provisions; and 10) lack of funded, protected time for clinical faculty.

The School of Medicine has made considerable efforts in the area of diversity. The Dean’s Council on Institutional Diversity and the Dean’s Committee on Women were established since the last self-study by Dean Robert Glickman to assess and improve diversity in all areas of the Medical Center. Two subcommittees of the Council on Institutional Diversity, the Leadership and the Faculty subcommittees, shared the charge of assessing and recommending on faculty recruitment and retention policies and practices. After conducting evaluations which included interviews with department chairs and underrepresented minority faculty, the two subcommittees drafted and submitted recommendations to enhance recruitment and mentoring activities that are already in place. The findings of the Council and the LCME Student Survey indicate the need to improve recruitment and retention practices in order to provide role models for students and a workforce that more adequately reflects the patient population. The Leadership and Faculty Committees are currently working on development of guidelines for search and screening for faculty and a diversity-focused faculty mentoring program, respectively.

The Office of Medical Education (OME) is a central resource available to faculty for curriculum planning and development, design and implementation of new teaching and assessment modalities, and development of enhanced teaching skills. OME offers direct, one-on-one, or group faculty development sessions on lecture skills, small group teaching skills, constructive, formative, feedback techniques, and bedside teaching approaches. OME jointly sponsors a new seminar series, “Topics in Medical Education and Technology,” with the Frederick M. Ehrman Medical Library, the Section of Medical Informatics of the Division of General Internal Medicine, and Advanced Educational Systems. This seminar series, open to the entire faculty, is a forum through which to highlight new ideas in medical education and technology, and to foster discussion of and engender innovative approaches to utilizing technology to enhance teaching and learning of medicine. In addition to OME, a cadre of NYU faculty with a strong grasp of educational theory
and best practices lead faculty development and teaching skills sessions within and across the many academic departments.

B. Personnel Policies

Clarification, transparency and dissemination of the requirements for faculty promotion and tenure have been dramatically improved over the period since the last self-study. There are now six academic tracks in the School of Medicine: these include two full-time tenure tracks (Investigator/Educator and Investigator Clinical/Educator), two full-time non-tenure tracks (Clinical Investigator/Educator and Research/Educator), and two part-time, non-tenure tracks (Clinical and Research).

At the time of his or her initial appointment, every new faculty member receives the link to the Faculty Affairs website, which contains further links to the Faculty Handbook and the revised policies and procedures for appointment, promotion and tenure. In addition, the Vice Dean for Education, Faculty & Academic Affairs meets annually with the non-tenured faculty to reiterate these policies. The presentation is distributed electronically for those who are unable to attend this meeting. There are mandated meetings of each department’s Appointments and Promotions Committee, which the Committee believes leads to increased awareness of these policies. The clarity and dissemination of the revised guidelines have been well-received, and policies have been followed consistently since the revisions went into effect. Faculty awareness of the guidelines is very good; for example, in the Junior Faculty Survey, 75% of respondent were aware that promotion to tenure requires periodic assessments at years three and six, which is a key facet of the revised policies.

The School of Medicine has multiple levels of scrutiny of faculty member conflict of interest. At the individual, personal level, all faculty members at the School of Medicine must abide by the Conflict of Interest policy, which is published in the NYU Faculty Handbook. In accordance with this policy, faculty members, on an annual basis, must disclose any potential conflicts. Any conflicts must be resolved to the satisfaction of the Dean, and this information is reported to the University.

Faculty members at the School receive feedback from their departmental leaders about their performance and progress toward promotion through several mechanisms. New faculty members and those who are changing responsibilities receive an offer letter that clearly delineates job responsibilities and performance expectations. During their probationary period, faculty members are informed annually by the Chair or his/her designee of their prospects of being recommended by the Department for promotion and/or the granting of tenure.

Additionally, each full-time junior faculty member has a mentoring committee, the goal of which is to provide the faculty member with a critical assessment of his/her progress. Mentors serve as a sources of practical advice regarding preparation of manuscripts, grant applications, and presentations in teaching or research seminar venues. The mentoring committee consists of at least two senior faculty members selected by the junior faculty member in consultation with his/her Chair. This mentoring committee meets once per year and provides a written progress report to the faculty member, as well as to the Department Chair.

The faculty response to the feedback and mentoring policies has been overwhelmingly positive in the cases of departments and individuals who have embraced the procedures. The Committee believes that overall there has been much progress in this area since the last self-study, but that there still remain issues with effective communication of the policies.

Education has been one of the three major elements of the School’s mission since its founding. The valuation of teaching and its role in appointment, promotion, retention and tenure have been the topics of two, major, faculty-driven reviews. The first review produced the Revision to the Policies and Procedures for Appointment, Promotion and Tenure at the School of Medicine. This revision specifically recognized both the responsibility of the faculty to teach and the requirement and opportunity for advancement through teaching. Since the adoption of this revision in April 2002, five faculty members have been awarded tenure or promoted to associate professor because of their achievements in teaching. In addition, the departmental
appointments and promotions committees of each department and the School’s Appointments and Promotions Committee consider teaching quantity and quality specifically in their deliberations about appointment, promotion and/or tenure.

The second review produced a new Report on Expectations Regarding Teaching. Two relevant portions from the Introduction that further define the School’s valuation of teaching follow.

We, the faculty and administration of the NYU School of Medicine, honor, value and support teaching in all NYU programs: those programs extend to middle school, high school, undergraduate, medical, graduate, and post-graduate students, including interns, residents, fellows, physicians and scientists. However, one of our important missions is teaching medical students, and we must ensure that this is supported by the faculty to the highest level possible.

In brief, the committee affirms that an appointment at the School of Medicine requires teaching as part of one’s career, and advancement requires a dedication to excellent, effective teaching in the context of a research university. This principle is entirely in keeping with the policy, history and culture of the University and School of Medicine.

The extent to which education is valued also is reflected in a number of innovations in education which have been supported by the School and its affiliated teaching hospitals. These include: 1) an expansion of faculty development offerings by the Office of Medical Education under the Associate Dean for Education; 2) the formation of a University-wide Committee on Education and Technology and its conception of Advanced Learning Exchange (ALEX), a new, student-centered, web-enhanced ecology of learning; 3) the creation of the Surgery Interactive Multimedia Modules (SIMMS), case-based, rich-media teaching exercises which have been adopted for expansion by the American College of Surgeons and the American Society of Surgical Educators as a national, surgical clerkship curriculum; 4) the development of a Curriculum Subcommittee of the Graduate Medical Education Committee which has created Objective Structured Teaching Examinations (OSTEs) for faculty and residents, courses on residents-as-teachers, and other development exercises to enhance teaching and attainment of the ACGME competencies.

On the 2006 General Faculty Survey, 69% of respondents were neutral or agreed with the statement, “Participating in educational programs has impact on decision-making concerning retention and promotion.” We believe that the recent differentiation of faculty tracks and articulated value of teaching in appointment, promotion and tenure reaffirms the School’s unwavering commitment to the educational component of its mission.

C. Governance

The governance structure of the School of Medicine is well-defined and effective. The Dean and other officers of the School meet regularly with counterparts at the University. Officers of the School of Medicine’s Faculty Council and our Senators to the University hold positions of leadership in the University Senate; indeed, the Secretary of our Council recently was elected President of the University’s Faculty Senate.

The primary committees which participate in the decision-making process at the School are the four Councils of governance, specifically the Council of Departmental Chairs, the Faculty Council, the Student Council and the relatively recently convened House Staff Council; the Academic Medical Center Operations Committee, consisting of the leadership of both the school and the hospital; the Senior Staff Committee that consists of the Vice Deans and Finance officers; the Curriculum Committee; and the Graduate Medical Education Committee.

To assess whether the faculty at large was satisfied with its role in decision-making, the Committee included survey questions on this topic in the General Faculty Survey. Approximately 60% of faculty respondents were neutral toward or satisfied with both the participation and the effectiveness of the faculty in institutional decision-making.
Many communication methods are used to inform and gather input from the faculty. The official representative body of the faculty, the Faculty Council, has representation from each academic department, as well as representation from both voluntary and full-time faculty. The Council meets every other week during the academic year, and its minutes are electronically sent to the entire faculty and posted on the Faculty Council website. The Council of Chairs meets weekly with the Dean and the Vice Deans and serves as an effective means of communication to the Chairs of each academic department. Minutes from these meetings also are posted online. Relevant information from these meetings and from other sources is disseminated through a variety of mechanisms, including departmental and divisional meetings.

Dean holds Town Hall Meetings at least twice annually. Open to the Medical Center community, these forums provide a mechanism through which the Dean, Chair of the Board of Trustees, and others present information on issues pertaining to both the School and the Hospital. At the end of each Town Hall session, there is time for open discussion with the Dean and other presenters.

In this age of technology, the School has increasingly relied on electronic means for communication to our faculty. Monthly, the Dean sends a Medical Center Newsbriefs e-mail to the Medical Center community; this newsletter highlights recent events, notable accomplishments, and other relevant information. In addition to this scheduled communication, the Dean, Vice Deans, and others in administration distribute information via ad hoc e-mail communications to the faculty.

In our survey of the general faculty, faculty members were overwhelmingly positive about the methods of communication of information. Faculty were queried on a variety of methods and reported satisfaction with all: Faculty Council (89% satisfied or highly satisfied); NYUMC broadcast e-mails (86%); and Departmental/Divisional meetings (86%). Additionally, the faculty reported overall satisfaction with the Dean, Vice Deans, and Department Chairs in terms of their providing clear and useful information.

V. Educational Resources

A. Finances
The magnitude of the NYUSoM enterprise has changed dramatically since 1999. The revenues, projected in 1999 to be $392 million, doubled to $787 million in 2005 and will be over $800 million in 2006. The Faculty Group Practice (FGP) has tripled in size. Philanthropy has almost doubled, with much of the growth attributable to Campaign pledge payments for the Smilow Research Building and for over 100 faculty recruits for that building and throughout the campus. Research grants already have grown by 76%. Tuition has grown by 28%.

A royalty revenue stream from Remicade particularly advantages the NYU School of Medicine. In 2005, $78.3 million of royalties were received. In 2006, approximately $90 million will be received. Sixty million dollars are being used for current operations, recruitments and capital enhancements, and $30 million are being reserved. The audited financial statements of the NYUSoM for FY2005 show a $17.4 million operating profit. This compares favorably to the $28 million operating loss projected for FY 1999 at the time of the last review.

For each of the last six years, there has been a revision of the Ten Year Strategic Plan. While the underlying strategy (the Dean’s Growth Agenda) hasn’t changed, the annual update has provided a discipline to ensure that we stay ahead of adaptations of the strategy (i.e., growth in the number of recruits), accommodate for unforeseen events (break up of the hospital merger) and are current in inflation factors. The projections have stayed balanced. In some years, the additional revenue and additional expense have balanced easily. In other years, institutional efforts have been needed to realign expenses.

During its annual budgeting process, the School reviews the balance of activities of the faculty to ensure both revenue generation and time for scholarly pursuit. The School provides support to the academic departments to cover salary of faculty engaged in required teaching activities. In addition, basic science
faculty are not expected to cover 100% of their own salary through extramural funding; rather they receive support for uncovered salary to ensure the availability of faculty for meeting the educational mission of the school.

The NYU School of Medicine has a Faculty Group Practice (FGP) that now consists of over 550 physicians with total revenue of approximately $225 million per year. This enterprise generates approximately $18 million per year for the Dean’s Academic Fund, overhead coverage for the School, and academic funds for various Department Chairs. The magnitude of this enterprise has more than tripled since the last LCME site visit. The reason the FGP has increased in size is the dramatic increase in programmatic initiatives, the latest of which is an ambulatory cancer center in which over 50 physicians participate and are now in the practice plan. With multidisciplinary programs becoming more prominent, an employment vehicle such as the practice plan is of greater interest to physicians. Further, as it becomes more difficult for voluntary physicians to bring on new partners, the availability of the practice plan has been helpful for new recruits.

There has been significant planning related to the clinical enterprise. In addition to the faculty practice there is also a substantial contract with the flagship hospital of New York Municipal Hospital System, Bellevue Hospital Center, which employs close to 500 faculty. Additionally, our affiliation with the VA employs over 100 additional faculty. The strategy of the FGP is to partner with physician groups throughout the metropolitan area and to provide onsite specialty care to them that complements what they already provide, with referrals coming to NYU. Further, we are planning to build a new ambulatory care center. All of these ambulatory activities are amenable to medical student clerkships and electives.

The present and future capital needs of the School of Medicine are reviewed annually and incorporated into the NYU Medical Center strategic planning process. Included in the plan are the needs of the clinical enterprise, including major construction and renovations to the hospital, a new ambulatory care center, and the renovation and upgrading of current academic and research facilities.

**B. General Facilities**

Alumni Hall includes the 500-seat Farkas Auditorium as well as two smaller auditoriums for lectures, symposia, and conferences. The 3rd Floor also includes a large study space available to students 24 hours a day with large windows and comfortable chairs for study and relaxation.

Completed in 1973, the Schwartz Lecture Hall provides two auditoria, including the Pfizer Foundation Hall for Humanism in Medicine, each with a capacity of 305 as well as two lecture rooms, each of which accommodates 85 students. Equipped with audio-visual systems, these facilities serve as a focal point of the first two years. Schwartz Lecture Hall is very convenient to Rubin Hall and the rest of the Medical Center.

The Geraldine H. Coles Medical Science Laboratory Building houses the Advanced Educational Systems facility, gross anatomy dissecting suites, the Printing Lab, and the Dr. Martin L. Kahn Teaching and Learning Center on the 2nd and 3rd Floors. The entire facility includes over 16,000 useable square feet of classroom and flexible classroom/laboratory space dedicated to small group teaching.

The Kahn Center, completed in 1998, contains six, multi-purpose, teaching labs with movable tables to maximize flexibility as well as computers and audio-visual equipment to facilitate discussion and integrative teaching. The design of this multi-purpose facility fosters student-faculty interchange and also provides medical students with study spaces during the off-hours. Highly effective, small group teaching and learning does occur in this facility designed to provide an environment for precisely that. While the 1998 renovation of the Kahn Center addressed space requirements for fulfillment of that educational goal, the six laboratories now require more advanced multimedia capabilities. In addition, the computers in the laboratories and small group teaching rooms are outdated and need to be replaced, and the first and ground floors of the facility also require updating and renovation to meet the requirements of an evolving, technologically-assisted learning environment.
Biomedical research is a critical component of the mission of the School Medicine. MSB is the largest of the School’s laboratory facilities, and it has undergone systematic, cyclical renovation and improvement to maintain its capacity to promote a high quality environment for scientific investigation. The adjacent Skirball Institute of Biomolecular Medicine adds 60,000 square feet of laboratory space to the 120,000 of MSB; the School of Medicine also leases approximately 26,000 square feet of research space at Bellevue and 40,000 square feet of space at the VA for research and support activities. The Department of Environmental Medicine’s Sterling Forest campus encompasses approximately 72,000 square feet of laboratory, teaching and office space. The Nathan S. Kline Institute for Psychiatric Research in Orangeburg, with its new $40 million construction and renovation effort and its 200,000 square feet of modern laboratory space, maintains a strong academic collaboration with our School’s Department of Psychiatry.

The Dean’s Growth Agenda originally forecast demand for at least 200,000 square feet of additional research facilities to support the new faculty. The most obvious manifestation of this growth is the construction of the Joan and Joel Smilow Research Center. Facing the East River adjacent to the FDR Drive, the Smilow Research Center abuts and is entered via MSB, NYU’s original research facility. This proximity will foster interaction between researchers, facilitate the integration of new programs with existing ones, and enable sharing of equipment and other resources. Ground-breaking for the Smilow Research Center occurred in October 2002, and the facility began accepting its new occupants in April 2006.

The Committee concludes that although the School has adequate teaching and research space to fulfill its mission, its teaching space requires updating and renovating in order to match the School’s pace of and drive toward educational innovation. Educational program methodologies utilized by the School have surged forward to embrace technology. While web-based learning tools and virtual patient simulations have little impact on teaching facilities, the same cannot be said for the increasing penetration of clinical simulation into the fabric of the curriculum. Currently, the preclinical and clinical OSCEs, as well as the Comprehensive Clinical Skills Examination, are performed in makeshift and borrowed space at Bellevue Hospital Center and the VA. Partial task training and surgical skills training occurs in the new, 3,000 square foot Surgical Skills Center at Bellevue. Although space constraints do not interfere with the School’s ability to pursue educational innovations and attain educational excellence, the School recognizes the need to identify space and secure funding for a Comprehensive Clinical Skills Center. Such a facility would enable the School to most effectively implement its innovative plans for human patient simulation and continue to provide robust, cohesive, undergraduate, graduate and postgraduate learning experiences in simulated clinical environments.

The housing portfolio of the medical center consists of 810 owned units and approximately 160 leased units. These units accommodate the needs of the School of Medicine as well as of the hospital, and they house medical students, graduate students, post-doctoral fellows, faculty, administrators, nurses, and house staff. About half of all medical students in campus-owned housing live in the single rooms of Rubin Hall; 37% of students in the school’s housing portfolio live in the studio or three-person suites of Greenberg Hall. The Skirball Residential Tower accommodates about 13% of the medical students housed in the School’s owned portfolio. All three facilities undergo cyclical renovation and upgrading, although the cycle length of these renovations could be shortened.

The primary function of the Security Department is to provide the safest possible environment for all members of the medical school community. Security officers are trained in first aid, CPR, patrol procedures, knowledge of the campus, information about the alarm systems, and building evacuation. They are also trained to use citizen arrest procedures if necessary.

The Security Department is aided in its tasks by a computerized, card access, CCTV alarm system. All entrances and exits, many high security doors, and the perimeter of the medical school campus are monitored by closed-circuit television equipment with recorder capability. The card access system is integrated with the existing identification program.

All NYU-owned residential buildings, including Skirball Residential Tower, Greenberg Hall, and Rubin Hall, provide 24-hour security personnel presence and surveillance cameras in lobbies and lounges.
Magnetic card-swipe access has been installed in the three NYU-owned residential properties and upgrades to proximity readers are planned. No one is allowed access into a residential facility unless he or she is a current student, resident guest, or otherwise authorized visitor. All entrants, including staff and faculty, are checked for proper identification.

NYU operates a free campus transportation service that is available year-round with modified summer and holiday schedules. The service runs along five fixed routes connecting the various campuses from 7:00 a.m. to midnight weekdays and from 10:00 a.m. to midnight on weekends. A free, on-call van service is provided for overnight transportation to and from NYU facilities as needed.

C. Clinical Teaching Facilities

The clinical resources available to the medical school are extraordinarily rich. First, Bellevue Hospital is an 800-bed hospital with just under 30,000 discharges a year and over 500,000 outpatient visits. Medical students are able to do clerkships, sub-internships, ambulatory rotations, inpatient rotations, and clinical research electives at this site. The patient mix is extraordinarily diverse from demographic and pathophysiological perspectives. Bellevue’s inpatient unit is in excellent condition, and a state-of-the-art intensive care unit recently has been opened. Two years ago, Bellevue opened a 208,000 square foot ambulatory care facility to which medical students are assigned. There are close to 500 NYU faculty on site at Bellevue through a professional services contract that provides patient care and trainee supervision.

The New York Campus of the VA, located six blocks south of the School of Medicine, provides another rich clinical resource. It has 171 inpatient service beds in acute medicine, surgery, acute psychiatry, neurology, and rehabilitation medicine. The New York Campus is affiliated with many schools of higher education, but its primary clinical affiliation is with the NYU School of Medicine. Medical students routinely rotate on these services, and the VA residency programs are fully integrated with those of NYU and Bellevue.

Additionally, the VA New York Campus provides just under 400,000 annual outpatient visits. In total, therefore, there are approximately one million ambulatory visits between Bellevue and the VA New York Campus, with another 400,000 ambulatory visits at Gouverneur Diagnostic and Treatment Center, which is also an ambulatory site for teaching. The VA also has an ample supply of NYU faculty members who are on site and full-time through an affiliation.

Tisch Hospital is a primary teaching hospital which also abounds in extraordinary opportunities for medical students. There are 37,000 discharges per year at this facility with an excellent mix of patients. Recently, through the addition of hospitalists and full-time chiefs of service, the teaching activities have been enhanced to supplement the excellent work of voluntary attending physicians. One limitation of the Tisch Hospital clinical teaching resource base is its relative lack of small group teaching conference space. Tisch Hospital recently opened a clinical cancer center, a 100,000 square foot ambulatory cancer care facility building which is free standing and will provide further opportunity for ambulatory care activity for medical students. Other affiliates, including Lenox Hill Hospital and North Shore-Long Island Jewish Health System, provide clerkships in selected areas for medical students.

The interactions between the medical school administration and the hospitals or clinics used for teaching are extensive. One of the Vice Deans of the School of Medicine has responsibility for managing these affiliations. On a weekly basis there is a joint operating committee meeting between the School of Medicine and Bellevue Hospital; on a monthly basis there is an affiliations meeting with the Veteran’s Administration. There are virtually daily meetings with the Tisch Hospital administration. Above and beyond these meetings, there are multi-site committees under the auspices of GME which frequently discuss medical student education. The level of cooperation between the School of Medicine and its affiliates is extraordinarily positive and interactive. Conflict negotiation and resolution when needed are undertaken between the Dean of the School of Medicine and the appropriate Chief Executive Officer of a particular hospital or clinic.
We are fortunate that most of our clinical sites are entirely staffed by faculty with appointments in the NYU School of Medicine. At two sites, namely Lenox Hill Hospital and North Shore-LIJ, clinical staff may not be core faculty members, but members of the voluntary, part-time faculty. Representatives from these institutions participate on the Curriculum Committee and site directors communicate regularly with their respective clerkship directors. The educational program for medical students rests firmly in the hands of the School’s faculty. The School maintains written, signed affiliations agreements with each of its affiliates.

In summary, the primary affiliations at Tisch Hospital, NYU Hospital Center, Bellevue Hospital/Gouverneur, and the VA, supplemented by relationships at Lenox Hill Hospital, North Shore-LIJ and others, provide a rich, well-integrated opportunity base for medical education.

D. Information Resources and Library Services

With a holdings list of 12,000 electronic journal titles and over 10,000 electronic books, the Ehrman Medical Library ranks in the top 10% of U.S. medical libraries in e-holdings. The library retains 197,000 print volumes and subscribes to 1500 print titles, of which one third are available only in print. In addition, the Library continues to purchase books every year at a higher than average level, and it lists 187 electronic databases and clinical and research support resources (i.e., UpToDate, MD Consult, Biomedical Protocols).

The primary weakness in the library holdings is that because of space limitations, the entire journal collection dating before 1985 is in remote storage, and accessible within 48 hours only by request. Shortly, we will have to put all titles published before 1990 in remote storage. Materials from 1970-1985 are still in demand for teaching, clinical care, and research. Although remote storage is increasingly common for many libraries, it is usually for materials published before 1950.

The three main groups supporting the educational mission are Advanced Educational Systems (AES), Medical Center Information Technology (MCIT), and Library. These groups are rich in technological knowledge and ability, and they have generated some extremely innovative solutions and products.

AES is a creative R&D group with broad and deep technology talent for educational applications in multiple technology areas. Its premier achievement is the creation of the surgical interactive multimedia modules (SIMMs), which have earned national recognition and are becoming the standards for national undergraduate education in Surgery. This team has significantly advanced the possibilities of computer-based instruction.

MCIT has made significant advances in the realms of stable infrastructure, custom applications, web and general technology support since the last LCME evaluation. Among MCIT’s major accomplishments have been the building of a professional Help Desk and dozens of applications in support of the educational functions and mission of the School, including a powerful Clerkship Evaluation System for student assessment and web sites to support curricular needs and student life.

The Information Resources and Library Services Subcommittee intensively assessed and analyzed the sources of strength and challenges to the informational technology services at the School of Medicine. The Subcommittee found that all of the faculty, staff and management involved in supporting the educational mission are motivated and effective. However, as technological capability grows and the demand for integrative solutions increases, the bar continues to rise, along with expectations of faculty, staff, and students. In balance with the notable accomplishments, therefore, the Subcommittee highlighted areas for targeted improvement. In general, the subcommittee’s analysis revealed that there likely are adequate resources in Information Technology; but these resources may not be used in the most efficient and effective manner.

The principal shortcoming identified by the Subcommittee was the lack of a clearly articulated, integrated vision of all of the interlocking components of the Medical Center and, therefore, an IT strategy to support that vision. Accordingly, the Committee recommends that a formal IT Steering Committee - with four, mission-focused, component committees to address Education, Clinical Care, Research and Administrative
needs and functions - be appointed by the Dean to direct efforts and allocate resources across the medical
center, and to forge technological integration of education with research and clinical care. Depending upon
the findings of the review, strong consideration should be given to centralizing some of these resources under
common IT management.

The Library is a repository of advanced digital resources and expertise. Over the past seven years, the
Library has made great strides in the amount of curricular and clinical reference material available on-line. It
has greatly expanded its scope and now manages the medical libraries at Bellevue, the VA, and the NYU
Dental School. This has allowed for a breadth and consistency of content that would otherwise not have
been possible. The advent of the Web proxy server has allowed access to Library materials from virtually
anywhere with an Internet connection.

The 2005 questionnaire of the NYUMC community and the 2006 LCME Student Survey both indicated a
high satisfaction level with all library service measures, including circulation staff, interlibrary loans,
reference, and literature searching. The library is open 24 hours, Sunday noon through Friday 9:00 p.m., and
open Saturday from 10:00 a.m. to 8:00 p.m. There is a 24 hour study area with 6 computers and 16 study
seats that is open 24 hours a day every day. During major exam sessions the student representatives and
library staff work out an extended set of hours for Friday and Saturday evenings and Sunday morning
coverage. Assistance is available during these hours for 96 hours a week.

The library contains a graphics area which includes audiovisual equipment for the few resources not on the
web. There are no queues for these resources. In addition, a sophisticated set of graphics software including
scanners, video-editing, digital cameras and color printing is available in the library graphics area. Starting
September 2006, this equipment will be jointly managed by the School of Medicine’s Media Services
Department and the library.

The public access computers are used at capacity. Related to the shortage of study space, there are not
enough to fulfill the need. However, there also is need for quiet study space without computers and the
balance set by the library staff to accommodate this has received only comments that there is neither enough
quiet space nor computer availability.

The Ehrman Library ranks 100th out of 120 U.S. and Canadian libraries in square feet available. It ranks 5th
in overall usage by comparative gate count. The universe of possible users on campus is over 20,000.
Pressure for seating and computer use is intense. In the Student Survey, 39% of respondents rated the
amount of library study space as poor or unacceptable, and 24% rated the quality of the space as poor or
unacceptable.

Despite the overwhelming trend toward electronic information retrieval and away from print holdings and
despite the robust e-holdings of the Ehrman Medical Library, the library is a center for study, group learning,
computer access, and assistance with and instruction in robust information retrieval. A specific plan to
accommodate these resource needs of the medical center should be established and implemented.

The library staff maintains an extensive education program for both medical education and general user
education for faculty and staff. The library also offers an extensive selection of professional development
classes which are given during the day and early evenings at no charge.

Karen Brewer, PhD, as Chair of the library is a member of the School’s Curriculum Committee. As of
September, 2006, the Library’s Coordinator for Undergraduate Education became a participating member at
monthly preclinical module and clinical clerkship directors’ meetings. The library also is a partner in the
design of curriculum support tools such as the curriculum repository and SIMMS modules.

The traditional strengths of the NYU School of Medicine remain compelling, and the extraordinary
dedication of our students, faculty and administration to the pursuit of excellence in a complex mission is
both tangible and inspiring. These strengths include:
1. Strong, central management of the curriculum by a proactive Curriculum Committee in collaboration with a strong Office of Medical Education. All of the facets of Curriculum Policy 2001 have been implemented, with continual engagement of Department Chairs and faculty despite the cross-disciplinary nature of the curriculum. The School has articulated and endorsed, at every stakeholder level, specific objectives for its educational program, and through two separate policies, reaffirmed commitment to its educational mission;

2. The continuing willingness of a very strong faculty to contribute time for education, curricular reform, educational and academic administration and student advisement;

3. A research effort that engages the students fully and advances the fields of biomedical science with great impact;

4. The capacity to consider, test, and embrace new methods of teaching and learning, and to anticipate changes in the educational environment with flexibility and creativity;

5. The tenure of Dean Glickman, who has energized the campus, expanded the School’s capacity for cutting edge basic, translational and clinical research, kept a focused and balanced eye on both growth and nurturance, and guided the School through a period of adaptation and self-discovery.

In parallel, the introspective process of self-examination also highlighted concerns toward which we must direct attention to best utilize our strengths and capitalize upon our opportunities. These include:

1. The need for cross-functional strategic planning to best deploy our resources in synergistic efforts that add value to not one, but all three components of our mission;

2. Overtaxed clinical and teaching spaces within our physical plant which do not inhibit achievement of our mission, but which leave little margin in meeting the needs of the academic community;

3. Uneven success in recruitment of underrepresented minority faculty and students despite forceful efforts;

4. Modest amenities for students;

5. A budget dependent on multiple external organizations, with a need to maximize utilization of these sources as well as create new sources of revenue.

**Recommendations**

**Institutional Setting Committee**

- Complete a formal, integrated strategic plan for the School of Medicine.
- Consider the appointment of a Vice Dean for Research to further the research mission of the School.
- Remove unnecessary administrative obstacles to clinical-translational research by coordinating the submission and review processes to the School and Hospital’s regulatory offices (i.e., IRB, OCT, GCRC).
- Continue development, under the Senior Associate Dean for Sponsored Programs Administration, of administrative services necessary to support and promote faculty research efforts, including grant writing and mentorship.
- Organize and coordinate core research facilities, promoting the interaction between the new CTSI, the Cancer Institute, and other research centers within the School.
- Increase interactions with other schools at New York University with regards to opportunities for shared core services and access to innovative technologies.

**Educational Program for the MD Degree**

- Continue to promote cross-site equivalency in educational experience and quality by analysis of the information obtained through the students’ patient logs; utilize this data not only to prompt
educational program “course corrections” when necessary, but to directly inform the research and development efforts of AES in creating innovative curricular elements.

- Continue to develop, in full collaboration with the Dean, Curriculum Committee and Department Chairs, an effective method for addressing the rare instances in which clinical grading policy at the departmental level is not congruent with that adopted by the School of Medicine.

- With a robust, collaborative system for horizontal and vertical curricular conversation and integrated, interdisciplinary curriculum delivery systems now in place, continue what the joint committee of preclinical unit and module directors and clerkship directors already have begun: a thorough reassessment of the core content of the curriculum. The goals of this process are to: 1) evaluate and, if necessary, redistribute weight placed upon certain topics while introducing key new areas which reflect the changes in biomedical discovery, translational medicine, and clinical care; and 2) develop and implement innovative methods of cross-disciplinary and vertical curricular delivery.

- Continue to augment the pervasiveness and communication of opportunities for faculty and house staff teaching skills development.

- Evaluate the content, style and structure of the preclinical examinations with regard to the level of cognitive challenge and the educational objectives to which the assessments are linked.

- Continue to work on development and implementation of methods to increase the frequency of direct faculty observation and quality of constructive feedback offered across the curricular program, but particularly in the clinical clerkships.

- Continue to strengthen both transparency and awareness of transparency in the clerkship evaluation/grading process.

- Establish a robust, coordinated, integrated, web-based system that links prompt, clinical clerkship evaluation by the students with timely return to students of their own final assessments and grades.

- Continue efforts to increase the level of engagement of all clinical faculty in the teaching and assessment of knowledge, skills and professionalism throughout all four years of the educational program.

- Establish a Clinical Skills Center for actual and simulated patient encounters and scenario training that can be used for learning and assessment of achievement of pertinent educational objectives across all four years of the undergraduate medical education program, as well as in graduate and postgraduate medical education.

- Articulate a formal, documented charge to the Curriculum Committee from the Dean of the School of Medicine.

- Identify and implement a more robust curricular management system.

- The expectations that students take Step I and Step II of the USMLE should be strengthened and continually reinforced. The School of Medicine should study whether or not to institute a formal policy requiring students to take Step I before beginning their third year clerkships and Step II before application for residency.

**Medical Students Committee**

- Form a working group to examine ways to expand the current role of medical students in the admissions process.

- Ensure that the newly-created technical standards for admission of handicapped applicants are published in all admissions literature and are available on the Admissions website.

- Improve IT and related resources, including but not limited to the e-mail system, student portal, helpfulness and accessibility of IT Help Desk, reliability of 24-hour printing facilities on campus, expansion of CMMS to include all clinical clerkships, relocation and improvement of individual clinical clerkship websites.

- Renovate existing preclinical teaching facilities.

- Create a space devoted to less formal individual or group study.

- Identify more space appropriate for clinical teaching at Tisch and Bellevue Hospitals.
• Improve the system to make readily available reliable data on the demographics of students, faculty, and the patient population.
• Review the recruitment and admission processes of students to ensure that diversity initiatives are implemented.
• Increase efforts to recruit underrepresented and disadvantaged students and identify scholarship funds to support students.
• Continue to promote the work of the administration with the Dean's Council on Institutional Diversity to develop programs for a diverse faculty.
• Review the School’s visiting student policy to ensure across host departments that visiting students do not have priority or interfere with the student experience.
• Provide information from the Student Survey to departments/services with identified problems.
• Move forward with the plan to convene a task force of students, faculty and administrators to evaluate the current systems of mentoring, career counseling, and academic advising.
• Improve the accessibility of, and communication by, the Office of Financial Aid.
• Restructure exit interviews to take place on an individual basis after a general information session, thus allowing students time to analyze their situations and ask informed questions specific to their needs.
• Explain and justify to the student body the reasons for annual tuition and fee increases, and discuss concordant increases in supplies and cost of living so that students will have adequate information for structuring budgets.
• Re-evaluate restrictions on deferring loan repayments until completion of postgraduate training.
• Consider one-on-one financial planning with the goal of creating an annual, individualized budget by student request.
• Continue to state tuition refund policy during first-year student orientation.
• Increase accessibility and hours of operation of the SHS, including physician hours.
• Increase, and thereby improve awareness, of the availability of the Student Mental Health Service.
• Continue to explore additional options for comprehensive, cost-effective, healthcare plans for medical students.
• Whenever possible, ensure that physicians at SHS are not clinical faculty at the School.
• Offer all vaccinations at SHS free of charge.
• Continue to insure confidentiality and communicate scope of services offered at SHS.
• Increase awareness of student disability insurance.
• Adopt the Compact between Teachers and their Learners; ask students, house staff and faculty to formally agree to, and abide, by the Compact.
• Send the Student Handbook and a cover letter to matriculating students during the summer before their first year.
• Review and improve as needed the procedures for informing house staff and faculty of the student mistreatment policies.
• Convene a task force to revisit whether the School of Medicine should implement an honor code.
• Publicize policy and procedure for determination of AOA status, now included in the Student Handbook.
• Delineate clear policies for the appeal of clerkship grades and have them easily accessible via the curriculum webpage; provide this information verbally at the beginning of every clerkship.
• Continue to reevaluate the current usage of space in efforts to establish additional study space.
• Evaluate the possibility of relocating Rubin Gym and/or obtaining corporate rates for an off-campus gym.
• Provide students access to the Skirball and Smilow conference rooms in the evenings when they are not utilized.
• Cover the large expanse of underutilized space by the basketball court with grass or artificial turf. Purchase benches and other types of seating so students can enjoy this recreational area.
Faculty Committee

- Develop a formal mechanism for the responsible recruiter to inform the administration of the reasons for failure to recruit any leading candidate, with the ultimate goal of tracking and identifying centrally the common reason for any failed recruitments so that they can be remedied in the future.
- Develop a formal mechanism for exit interviews of established faculty who leave the institution to pursue other career opportunities in an effort to identify weakness in our faculty infrastructure.
- Enhance the system for delivery of faculty development activities.
- Create a website to serve as a faculty development clearinghouse, which would include creation and enhancement of web-based modules and web-based resources.
- Develop a mechanism by which to recognize the quality of teaching.
- Increase awareness of current teaching and evaluation activities (i.e., Topics in Medical Education and Technology seminar, other central and departmentally-based efforts).
- Post the rosters of members of the School and departmental Appointments and Promotion Committees on the Faculty Affairs website to increase faculty awareness.
- Review the School’s Conflict of Interest policies to determine if they could be better integrated.
- Verify that mentoring meetings are being held.
- Continue to publicize the mentoring committee requirements and processes both through the Office of Education, Faculty & Academic Affairs and the academic departments.
- Continue, in the upcoming leadership transition, to promote a high level of consultation and involvement of the faculty when important strategic decisions are made.
- Improve communication between the faculty and the Board of Trustees, perhaps through joint faculty-trustee committees and other like initiatives.
- Develop a central faculty electronic portal where resources relevant to faculty can be housed. In the interim, enhance and publicize by e-mail the resources and links located on the Faculty Affairs webpage.
- Mandate and enforce the usage of an active, NYU-domain, e-mail address by every faculty member in order to enhance and ensure communication.
- Constitute a task force to determine appropriate recognition and feedback mechanisms for the teaching responsibilities of the voluntary clinical faculty.

Educational Resources Committee

- Replace carpeting, seating and lighting in the Schwartz and Alumni Hall rooms and upgrade the multimedia projection facilities.
- Consider establishment of a committee to examine the current use of all of the teaching spaces in the School of Medicine.
- Renovate the first two floors of Coles to support the educational effort going forward.
- Upgrade multimedia capabilities and information technology throughout the Kahn Center.
- Continue to plan for a Clinical Skills Center to keep the School in a competitive position in the utilization of simulated environments.
- Study the quantity of, quality of, and demand for student study space; consider renovating at least one of the following spaces to provide additional student study space: Alumni Hall A, Schwartz Lecture Halls C/D, or the Student Cafeteria Annex; consider increased student access to other spaces and conference rooms in Skirball and Smilow in the evenings and off-hours when such spaces are not being utilized.
- Continue to explore opportunities to meet the library’s needs and expand its space.
- Continue to foster a relationship with the ERSP to explore and exploit whatever opportunities may arise to economically and efficiently alleviate space and facility constraints on campus.
- Continue to make reasonable and necessary investments in Rubin Hall, while strongly considering construction of a new dormitory.
• Develop a plan to respond to student housing demand through additions to the portfolio, both owned and leased.
• Undertake an outside assessment of student security in conjunction with an evaluation of overall security at the Medical Center.
• Continue to advocate for teaching space in all clinical facilities.
• Develop a strategic plan for the Medical Center, a major component of which should address the library and information technology.
• Appoint a formal IT Steering Committee to direct efforts and allocate resources across the medical center, and to forge technological integration of education with research and clinical care.
• Establish an Education IT Subcommittee with appropriate representation and subcommittees to address its major constituencies.
• Carefully review IT requests during the capital budgeting process.
• Review the decentralized IT resources and consider centralizing some of these resources under common IT management.
• Make wireless network access pervasive throughout the Medical Center physical space.
• Deploy full Web access on all public Tisch/Rusk workstations and make selected Web access to education sites available on clinical patient desktops.
• Provide a robust, external access method for easy access to all server-based files and applications.
• Establish unity of identity across the Medical School, Tisch Hospital, and to the extent possible, the clinical and teaching affiliates such as Bellevue.
• Allocate space to faculty and staff on a recently-acquired mass-storage device known as a SAN and work out details of sharing and managing that space.
• Continue to work on improving the availability and performance of Popmail, while looking at the feasibility of unifying e-mail systems across the Medical Center.
• In concert with the Hospital, utilize a professional outsourcer’s data center capability, with appropriate disaster recovery services; to the extent possible, upgrade the current data center to professional standards.
• Evaluate and obtain technology that makes videoconferencing, webcasting, etc. simple for the lay person.
• Move to a searchable, shareable, “industrial strength” curriculum database.
• Streamline service of the Student Printing Facility.
• Develop, through the IT Steering Committee, a strategy for evaluation of computer-based exams and for “teaching the teachers” how to integrate developing technology into standard and novel curriculum.
• Execute a strategy of support for research faculty that is extensible to other faculty, including back-up, support, and web-based collaboration tools.
• Evaluate the feasibility of an Enterprise Agreement for Windows Operating System and Office applications, as well as for analogous offerings for Apple equipment.
• Pursue an integrated architecture strategy of data collection and warehousing.
• Continue to improve the appeal, ease of navigation, and search-ability of the Medical Center’s web sites.
• Pursue a strategy of integrated calendaring that addresses personal, facility, and course calendaring.
• Continue to address library space issues in accommodating resource needs including study space, group learning space, computer access and appropriate staff space for its clientele; establish a specific plan and prioritization of overall facilities upgrades.
• Continue to have library faculty work with course and clerkship directors in both formal structures such as the monthly unit/module and clerkship director’s meetings and informally to ensure the most appropriate integration of library resources into the course materials delivered over the internet.
LCME Committee Membership

Steering Committee

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I. Report of the Institutional Setting Committee

A. Governance and Administration

Institutional Prioritization
The recent history of the School set the stage for Dean Glickman to establish a strategic plan for the School in the first year of his tenure. That plan was then expanded and modified over the subsequent years through a targeted, distributive process. Thus, the strategic planning for the Medical School is embedded in several overlapping and ongoing processes, all of which are led by the Dean of the School of Medicine/CEO of the Hospitals Center, the Senior Vice President for Health, and the Trustees. As the leader of both the School of Medicine and the Hospital, the Dean/CEO plays a crucial role, as does the Senior Vice President for Health, who is the key University leader overseeing the Medical Center. The three most prominent processes that comprise the strategic planning function from a University perspective are the following:

1. The activities and output of the Academic Medical Center Operations Committee (AMC), the senior leadership group at the Medical Center that meets weekly and is led by the Dean/CEO.
2. The long-range financial planning process that produces the running, ten-year financial plan for the NYU School of Medicine.
3. A recent report of a Strategic Committee of the Boards of the Medical School, Hospital, and University.

The AMC operates on two levels simultaneously. While many of the ongoing tactical decisions in the Medical Center come before this group, the AMC considers larger strategic issues on a regular basis. In some cases the agenda items are linked to the ten-year financial plans or the Trustee Strategic Committee, but in other cases, review is stimulated by the need to consider the implications of a particular decision upon the broad medical center, that is school and hospital. For example, until September 2006 the federal government had been reviewing the organization of the Veterans Administration health care facilities. Given the long term relationship between the NYU Medical Center and the VA, the way in which the School of Medicine relates to the VA process was considered strategically with respect to the effects of that relationship upon the teaching, research, and clinical care components of our mission. A second, ongoing example is the development of an integrated information technology system, which has numerous strategic as well as tactical dimensions. IT is assessed strategically at the AMC in relation to the School’s teaching, research and clinical care missions.

Since 2001, the School of Medicine has translated its strategic objectives into a ten-year financial model that is updated annually when the budget for the new fiscal year is developed. In the original ten-year model developed in the summer of 2001, a key question was whether the ongoing financial condition of the Medical School was consistent with the construction of the then-planned (and now recently opened) translational research building, that itself was a key ingredient in the strategic goal to improve research output at the School of Medicine. The ten-year model is the vehicle through which strategic elements such as faculty hiring, building construction and renovation, and financial factors are melded into a consistent picture that can be adjusted and assessed by the Medical Center and University senior leadership. Faculty growth, areas for specialization such as neuroscience, cancer, and imaging, facilities decision-making, and other “macro” strategic decisions are modeled in this process. A similar process took place on the hospital side for the completion of the clinical cancer center. The ten-year model is reviewed every two years by the Medical Center and University Trustees.

Finally, in January 2005, the Chairman of the University Board of Trustees, Martin Lipton, and the Chairman of the Medical Center Board, Ken Langone, jointly named a Trustee Strategic Committee composed of Medical Center and University trustees. Its goal was to identify the next set of strategic decisions that confronted the NYU Medical Center. Working closely with the Dean/CEO, Senior Vice President for Health, and other senior leaders of the Medical Center, the Trustee Strategic Committee met monthly over a
14-month period and produced a report that focuses on the need to upgrade facilities at the Medical Center. Because of the newly completed Smilow Research Building and the long overdue need to upgrade the Hospital’s clinical facilities, the Committee’s report stressed the need for clinical space, and to a lesser degree, research space, over the coming period. Both the deliberations of the AMC and the results of the ten-year modeling were incorporated into the Trustees’ report.

These three processes result in an organic, continuing review of strategic decisions by the administrative and trustee leadership of the Medical Center and the University. The results are shared with the broader Medical Center community by the Dean through meetings with departmental chairs, communications such as e-mails to the community, and town hall-type meetings.

In addition to the above-mentioned processes, several other strategic initiatives have taken place in specific arenas of the medical school. In the summer of 2000, the Research Advisory Council (RAC I) undertook a strategic review of the research programs at School of Medicine in the context of planning for and construction of the Smilow building. During this process, the RAC I members evaluated the research environment and the goals of the NYUSoM research portfolio in order to identify the priority growth areas. The translational research programs which are now housed in the Smilow building were determined through this careful analysis.

In the Education arena, development of Curriculum Policy 2001 was a strategic initiative used to guide the curricular reforms which have been implemented in the years since the last LCME visit. In addition, in January of 2003, the GMEC held its first retreat for program directors and administrative staff from the affiliate hospitals. Approximately 70 people participated in order to establish the priorities, goals and major areas of effort for graduate medical education for the next five years. The common themes included the increased need for institutional support to facilitate communication and obtain the resources necessary to provide education, clinical continuity of care and research opportunities for trainees in a time of fiscal constraints. In addition to meeting monthly to provide institutional oversight for all graduate medical training programs, the GMEC established an Inter-Institutional Task Force composed of the financial and academic leadership of each of the major affiliate hospitals. This group also meets monthly and has successfully brought together the key constituencies necessary to set policy and strategy, as well as to implement change in the graduate medical education arena.

We believe that the lack of a single, formal medical-center based strategic planning effort can be explained by our recent history. Beginning in June 1996, there was a series of dislocations that began with a decision to merge both the schools and hospital systems of NYU and Mount Sinai, the failure of that attempt, the decision to merge only the hospital systems, a suit by our faculty to block that merger, the ultimate merger on July 16, 1998 and the syncopated dissolution of the merger over the ensuing eight years, a process that was completed in August 2006. Despite these dislocations, we believe that the School’s strategic planning activities and our setting of priorities as described above have served the School very well in the interval since the last LCME survey. Nonetheless, the committee believes that with the new stability that has been achieved, a change in strategic planning may be useful.

**Recommendation**
- Complete a formal, integrated strategic plan for the School of Medicine.

**Governance Structure**
The School of Medicine has enjoyed a solid and remarkably stable structure of governance since the last LCME site visit. The last self-study looked to the appointment on September 1, 1998 of Robert M. Glickman as the 14th Dean of the School with expectations of renewed growth and vigor and a return to more tranquil times. The former expectations have been met, the latter not entirely. Until January 1998, the School of Medicine, Tisch Hospital (the University Hospital of New York University), and the Rusk Institute of Rehabilitation Medicine were known as the NYU Medical Center and were organized as an administrative unit of the University. All assets of this Medical Center campus were owned by NYU. After the merger, the
clinical assets were owned by Mount Sinai-NYU Health. The merger called for the decline over 5 years and then cessation of the traditional cash support of the medical school by the hospital and the new Dean was hired to reinvent the School’s administration after losing the joint Medical Center administration that had managed both School and Hospital for many years.

That new administration was built, but the merger was never successful. Within three years, all attempts at merging the activities of the several campuses had ceased, the President of MSNYU Health had resigned, and Dean Glickman had been appointed the CEO of NYU Hospitals Center to complement his role as Dean and, ironically, to reunite the campus. Since that time, the Boards of Trustees of the School and the NYU Hospitals Center have always met jointly; Mr. Ken Langone serves as Chairman of both Boards, allowing for maximal cross-fertilization despite the two entities residing in separate corporations.

The consolidation of the roles of Dean and CEO has facilitated a greater integration within the governance structure. The Dean/CEO has developed a capable management team, which is appropriate for an institution of this size and characteristics.

With the restructuring as delineated above, the School of Medicine has become more clearly aligned with the University, to the benefit of both. The School is owned by the University and governed by its bylaws and Board of Trustees. It is one of the thirteen schools of the University so designated. The faculty continues to be governed by the University's faculty bylaws. The School of Medicine faculty elects senators to represent the School of Medicine on the University Senate and University Faculty Council. In addition, there is an NYU School of Medicine Foundation Board that acts in an advisory and fundraising capacity for the School and makes recommendations to the NYU Board of Trustees. Membership on the NYU School of Medicine Foundation Board is comprised largely of members from the NYU Board of Trustees. In order for the School to issue debt or borrow money, approval from the New York University Board of Trustees is required. In addition, all faculty appointments are approved by the Foundation Board after approval by its Academic and Affiliate Affairs Committee and the Department Chairs. All tenure recommendations must go through this approval process and are then forwarded to the New York University Board of Trustees for final approval.

The achievements in the School during this period of continuous, rapid change have been remarkable and are cited in other sections of this report and the database.

**Interaction between Medical School Administration and University Administration**

Since the last LCME site visit, the collaboration between the School of Medicine and the University has increased substantially in both dimensions and quality. Under the leadership of President John Sexton, Dean Robert Glickman, and Senior Vice President for Health, Robert Berne, the School of Medicine, and in fact, the entire Medical Center, is a more organic part of NYU that it has been any time in recent memory.

Listed below are examples of a range of collaborations and interactions developed since the last re-accreditation, and that are ongoing.

The Dean of the School of Medicine reports to the President of NYU through the Senior Vice President for Health, and the extent and quality of the interactions between the Dean and the Senior VP identify the coordination of University-School interactions and collaborations.

The Senior Vice President for Health is a member of the Academic Medical Center Operations Committee (AMC), the senior leadership group at the Medical Center that meets weekly and is lead by the Dean/CEO. The Senior Vice President for Health is also a member of the AMC Finance group that meets once a week to consider significant financial issues.

The Senior Vice President for Health is a member of the University Core, composed of the President, Senior Vice President for Health, Provost, Executive Vice President, Dean of Arts and Science, General Counsel,
and Executive Assistant to the President, a group that meets roughly four times per week to discuss and assess University-wide strategy and current issues.

The Dean/CEO and Senior Vice President for Health are members of the University Leadership Team (ULT) composed of the President, Provost, Senior Vice President for Health, deans, vice presidents, and vice provosts. The ULT, which meets three times per month, is a key forum for the discussion and assessment of University-wide issues.

The Senior Vice President for Health is an ex-officio member of the NYU School of Medicine Foundation Board and attends the following committee meetings: Finance, Audit and Compliance (Ex-Officio member), Academic Affairs, and Patient Quality. In addition, the President, Provost, General Counsel, and Executive Vice President are School of Medicine Foundation Board members.

The Senior Vice President for Health and the Provost review all promotion and tenure decisions recommended by the Dean/CEO.

The Senior Vice President for Health, Medical Center Senior Vice President for Finance, the Vice Dean for Administration, the Medical School CFO, and the Vice President for Audit and Compliance regularly attend the University Audit Committee meetings.

Medical School faculty and students actively participate in the university-level governance structures such as the University Senators Faculty Council and the Student Senators Council. For the 2006-7 academic year, School of Medicine Professor Virginia Black is the President of the Senators‘ Faculty Council.

Dr. Robert Grossman is a member of the Provost’s University Academic Priorities Committee that reviews university-wide academic issues and is chaired by the Dean of the Faculty of Arts and Science.

The School of Medicine’s PhD program is administered as part of the PhD programs in the Graduate School of Arts and Science. The School of Medicine is represented on the University’s Graduate Commission.

There are several emerging and ongoing collaborations at the PhD level in areas such as neuroscience and developmental genetics.

The School of Medicine is one of five schools within the University collaborating on the first University-wide degree, the Masters in Global Public Health. The other schools are the College of Dentistry (with the College of Nursing), the Steinhardt School of Education, the Wagner School of Public Service, and the School of Social Work. One of the two Co-Directors of the Global MPH is Dr. Karen Day, a School of Medicine professor and chair of the Department of Medical Parasitology.

The Department of Emergency Medicine, with its Chair, Lewis Goldfrank, MD as PI, is leading a project in the University’s Center for Catastrophe Planning and Response to develop public health responses for a large-scale terrorist attack. NYU’s Courant Institute of Mathematics is developing the modeling capacity for this project.

The College of Nursing is collaborating with the Medical Center for placements for students and rounds for faculty.

The School of Medicine founded the University-wide Education and Technology Committee with members from the Schools of Education, Business, Arts, the Courant Institute of Mathematical Sciences, the Center for Advanced Digital Art, the Digital Library, the Office of the CITO and others to develop ALEX, a new ecology for learning that optimizes the use of the new information technologies for education.

The Department of Radiology is collaborating with the Chemistry and Physics departments in various aspects of imaging research and applications.
The School of Medicine Office of Technology Transfer services the entire University.

Faculty at NYU’s Courant Institute of Mathematics are collaborating with faculty at the School of Medicine in genetic research and the development and application of advanced computer algorithms.

The School of Medicine and the College of Dentistry are collaborating through the University’s Center for Catastrophe Preparedness and Response to develop training materials for first responders.

The NYU Child Study Center is an important clinical, research and training site of the Medical School. The faculty offers a minor (Child and Adolescent Mental Health Studies) to undergraduates at the Washington Square campus. The Child Study Center collaborates with the Student Health Service and the university administration to meet the mental health needs of the undergraduate population. This includes participating in policy making, mental health screening and training staff. The relationship between the medical school and the university administration is strong and has been effective in dealing with crisis management at the Washington Square campus, encouraging collaborative grant proposals, and promoting joint faculty recruitment and research efforts.

Cohesiveness of Leadership Amongst Medical School Administration, Health Sciences Center Administration, and Administration of Major Clinical Affiliates
Communication among a medical school, the parent university, and its affiliated hospitals is essential but complex. It is accomplished at NYU in a number of different ways. First, there is the weekly, two-hour, AMC meeting, at which the leadership of the Medical School, the NYU Hospitals Center, and the University discuss important issues. Attendees include: the Dean/CEO, the Senior Vice President for Health at New York University, the Tisch Hospital President, the Vice Dean for Clinical and Hospital Affairs, and the Vice Dean for Education, Faculty and Academic Affairs, as well as other senior members of the management team. The Vice Dean for Clinical Affairs also meets weekly with the leadership at Bellevue and monthly with the leadership of the VA to address a variety of issues. Within this matrix, the leadership at the three main hospitals, the medical school, and the University are in communication. These conversations feed a web of other committees specifically concerned with education and training, especially the Curriculum Committee and the Graduate Medical Education Committee.

Organizational Stability
The medical school administration has enjoyed a period of relative stability since the last LCME site visit. For the past eight years, the School has benefited from a singular vision under the administration of Dean Robert Glickman. A reorganization of the School’s management structure was completed after the merger of the Hospital with Mount Sinai, and another, unexpected reorganization was undertaken when the NYU Hospitals Center de-merged from Mount Sinai. Both of these reorganizations have been successful and have resulted in an efficient and effective management structure for the NYU Medical Center.

Having achieved what he felt was possible in almost a decade at the helm, Dean Glickman announced in March 2006 his intention to step down at the end of June 2007, providing adequate time for an orderly transition. After his announcement, Martin Lipton, Chair, NYU Board of Trustees, Ken Langone, Chair, NYU Hospitals Center Board of Trustees, John Sexton, President, NYU, and Robert Berne, Senior Vice President for Health, NYU sent an e-mail to the NYU Medical Center community, indicating their continued support and their expectations that the momentum Dean Glickman has created would be maintained throughout the last year of his tenure. A Search Committee was formed and is chaired by Joseph Zuckerman, MD, Chair of Orthopaedic Surgery, with broad representation from the Medical Center community.

Since the last LCME site visit, the position of Vice Dean for Education, Faculty and Academic Affairs was created. This position has oversight for all educational programs within the School, as well as the management of faculty and academic affairs. Richard Levin, MD was appointed to this post in 2000 and left
the institution to become Dean of the Faculty of Medicine and Vice Principal for Health Affairs at McGill University in September 2006. Steven Abramson, MD, who was the Vice Dean for Education at the time of the last site visit, was appointed to this position in September 2006. Dr. Abramson has been an active member of the School’s administration since 1991, having served as Associate Dean for Curriculum, Vice Dean for Education, and Associate Dean for Clinical Research; his appointment, therefore, facilitated a smooth transition. Another change since the 2000 site visit is that Kathleen Gallagher replaced John Deeley as the Vice Dean for Administration.

The Office of Medical Education and Student Affairs in the Dean's Office was reorganized and is now headed by Veronica Catanese, MD, Senior Associate Dean for Education and Student Affairs. An Associate Dean for Student Affairs, Lynn Buckvar-Keltz, MD was appointed, effective September 2006. Prior to this appointment, she was the unit director for Physical Diagnosis and had had extensive experience in student issues. The Committee believes that this reorganization will be highly beneficial.

**Recommendation**

- Consider the appointment of a Vice Dean for Research to further the research mission of the School.

**B. Academic Environment**

**Program Organization**

The Sackler Institute at School of Medicine is a division of the Graduate School of Arts and Science of New York University. It offers programs in the basic medical sciences leading to the PhD degree and, in coordination with the Medical Scientist Training Program, combined MD/PhD degrees. Students can do their thesis research in the laboratories of more than 160 faculty members at the Medical Center who have appointments in basic science departments, associated faculty located at the main campus (Applied Mathematics, Biology, Chemistry, Computer Sciences, Center for Neural Science and Physics), or with selected researchers at the NIH. Interdisciplinary training is offered in 11 different programs: Biomedical Imaging, Cellular and Molecular Biology, Computational Biology (inter-university program), Developmental Genetics, Medical and Molecular Parasitology, Microbiology, Molecular Oncology and Immunology, Molecular Pharmacology & Signal Transduction, Neuroscience and Physiology, Pathobiology, and Structural Biology. Each program is individually administered with its own requirements. Students in most programs complete their doctoral training in five years. There are no terminal Master’s degree programs offered at the Sackler Institute. A unique feature of the Sackler programs is that while administratively students must apply to individual programs for admission, all incoming students enter an “Open Program.” This allows students the choice of performing research rotations during their first academic year in any laboratory of a member of the graduate faculty of the Sackler Institute. With the help of a Graduate Advisory Committee, each student selects a thesis adviser and area of study by the end of his or her first academic year.

The Institute is the largest full-time PhD granting division of New York University, awarding more than 40 PhD degrees per year. As of September 1, 2006 the Sackler Institute has approximately 230 PhD and 76 MD/PhD candidates and admits an average of 40 to 50 new students annually (~40 to the PhD program and 10 to the MD/PhD Program). Complete information about the graduate programs of the Sackler Institute can be found at: [http://www.med.nyu.edu/Sackler](http://www.med.nyu.edu/Sackler).

Students are drawn from a pool of highly qualified national and international applicants. About 15% of the students are drawn from underrepresented minority groups; 55% are women and 25% are international students (from 22 different countries and 5 continents).

Through an aggressive national recruitment program there has been a significant increase in both the number and quality of graduate applicants. Over the past ten years there has been a ~250% increase in total applicants, an ~600% increase in U.S. applicants and a 2000% increase the number of underrepresented minority (URM) applicants. These students selected NYU/Sackler over a number of other nationally

The School of Medicine has now become a national leader in recruiting, matriculating and graduating underrepresented students to our graduate programs. Besides the 2000% increase in the number of underrepresented applicants (who now make up 21% of our total U.S. pool), there has been concomitant 500% increase in the number of underrepresented minority matriculates (which now make up 15% of our graduate student population). In 2005, the Sackler Institute ranked in the top five programs in the country in awarding eight doctorates to URM’s. The Sackler Institute is presently listed on the NIGMS website (http://www.nigms.nih.gov/training/diversity_examples.html) as a program with a notable record of recruiting and graduating URM’s.

All graduate students are supported by either assistantships or traineeships, which carry stipends of $26,000 per year in addition to all tuition, fees, and health insurance costs. Financial support is provided for the entire duration of study. No teaching or laboratory assistance is required for the receipt of financial aid. Low interest housing loans of $1500 a year are also available for qualified students, as are loans for the purchase of personal computers.

**Internal Evaluation Mechanisms**

- The Sackler Institute annually conducts a self-study of all its graduate programs. The process is carried out by the Graduate Advisory Committee and the results are reviewed with the Sackler Steering Committee, Faculty Council, Council of Chairs and the Education Committee of the Vice Dean for Education, Faculty and Academic Affairs.
- Every 7-8 years the Dean’s Office formally reviews each Medical School department. The graduate education component is one of the processes evaluated.
- Faculty must meet a strict set of criteria in order to become a member of the Sackler Institute. These include: a primary or secondary faculty appointment in a basic science department; guaranteed laboratory space; sufficient funding to support a graduate student; publication record over the past two years; and evidence of active involvement in the academic endeavors of the Institute (teaching, involvement in the admissions process, mentoring, etc.).
- All graduate courses are evaluated by students on a continual basis using an online evaluation mechanism, through which both course content and faculty teaching are evaluated.

**External Evaluation Methods**

- As a division of NYU’s Graduate School of Arts and Science (GSAS), the Sackler Institute must have its programs and courses approved by the University’s Graduate Commission. GSAS is itself reviewed on a regular basis by the State of New York and national accreditation by the Middle States Commission on Higher Education. The Sackler programs are also reviewed by the National Research Council (NRC).
- With five NIH T-32 Training Grants and one NSF IGERT award in its portfolio, the Sackler Institute undergoes a rigorous evaluation every five years during the grant renewals.

**Postdoctoral Program**

The Sackler Institute is also responsible for postdoctoral training at the Medical Center and has established a formal Postdoctoral Training Program to improve the quality of life and educational experience for Postdoctoral Fellows. Presently there are approximately 350 postdoctoral trainees at the Medical Center. A dedicated office has been established to assist fellows in all aspects of their lives including housing, employment opportunities, mentoring, social activities, and organization of career development seminars. In 2005, the Medical Center adopted a formal Postdoctoral Policy and Handbook (http://www.med.nyu.edu/sackler/postdoc/ pdh2006.pdf), which describes all aspects of postdoctoral training.
The Postdoctoral Program Office is staffed by two fulltime employees; a coordinator and a junior administrator. The coordinator reports directly to the Senior Associate Dean for Biomedical Sciences, with whom he meets on an almost daily basis. The coordinator works with a formalized Postdoctoral Council to offer a number of services for the postdoctoral community including: quarterly New Postdoctoral Orientation seminars, quarterly community newsletters, weekly happy hours that are co-sponsored by the Postdoctoral and Student Councils, and bi-monthly Postdoctoral Socials. A large focus of the Postdoctoral Program at the School is the development of career skills and exposure. To this end, on a bi-monthly basis, the Postdoctoral Council organizes events for the school's Career Workshop Series; sessions include an exploration of careers in the fields of academia, business, government and industry, grant writing and funding workshops, etc. In addition, on a bi-annual basis, NYU organizes the largest career development symposium in the northeast for graduate students and postdoctoral scientists. In preparation for these careers, the Postdoctoral Council also facilitates practice job talks to assist those who are actively pursuing jobs in academia and industry. Additional career development events are sponsored by the Future Science Educators, an organization of graduate students and postdocs dedicated to developing teaching skills and resources and to providing teaching opportunities and mentoring projects that are fundamental to the success of future science-based careers. The Postdoctoral Program also provides opportunities to prepare for positions in industry by facilitating a technology transfer internship program in coordination with the school's Office of Industrial Liaison. Information about the Postdoctoral Program and all institutional policies unique to the community, including details of the school's postdoctoral appointment process, stipend recommendations, and postdoctoral tenure can be found at: www.med.nyu.edu/sackler/postdoc.

The School of Medicine has been a leader in postdoctoral education on both the local and national level. It was a strong supporter, both independently and through the AAMC, of the organization and creation of the National Postdoctoral Association (NPA). NYU is a Sustaining Member Institution of the NPA and works closely with the NPA Executive Office (i.e., career fairs, national meetings, in an advisory capacity, etc.); an NYU Postdoctoral Fellow was recently elected (2005) to the Executive Board of the NPA.

Other Sackler Programs
The Sackler Institute also has organized several unique programs which have received national recognition. They include:

- Establishment of the largest graduate student and postdoctoral fellow career day in the northeast. The “What Can You Be with a PhD” event is held every two years at the Medical Center and is now co-sponsored by the New York Academy of Sciences, The National Postdoctoral Association, and all of the other major graduate programs in the NYC area (including UMDNJ and the University of Pennsylvania). The program attracts over 600 graduate and postdoctoral fellows annually, offering them career advice, skills workshops and a chance to interact with representatives from academia, business, government and industry.

- For the past five years the Sackler Institute has offered a unique one-day course, “Scientific Methods: Survival Techniques for Young Investigators in Biomedical Research,” to all our incoming PhD and MD/PhD students as well as postdoctoral fellows on the skills needed to deal with the practical issues of being a student in today's complicated scientific environment. This course deals with practical issues such as how to: get (any) laboratory techniques to work reproducibly and predictably; read a paper actively rather than passively; pick a research project; write a scientific paper; and be an effective seminar speaker. The course director, Dr. Tung-Tien Sun, is a nationally known educator who teaches a similar course through the country and will be highlighted at this years AAMC's GREAT Meeting. This course always receives rave reviews and was the subject of a recent paper in Nature Reviews/Molecular Cell Biology (Vol. 5, July 2004, pp 577-581). In fall 2006, 310 students attended, including all first year PhD and MD/PhD students from NYU, Mount Sinai, Einstein, Columbia, Cornell/Weill and UMDNJ.
• In conjunction with the New York Academy of Sciences (and all the other major research institutions in the NYC area,) we have helped establish the Science Alliance, a networking and development program for graduate students and postdocs http://www.nyas.org/programs/scienceAlliance.asp.

• Working with the University of Milan, we have created one of the first combined international PhD programs. Students are selected jointly by NYU/Sackler and the University of Milan to carry out their dissertation research at NYU and, on completion of their NYU PhD, these students automatically receive the equivalent Italian degree. A new eight year extension of this five-year old program was recently approved.

• In another unique international collaboration, NYU/Sackler has partnered with the Interdisziplinäres Zentrum für Infektionsbiologie und Immunität (ZIBI), the unique consortium of research universities and institutions in Berlin, (Humboldt University, Fachgebiet Virale Infektionen of the Robert Koch-Institut, the Institut für Zoo- und Wildtierforschung, the Institut für Virologie Charité-Universitätsmedizin Berlin, the Institut für Mikrobiologie und Tierseuchen Freie Universität Berlin and the Max-Planck Institute for Infection Biology), in the hope of establishing future research collaborations between our two groups (Humboldt University, Fachgebiet Virale Infektionen of the Robert Koch-Institut, the Institut für Zoo- und Wildtierforschung, the Institut für Virologie Charité-Universitätsmedizin Berlin, the Institut für Mikrobiologie und Tierseuchen Freie Universität Berlin and the Max-Planck Institute for Infection Biology) interested in the area of pathogenesis. ZIBI with significant help from the Sackler submitted a grant to the German Research Council, which has been recently funded (2.9 million Euros over 4.5 years) to facilitate this collaboration. This past year, the First ZIBI/Sackler Symposium on Host Pathogen Interactions was held at the New York University Medical Center. Over 150 students and faculty from both groups (including two Max Planck Directors) participated in this event.

Sackler Institute Collaboration and Support of the Overall Medical School Mission
The Sackler Institute is actively involved in supporting the overall academic mission of the medical school. Specific examples include:

• The Sackler Institute organizes and facilitates most research opportunities for the medical students: the Honors Program in Medicine (NIDDK grant); HHMI Research Scholars Program (Cloister’s Program) and Medical Fellows Program; Doris Duke Clinical Research Fellowship Program; Sarnoff Cardiovascular Fellowship Program; and the MSTP MD/PhD Program.

• Sackler graduate students and postdoctoral fellows mentor most medical students who carry out basic science research in the Honors and MSTP programs and during independent research elective rotations.

• Sackler graduate students and postdoctoral fellows serve as Teaching Assistants in a number of medical school courses.

• The Institute, in coordination with the Office of Diversity Affairs, is very active in recruiting a diverse student population to the School of Medicine. A prime example is the Institute’s NAMP (Native American Mentoring Program), which has increased the number of Native American applicants to the Medical School from 3 in 2004 to 49 in 2006.

Residency and CME Impact
Since the time of the last LCME review, Graduate Medical Education at the School of Medicine has been completely restructured. In July of 2002, the senior leadership of the School of Medicine and the affiliate hospitals approved a strategic plan to enhance and update the systems, as well as facilitate and streamline the processes that support the GME enterprise. A new Senior Administrative Director of the School of Medicine House Staff Affairs Office (HSAO) was recruited to oversee this process, and Carol A. Bernstein, MD was appointed as the Institution’s first Assistant Dean for Graduate Medical Education. Dr. Bernstein reports to
The institution committed to renovating a new physical location for the HSAO and invested in the development of a new technological infrastructure, including a customized house staff management application to track training, credentialing, and reimbursement data and to monitor the ACGME program review cycle.

The Dean established an Inter-Institutional GME Task Force consisting of the leadership from the School of Medicine, GMEC, NYU Hospitals Center, Bellevue Hospitals Center, House Staff Council, and representatives from Finance Departments of the major affiliates to ensure that the School of Medicine and primary hospital affiliates would be able to maximize the coordination of resources for GME. Task Force initiatives have resulted in a shared philosophical and financial commitment to GME, have been instrumental in identifying and collaboratively pursuing additional means of support, and have fostered increased sharing of existing resources.

The Dean’s Office organized the first NYU Graduate Medical Education Retreat in January of 2003. This retreat was specifically designed to raise awareness of the ACGME Outcomes Project, to reinforce the importance of integrating competency-based education and assessment into each training program’s curriculum, and to establish a dialogue among Program Directors regarding the six general competencies. As a result of this event, the GMEC commissioned its Curriculum Subcommittee and Technology Subcommittee to support and provide additional resources to all training programs in the areas of the six general competencies. The Curriculum Committee conducted a comprehensive needs assessment across all training programs and has been preparing educational modules to address the Systems-Based Practice, Professionalism, and Practice-Based Learning and Improvement competencies throughout the institution.

These changes were acknowledged by ACGME in June of 2005 as it awarded the School of Medicine a full, five-year cycle as the institutional sponsor for graduate medical education. There were no institutional citations in the review and four pages of commendations.

All of these initiatives have broadened the educational scope of graduate medical education and have contributed to an improved environment for the teaching and education of medical students who work side by side with house staff in all of the affiliate hospitals. In addition, “Resident as Teacher” activities, developed in conjunction with the Macy Initiative (a project to develop a state of the art, innovative, comprehensive communication skills curriculum grounded in a set of core competencies that should be mastered by every graduate physician) have been carried out in four departments at the School of Medicine. These activities focused on Core Skills of Observation/Feedback, Microskills, Small Group Teaching and Conflict Resolution, and they have greatly enhanced residents’ abilities to provide constructive feedback to medical students on clinical rotations. Finally, the competency and work hour initiatives of the ACGME have enhanced the School’s efforts to ensure that both residents and medical students have an opportunity to learn about the clinical care of patients in optimal training settings which emphasize outstanding patient care in the context of a rich research milieu.

Continuing medical education programs run by the academic departments are available, without charge, to any students who wish to avail themselves of the opportunities. The Continuing Medical Education (CME) program presents an opportunity for medical students to enhance their clinical knowledge and to network with physicians and faculty from around the country relative to their future plans and preparation.

Research Activities
Research has always been a major institutional priority at the School of Medicine. Under the leadership of Dean Glickman and as part of the Growth Agenda, the research program has undergone significant development, including designation of research priorities, focused research recruitment, refurbishment of
over 30,000 square feet of existing laboratory space, and opening of the Smilow building in the spring of 2006.

In FY05, the School’s research programs received $166,731,031 in grant funding, of which 86.2% was from federal agencies. Federal agencies awarded 452 grants for a total of $143,738,182, and non-federal sponsors awarded 247 grants for a total of $22,992,849. In FY05, the School ranked 36th in NIH funding to medical schools. We expect our total grant portfolio to increase by 10% over the next seven years with the opening of the Smilow Research Building and the associated recruitment of over 40 new investigators.

There are a number of centers and institutes at the School which facilitate research activities and collaboration. The NYU Cancer Institute (NYUCI), a designated NCI Cancer Center, encompasses a broad spectrum of investigation in the field of oncology, including basic laboratory research, investigations into the environmental causes of or contributing factors to tumorigenesis, and clinical studies involving evaluation of new therapeutic modalities and multimodal approaches to advanced cancer therapy. The NYUCI is organized into eight specialized programs around three divisions: Experimental Oncology, Cancer Prevention and Control, and Clinical Oncology.

The Cancer Center has multiple clinical-translational research centers. Two examples are provided below.

- **NYU Lung Cancer Biomarker Center.** This clinical and epidemiological center, funded through the NCI Early Detection Research Network, has enrolled over 1000 long-term smokers for screening and 160 patients with stage I-II lung cancers undergoing resection to obtain data on demographics, history and clinical manifestations. Samples are shared through a national NCI-funded network.

- **Locally Advanced Breast Cancer (LABC) Center of Excellence.** Led by Drs. Sylvia Formenti and Robert Schneider, this Department of Defense-funded Center of Excellence studies LABC as a model to understand the progression of breast cancer from local disease to metastasis.

The Skirball Institute of Biomolecular Medicine was established in 1993 to foster basic science investigations in four core programmatic areas: developmental biology, molecular neurobiology, molecular pathogenesis, and structural biology. An ongoing aim of the Skirball Institute is to accelerate the transition from developments in the laboratory to the clinical environment.
The Joan and Joel Smilow Research Building was opened in the spring of 2006. Recruitment into the Smilow Building is focused on a strategic plan to increase translational and basic research through an emphasis on nine key programs: Cancer, Cardiovascular Biology, Dermatology & Skin Biology, Genetics/Genomics/Proteomics, Medicine/Infectious Diseases, Medicine/Renal, Microbial Pathogenesis, Molecular Neuroscience, and Neuroscience Systems. As discussed earlier in the report, the priority research growth areas were determined after a review of the School’s research environment and the goals of our research program as part of the RAC process.

In addition, there are many other clinical and basic science research centers located throughout the School. Some highlights are listed below.

- AIDS Clinical Trial Group (ACTG). Led by Drs. Judith Aberg and William Borkowsky, the School’s adult and pediatric ACTGs enroll between 100 and 170 patients per year in clinical trials.
- Center for AIDS Research (CFAR). Led by Dr. Fred Valentine, the NYU CFAR was one of the original 14 federally-funded centers.
- Nelson Institute of Environmental Health Science. The Nelson Institute was one of the first NIEHS-designated Centers of Excellence and is a pioneer in the study of inhalation toxicology and chemical carcinogenesis. Its principal objective is to translate advances in molecular biology into novel applications for population-based detection of biomarkers for human exposure to toxic and carcinogenic materials.
- NYU Child Study Center. Directed by Harold Koplewicz, MD and established to provide mental health care for children and adolescents, the NYU Child Study Center comprises a number of institutes (Institute for Attention Deficit-Hyperactivity and Related Disorders, Institute for Children at Risk, Institute for Pediatric Neuroscience, Institute for the Study of Child and Adolescent Anxiety Disorders, Institute for the Study of Tourette’s and Movement Disorders and the Institute for Trauma and Stress). The NYU Child Study Center is one of seven sites that have received NIMH funding in support of specific clinical pediatric psychopharmacology trials. Recently, the State of New York has partnered with NYU to build a new $33M facility to house the Center and support its programs.
- General Clinical Research Center (GCRC). Directed by William Rom, MD, the NYU GCRC was funded as one of NIH’s first 12 in 1960.
- The Leon H. Charney Division of Cardiology and the NYU Cardiac and Vascular Institute. Glenn Fishman, MD and colleagues were recruited as part of the Dean’s Growth Agenda and supervise clinical/translational research in cardiovascular disorders. These programs include the Heart Rhythm Program, the Marc and Ruti Bell Vascular Biology and Disease Program, the Heart Failure Program, and the Cardiovascular Clinical Research Center (CCRC). The CCRC is a clinical coordinating center for multi-center clinical trials.
- Center for Community Health and Research. Under the leadership of Mariano Rey, MD, the Center includes the Center for the Study of Asian American Health, the Center for Immigrant Health, the Center for Health and Human Rights, the Center for the Study of Latino Health, and the Center for the Study of Black and African American Health. The Centers within the Center for Community Health and Research all share the goal of understanding, addressing, and reducing health disparities in underserved and minority populations using a community-oriented approach.

In the academic departments, many of the Chairs and Division Directors hired as part of the Growth Agenda have focused on research, and specifically on translational research. This period of strategic recruitment of new Departmental Chairs, Division Directors and full-time investigators is central to Dean Glickman’s Growth Agenda, and in its scope is unprecedented in the history of the School. The Committee believes that this infusion of new faculty, the investment in technological needs, the renovation of existing laboratories, and the opening of the Smilow Research Building will be transformative to the translational research environment of the School.

In addition, since the last LCME site visit, the School has created two new academic departments: Emergency Medicine and Cardiothoracic Surgery, which have been integral in facilitating the research
activities of the School in their respective areas. An excerpt from the Department of Emergency Medicine’s mission statement indicates the importance of research within the Department: “Perform funded clinical and basic science and translational research that is considered intellectually and socially important, innovative, and influential to the clinical practice of Emergency Medicine.” The Department of Emergency Medicine has focused on issues encountered in a large, public, urban teaching hospital, such as substance abuse, HIV, epidemiology, medical toxicology, terrorism events and disaster management, and socioeconomic healthcare issues. In addition to the research within the Department, the creation of the Department has facilitated collaboration of research among the academic departments and has created numerous training and research opportunities.

The Department of Cardiothoracic Surgery, previously a division within Surgery, has developed multidisciplinary conferences to assist in identification of the most appropriate patients for clinical trials. They are building a self-sustaining Thoracic Surgery Research Laboratory, which will be a state-of-the-art molecular biology facility. In addition, the Department has the Seymour Cohn Basic Research Laboratory, which provides training to prospective clinicians who aspire to become translational scientists. The transition to departmental status has allowed the expansion of these efforts.

In order to further evaluate the research activities of our faculty, the Committee reviewed the number of peer-reviewed journal articles by department. In calendar year 2005, our faculty published 2,463 articles in peer-reviewed journals (718 from our basic science departments and 1745 from our clinical science departments). In addition, our faculty wrote 24 books and 67 book chapters. The Committee believes that the number of peer-reviewed publications, books and book chapters published by our faculty is further evidence of the success of the faculty’s research activities.

Further evidence of the high quality of our faculty members’ research is highlighted below.

- Several members of our faculty are members of the National Academy of Sciences (Richard Novick, David Sabatini, Ruth Lehmann, Rodolfo Llinas, Dan Littman) and of the Institute of Medicine (Jo Ivey Boufford, Robert M. Glickman, Lewis R. Goldfrank, Rochelle Hirschhorn, David Sabatini, Dorothea Zucker-Franklin).
- Many of our faculty serve as editors or members of editorial boards for national and international scientific journals and a large number serve or have served as members of study sections at NIH and other granting agencies.
- Twelve members of our faculty are listed as ISI Highly Cited Researchers (Martin Blaser, Steven Burakoff, Lynn DeLisi, Michael Dustin, Milton Kramer, Morton Lippmann, Dan Littman, Rodolfo Llinas, Victor Nussenzweig, Daniel Rifkin, Jan Vilcek, Edward Ziff).

In summary, the Committee believes that the research efforts of our faculty, expanded and strengthened by the Growth Agenda over the last eight years, are exceptional and are more than adequate to meet the School’s mission and goals.

**Adequacy of Resources**
Research activities at the School are physically distributed among the Medical Science Building (approximately 120,000 square feet), Skirball Institute of Biomolecular Medicine (60,000 square feet), Bellevue Hospital (approximately 26,000 square feet), Public Health Building (20,000 square feet), VA Hospital (40,000 square feet), Hospital for Joint Diseases (11,000 square feet) and Sterling Forest (72,000 square feet). Additionally, faculty members from the Department of Psychiatry conduct research at the Nathan S. Kline Institute for Psychiatric Research, which recently opened a new research complex with 200,000 square feet of laboratory, clinical research, and office space.

In April 2006, the School opened the Joan and Joel Smilow Research Center, a 13-story, state-of-the-art biomedical research center. With this opening, approximately 110,000 new square feet of additional space
for laboratories and conference rooms were added to the School’s portfolio. With the opening of the Smilow building, the aggregate amount of research space is 368,591 square feet.

The School provides several core services in support of the research mission. The Division of Laboratory Animal Resources (DLAR) provides centralized veterinary services for the Berg Institute Central Animal Facility, the Skirball Institute Central Animal Facility, the Department of Medical and Molecular Parasitology Central Animal Facility, and the Kriser Dental Center Animal Facility, as well as a number of smaller satellite sites. DLAR oversees the housing and maintenance of the animal facilities, as well as assists with routine technical procedures and veterinary diagnostics.

To facilitate the conduct of modern biomedical research, the School supports, either directly or through center grants, the functioning of several core facilities and shared resources which provide a necessary complement to the ongoing efforts in individual laboratories. These facilities are provided to meet the varied needs of investigators in clinical and basic research laboratories and in patient care environments. These facilities are located in and supported by the School, the New York University Cancer Institute (NYUCI), the Institute of Environmental Medicine (IEM), the Center for AIDS Research (CFAR), the General Clinical Research Center (GCRC) and several biomedical informatics services. There are over 30 different facilities and shared resources available, including a specialized cell flow cytometry apparatus, monoclonal antibody facilities, specialized immunological assays, mass spectrometry, DNA and protein sequencing, molecular diagnostics for detection of specific cancer and cell growth markers, a transgenic mouse production facility, tissue procurement and tumor banks, biostatistical analysis, clinical research resources, epidemiology, toxicology and animal pathology resources.

Several areas are highlighted below:

- NYUCI basic and clinical scientist members collaborate in programmatic interests and utilize 13 shared resource units.
- The Skirball Institute has seven service centers: DNA Sequencing Facility, Protein Analysis Facility, Transgenic Mice Facility, Information Technology Service, Digital Media Center, Flow Cytometry Facility, and MR Mice Imaging Facility.
- The GCRC occupies 15,000 square feet of inpatient and outpatient space in Bellevue Hospital Center, has satellites in Tisch and HJD, and has laboratory, biostatistics and bioinformatics cores.
- The Division of Biostatistics, within the Department of Environmental Medicine, is an important core service at the School. Directed by Dr. Judith Goldberg, the Division provides collaboration and consultation to physicians and scientists in the design, conduct, analysis, interpretation, and reporting for clinical, basic science, and translational research.
- The Research Computing Resource (RCR) is a bioinformatics core facility maintained by the School.
- In 2003, the NYU Hospital for Joint Diseases opened the Seligman Center for Advanced Therapeutics, which occupies 4000 square feet with a core staff of nurses, coordinators, research assistants and administrative support for clinical trials. Currently, more than 20 joint NYU School and HJD clinical research protocols on arthritis and autoimmunity are managed at the Center.

The School has developed a number of mechanisms and programs to assist faculty in obtaining extramural support. The Sponsored Programs Administration (SPA) serves as a valuable resource and is dedicated to supporting and enhancing the education, service, and research programs of the School. SPA also assures compliance with university, medical school, sponsor and government policies and procedures. Examples of the types of support provided include: customized funding searches, assistance with proposals, provision of electronic resources, and grant-writing workshops. In order to streamline administrative processes, a new Senior Associate Dean for the Office of Sponsored Programs Administration has recently been recruited. The new Senior Associate Dean will be responsible for all administrative and support activities related to sponsored research, clinical trials, and the administration of regulatory functions, including the Institutional Review Board (IRB), IACUC, and Institutional Biosafety Committee.
In addition to the services offered by SPA, the GCRC conducts a 20-hour course, primarily for fellows during their research training and for junior faculty, on how to perform clinical translational research; the curriculum includes biostatistics, study design, and writing a grant proposal, among other topics.

The Office of Clinical Trials (OCT) is the business and financial division that oversees and develops clinical research activities at the School. The OCT manages approximately 500 clinical trials and offers education and training on good clinical practices and billing and research compliance. The OCT also prepares the regulatory submissions necessary before investigative sites begin participation in each study.

As of September 1, 2005, there were 249 pre-doctoral and 378 post-doctoral students, supported by various funding mechanisms. The School of Medicine currently has a number of NIH training grants which support both the pre-doctoral and post-doctoral training positions. As mentioned elsewhere, the Sackler Institute, which is comprised of a PhD program, the MD/PhD program, and the Post-Doctoral program, works closely with investigators in matching trainees to appropriate laboratories.

In 2005, the School instituted a Master of Science in Clinical Investigation training program with two tracks: Translational Medicine and Public Health Research. These educational programs are offered to clinically-trained individuals with an interested in clinical investigation who are making the transition to junior faculty.

As mentioned earlier, the Masters Program in Global Public Health was recently instituted as a collaboration of five of NYU’s professional schools. Students who are enrolled in this program who are interested in clinical research are permitted to use a portion of their time in this program for research projects in an aspect of clinical science within the School of Medicine. In addition, courses created for this Program will be available for clinical researchers.

There are additional intramural programs that provide financial support for junior investigators. An example of this type of program is the Whitehead Fellowship, which is targeted for junior faculty who are researchers in the biomedical and biological sciences. These grants are intended to enhance the faculty member’s ability to compete successfully for external funds.

To assist faculty who have experienced, or are about to experience, a lapse in extramural grant support, the School has developed a Bridging Fund for interim support. The purpose of this fund is to serve as a bridge to successful resubmission. The Bridging Fund supports research activities which will directly contribute to a more competitive grant submission, such as acquiring data to meet recommendations of extramural reviewers, completing work needed for the "preliminary results" section, and demonstrating successful use of methods, technology, or instrumentation.

Overall, the Committee believes that the resources in support of research are adequate but improvements are desirable, particularly in the area of core resources available across departments. The timing of this institutional self-study coincided with the School’s planning efforts for the Clinical Translational Science Institute (CTSI) grant submission. The CTSI planning efforts, led by Bruce Cronstein, MD, involve over 100 faculty organized into seven advisory groups. As part of the planning process, a needs assessment was undertaken via a web-based survey, assessment by external colleagues, advisory meetings with key internal stakeholders, and engagement with consultants. This needs assessment has identified that, while the research enterprise is strong in many areas, our current research cores and administrative processes are “silo-ed,” and the Committee believes that a more coordinated approach would further strengthen the School’s research enterprise.

**Recommendation**

- Remove unnecessary administrative obstacles to clinical-translational research by coordinating the submission and review processes to the School and Hospital’s regulatory offices (i.e., IRB, OCT, GCRC).
• Continue development, under the Senior Associate Dean for Sponsored Programs Administration, of administrative services necessary to support and promote faculty research efforts, including grant writing and mentorship.

• Organize and coordinate core research facilities, promoting the interaction between the new CTSI, the Cancer Institute, and other research centers within the School.

• Increase interactions with other schools at New York University with regards to opportunities for shared core services and access to innovative technologies.

Research Activities Impact

The School of Medicine has been an innovator in medical education. We were one of the first Medical Schools to award a PhD degree, formally incorporate research into our curriculum though an NIH-funded Honors program, and receive an NIH MD/PhD (MSTP) Program Award. Over the past 10 years the vast majority of our incoming students had been actively involved in undergraduate research and over 80% have become actively involved in research (both basic science and clinical) during their tenure at the School. Thus, the percentages of our students with continued engagement in biomedical research are among the highest in the country.

The intensity of the research experiences for our students range from a few weeks to a number of years, and that investigation can be conducted both on site at NYU or at numerous other hospitals or scientific institutions in the US or around the world. Specific programs include:

1. Independent Study Projects during the summers or as third and fourth year electives.

2. The Honors Program. The School’s Honors Program offers medical students the opportunity to study in detail some aspect of basic biomedical science. The purpose of the program is to expose future physicians to the scientific foundations of medicine and its practice through hypothesis-driven laboratory research. The program draws mentors primarily from the faculty of the Sackler Institute of Biomedical Sciences. Honors students learn how research problems are defined, approached and investigated, utilizing state-of-the-art methods and techniques. Students are incorporated into the intellectual life of the research group through laboratory meetings, journal clubs, and a lecture series in which outstanding scientists from around the world present their latest work.

The extracurricular program involves a minimum of 18 weeks of research in a laboratory, usually divided into two equal blocks conducted over summers and the last three years of the medical curriculum; participants may be eligible to receive a stipend. Those students completing at least an 18 week period of research in their chosen laboratory are eligible to write and defend a thesis. Successful defense of the Honors Thesis is determined by an ad hoc committee consisting of the student's research mentor and two other faculty members; upon graduation the student earns his or her medical degree with Honors in a basic science department. Many students become co-authors on published scientific articles.

Students interested in joining the Honors Program must be in excellent academic standing. Applicants must schedule a meeting with the program administrator to discuss their rationale for wanting to participate in the program and the requirements to graduate with Honors. Subsequent meetings with the program director focus on the selection of an approved mentor and project. The student and mentor must write a brief (500 word) research proposal and forward it to the Honors Program Office for final approval by the director.

3. NYU’s MD/PhD Program. The School of Medicine was one of the three original NIH-funded Medical Scientist Training Program (MSTP) recipients. The goal of the MSTP is to prepare highly qualified individuals for careers as physician-scientists. These individuals will approach basic biological science and human disease from unique perspectives. Their medical backgrounds inform and give direction to their science, while their science education informs their approach to observing
and understanding human disease. Graduates of this program are prepared to make significant contributions to the advancement of biomedical science through basic and translational research, and to assume positions of leadership at academic medical centers, biomedical research institutions, pharmaceutical and biotechnology industries, and government health and research agencies.

MSTP trainees are simultaneously enrolled in the School of Medicine and the Graduate School of Arts and Sciences of New York University in a coordinated and integrated curriculum that emphasizes the close association of fundamental science and medicine. Throughout their tenure in the program, an average of eight years, students receive full fellowships, which include tuition remission, stipends currently set at $26,000 per year and health insurance. The program receives financial support from an MSTP grant awarded by the National Institute of General Medical Sciences (NIH), as well as from the School and private foundations.

The usual course of study includes the first two years of medical school integrated with three summer research rotations followed by approximately 4 years of thesis studies, culminating with a PhD degree. After successfully completing the required clinical clerkships, MSTP students receive the MD degree and enter top tier residency programs around the country. The typical MD/PhD graduate devotes approximately 80% of his or her time to biomedical research and the remainder to clinical or administrative responsibilities, usually in clinical departments of research-oriented medical centers.

4. Fifth Year Programs: Over the past five years the number of our medical students who have chosen to enhance and extend the period of medical training with a fifth year of research or degree-bearing program study has significantly increased. We expect that approximately 15-20% of our students to take advantage of this option in this academic year and a similar percentage in future years. Formal mechanisms in place include:

- HHMI Medical Fellows Program, which supports a year of full time biomedical research training at an academic or non-profit research institution in the U.S.
- HHMI-NIH Research Scholars Program (Cloisters Program), which supports a year of full time biomedical research training at the NIH main campus in Bethesda, Maryland.
- Doris Duke Clinical Research Fellowship Program, which provides one-year fellowships for medical students in mentored clinical research training at one of seven selected medical schools across the country.
- The Sarnoff Cardiovascular Fellowship Program, which gives medical students the opportunity to spend a year conducting intensive work in a cardiovascular biomedical research laboratory at an institution other than their own.
- NYU’s MPH Program in Global Health. The NYU Master's Program in Global Public Health is a innovative, collaborative effort of five of NYU's premier professional schools. Multidisciplinary in every respect, the program seeks students who have completed an advanced degree (Master's or above) in medicine, dentistry, public service, social work, education, management and other fields. Medical students will be able to matriculate into this program at the end of their third year in medical school and, through an accelerated mechanism, be able to complete degree requirements before graduating five years after entering medical school.

**Composite Assessment – Basic Science Departments**

The basic science departments are dedicated to the achievement of excellence in research and teaching of the biomedical sciences. As evidenced in the Mission Statement of the School, there is a longstanding commitment to producing physician-scientists and scholars at the School. The School can boast a long and rich tradition of discovery in the basic sciences that has fostered the careers of many of our graduates as researchers. In the 2005 AAMC Graduation Questionnaire, 48.3% of our students intended to become full-time university faculty, compared to a national average of 32.8%. The essence of our educational philosophy is that a solid grounding in basic medical science is an essential component of the preparation of all modern
physicians, and is even more essential for those physicians who want to pursue an academic career. By the time they graduate, 29.8% of our students believe that they will be significantly involved in research during their medical career, 36% have participated in a research project with a faculty member, and 24.9% have submitted a research paper for publication. Therefore, the School places great value in ensuring the strength of the basic science departments, as it regards them as critical for its ability to fulfill its mission.

There are currently ten basic science departments at our School: Biochemistry, Cell Biology, Environmental Medicine, Forensic Medicine, Medical Library, Medical Parasitology, Microbiology, Pathology, Pharmacology, and Physiology and Neuroscience.

**Leadership and Stability**

Four of the ten basic science departments have undergone a change in leadership since the last LCME site visit: Pharmacology (2001), Medical Parasitology (2004), Pathology (2004), and Biochemistry (2006). Including the four mentioned above, the average tenure for a basic science chair is 12.8 years.

As a result of recommendations of the 2000 LCME self-study, a rigorous departmental review process was implemented. Since this process was implemented, eight of the basic science departments have undergone reviews. These reports have informed decisions regarding departmental leadership and have resulted in the decision not to combine two of our basic science departments.

**Faculty Profile**

There are 265 faculty members in the basic sciences, 257 of whom are full-time. There is a satisfactory distribution among the full-time ranks (28.8% Professors, 26.5% Associate Professors, 43.2% Assistant Professors). Since the last LCME visit, the number of faculty members in the basic science departments has remained relatively constant. The Committee believes that the experience and expertise of our basic science faculty are sufficient to achieve the mission of the School.

**Finances**

Funding for the basic science departments comes from a variety of sources, including federal and non-federal research grants, School operating funds, and endowment income. In FY05, basic science departmental expenditures totaled approximately $80 million from all sources.

**Space and facilities**

With the exception of Environmental Medicine, which is located in Sterling Forest, all basic science departments are housed at the main campus in Manhattan. With the opening of Skirball in 1993 and Smilow in 2006, the amount of research space has increased significantly. There is 183,876 square feet in research space in the basic science departments. The Committee supports the continued refurbishment of space in the Medical Science Building.

**Quality and Quantity of Teaching, Research, and Service**

**Teaching**

The basic science departments play a major role in the first two years of the medical school curriculum. As described in the Educational Program section of this report, the transition from department-level courses to interdisciplinary modules was begun prior to the last LCME self-study and has been completed since 2000. In addition, as discussed elsewhere, the creation of the Advanced Science Selectives, offered at the end of the third year, has facilitated the inclusion of the basic science faculty in the clinical years of the curriculum.

Data from our 2004 Faculty Salary Survey, self-reported by the compensated faculty, indicate that 88% of the basic science faculty are involved in teaching at some level. While the majority of the teaching effort in the basic science departments is focused on medical students in their first two years, there also is substantial effort in predoctoral and postdoctoral teaching and mentoring.
The Committee is satisfied that the faculty contribute a significant amount of teaching time. The recently implemented Report of the Committee on Expectations Regarding Teaching established a teaching requirement and recognizes, in a formal fashion, the efforts of our faculty who teach.

As discussed in the Educational Program section of this report, the preclinical modules are evaluated annually by the medical students. The Committee believes that the positive results on these evaluations are an indicator of the high quality of the faculty’s teaching efforts.

Research
Overall, data from the 2004 Faculty Salary Survey indicate that 80% of the basic science faculty are involved in research, with the majority of the researchers federally funded. Excluding the Medical Library, the percent of faculty in each department who self-reported involvement in research range from 78% (Pathology, n=71) to 100% (Medical Parasitology, n=11).

In terms of quality, the School’s overall dollar density is $392 dollars square feet, which is competitive with AAMC benchmarks. On average in the years 2000 through 2005, our basic science faculty published 747 articles yearly in peer-reviewed publications. As discussed previously, the Committee believes that this is an indication of the strength of the research efforts of our basic science faculty.

Table IS-1. Basic Science Department Publications (2000-2005)

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As mentioned elsewhere, the research opportunities for medical and graduate students are vast and have been facilitated by the strengthening of the basic science departments.

Service
Overall, as indicated in the Faculty Salary Survey results, 65% of the basic science faculty members report participation in administrative service. Most of the service work performed by basic science faculty involves participation on committees, with additional involvement in departmental and school administrative work. The percent of faculty in each department who are involved in administrative service ranges from 55%
(Microbiology, n=20) to 100% (Forensic Medicine, n=1). Excluding Forensic Medicine, the upper boundary of the range decreases to 82% (Medical Parasitology, n=11).

**Composite Assessment – Clinical Departments**

**Involvement and Success in Graduate Education**
The doctoral program in Sackler is organized into multi-disciplinary programs. However, all mentors and principal investigators are faculty members in basic science departments. These doctoral programs, supported in part by NIH training grants, foster interdepartmental cooperation and collaboration in the research arena.

**Leadership and Stability of Clinical Science Departments**
Eleven of the 18 clinical departments have undergone a change in leadership since the last LCME accreditation process: Medicine (2000), Anesthesiology (2001), Radiology (2001), Emergency Medicine (2001), Obstetrics & Gynecology (2003), Otolaryngology (2003), Ophthalmology (2004), Dermatology (2006), Pediatrics (2006), Psychiatry (2006), and Surgery (2006). In addition, the chair of the new Department of Cardiothoracic Surgery is scheduled to be replaced in 2007; this was part of the original design for the department. Including the eleven above, the average length of service as chair of a clinical department is 5.2 years. Since the inception of the departmental review process, eight of our clinical departments have undergone reviews and an additional five departments have begun the process. As mentioned elsewhere, these rigorous department reviews have informed decisions regarding departmental leadership.

**Faculty**
There are 807 full-time and 3,333 part-time and voluntary faculty members in the clinical departments. The Committee believes there is a satisfactory distribution among the full-time ranks (24.4% Professors, 24.2% Associate Professors, 47.1% Assistant Professors, 4.3% Instructors/Other) and adequate representation in the specialties and subspecialties.

**Finances**
Clinical department funding derives from a variety of sources, including practice plan revenue, hospital affiliation agreements, federal and non-federal research grants, School operating funds and endowment income. Since the last LCME self-study, there has been a marked increase in funding from the patient care activities in the clinical departments, due to the expansion of the faculty practice plans. In FY05, clinical department expenditures totaled approximately $440 million from all sources.

**Space and Facilities**
There is 184,715 square feet of research space in the clinical departments, which the Committee believes is adequate.

**Quality and Quantity of Teaching, Research, and Service**

**Teaching**
Overall, the 2004 Faculty Salary Survey, self-reported by compensated faculty members, indicates that 84% of the clinical faculty are involved in teaching at some level. While the majority of the teaching effort is focused on residents and fellows, there is also substantial effort in teaching medical students. In addition, our voluntary clinical faculty continue to be important contributors to our teaching mission.

As discussed in the Educational Program section of this report, the preclinical modules and clerkships are evaluated after each block by the medical students. In addition, the residency and fellowship programs are evaluated by the house staff. The Committee believes that the quality of teaching is evidenced by the positive evaluations in both of these areas.
Research

Overall, data from the 2004 Faculty Salary Survey indicate that 51% of the clinical faculty self-report involvement in research, with the majority of the researchers federally funded. In addition, a substantial number of researchers receive funding from non-federal sources (i.e., industry and foundations). The percent of faculty in each department who are involved in research ranges from 36% (Orthopaedic Surgery, n=25) to 88% (Urology, n=16).

On average in the years 2000 through 2005, our clinical faculty published 1,752 articles yearly in peer-reviewed publications. As discussed earlier in this report, the Committee believes that this serves as an indicator that the research efforts of our clinical faculty are strong and of high-quality.

Table IS-2. Clinical Department Publications (2000-2005)

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As discussed previously in this report, the School has renewed its commitment to the clinical research enterprise via the planning efforts for the Clinical Translational Science Institute. The Committee believes that this will facilitate further strengthening of the clinical research efforts and productivity of our faculty.
**Patient Care**

Overall, data from the 2004 Faculty Salary Survey indicate that 60% of the compensated clinical faculty report involvement in patient care. The growth in the clinical enterprise under Dean Glickman has been profound, and the quality of our physicians is exceptional. In 2006, 132 NYU faculty physicians were recognized among *New York Magazine’s* “Best Doctors” in the metropolitan area. NYU had the largest number of listed physicians, and that number was 9% higher than that of any other School of Medicine in New York.

**Involvement and Success in Graduate Education**

The success of the graduate medical education enterprise is evidenced by the institution’s favorable, five-year (longest possible cycle) accreditation in which we received numerous commendations. In addition, all of the individual programs have been successful in maintaining their accreditation status with their program Residency Review Committees (RRC).

**Challenges**

While the Committee believes that the School has made significant advances in both the educational and research missions over the past seven years, as detailed above, there are a number of challenges that will need to be met over the next period:

1. **Disproportionate Distribution of Teaching Efforts:** Historically, several departments have contributed the majority of our medical student teaching. As discussed elsewhere, we have undertaken efforts to remedy this disproportionate distribution of teaching effort through the movement to interdepartmental modules in the preclinical curriculum. With the passage of the Report of the Committee on Expectations Regarding Teaching, full-time faculty members are required to teach 50 hours/year, if asked by their Chair. We believe that this will also promote cross-departmental teaching efforts and promote the greater involvement of a larger number of faculty in teaching.

2. **Extramural Funding:** With projected declines and resultant increasing competition for extramural funding, the School will need to respond by increasing core infrastructure support, increasing bridge funding mechanisms and facilitating grant development. The Committee supports the School’s efforts in these areas as described above.

3. **Increased Economic Pressures on Clinical Faculty:** As clinical reimbursement levels decline and overhead expenses rise, increased demands are placed on clinical faculty productivity, which has the potential to negatively impact the School’s other missions. In order to mitigate this, the School has taken the following measures:
   a. Defined teaching expectations, as discussed above, which will distribute the teaching responsibilities among a greater number of faculty.
   b. Established hospitalist services at both Bellevue and Tisch, which have reduced time pressure on clinical faculty and allowed them to focus on teaching rather than patient management.
   c. Recruitment of full-time clinical faculty. Through strategic recruitment as part of the Growth Agenda and the growth of the Faculty Group Practices, the resultant increase in numbers of full-time faculty has introduced additional faculty to the teaching program. These faculty have specific expectations for teaching that exceed those demanded of the voluntary faculty (50 vs. 20 contact hours per year) and are, in general, more engaged in the academic mission of the School.

4. **Dean’s Committee on Institutional Resources:** In preparation for the upcoming leadership transition and in order to inform the formal strategic plan recommended elsewhere in this report, the Dean has recently undertaken an effort to review the academic activities of the School’s faculty, with regards to the educational, clinical and research missions. To this end, a subcommittee of senior academic
leadership will be convened in the fall of 2006. The goal is to assess the research and educational contributions of our faculty, so as to recognize those whose efforts are outstanding and to work to improve those who are not meeting expectations.

II. The Educational Program for the MD Degree

Report of the Objectives Committee

A. Educational Objectives

The NYU School of Medicine consistently has been guided in its mission by the statement made in *The Mission of a Medical School*, written by the Faculty of the School early in the last century. According to this prospectus:

“The mission of the medical school is threefold: the education and training of physicians and scientists, the search for new knowledge, and the care of the sick. The three are inseparable. Medicine can be handed on to succeeding generations only by long training in the scientific methods of investigation and by the actual care of patients. Progress in medicine, which is medical research, must look constantly to the School for its investigators and to the patient for its problems, whereas the whole future of medical care rests upon a continuing supply of physicians and upon the promise of new discovery. The purpose of medical school, then, can only be achieved by endeavor in all three directions – medical education, research, and patient care – and they must be carried on simultaneously for they are wholly dependent upon each other, not only for inspiration, but for their very means of success.”

This mission statement has guided pursuit of the environment in which our students are trained, one defined by commitment to the highest level of human achievement in a culture strongly supportive not only of excellence, but also of continual questioning, self-directed development and embrace of diversity of culture and opinion. Within this environment, the School seeks to promote a rich, generative atmosphere in which the faculty understands that the students, as their successors and stewards in society, should not merely replace, but surpass, them in scholarship, research and patient care. At the time of its last LCME self-study, the School elaborated upon its mission statement and defined a series of educational goals reflective of what the institution hopes to accomplish through its educational programs. These goals are responsive to the dominant events and trends that have reshaped and continue to affect medicine in our time. The goals of the NYUSoM, therefore, are to:

10. Develop physician-scholars who combine science and humanism in their approach to the fields of medicine by fostering these characteristics:
   - An understanding of the scientific principles upon which clinical medicine is based and the ethical principles and human values with which it must be practiced;
   - The use of the scientific method for thinking, judgment and decision making in professional endeavors;
   - A command of the core of essential concepts, facts and skills needed for the practice of modern medicine and the understanding that practice must include prevention and be based on evidence whenever possible;
   - A sense of the paramount, fundamental responsibility of caring for patients whose interests must always come before one’s own;
   - The recognition of the limits of individual ability and knowledge that will, of necessity, promote interaction with appropriate colleagues;
   - A commitment to a lifetime of continuing education in the disciplines of medicine;
   - The skills necessary for continuous self-education including awareness of the breadth of educational resources and the technologies for their distribution, their appropriate use, their critical evaluation, and the ultimate integration of new information into practice;
• The ability to communicate effectively with, and value the contributions of patients, their families, colleagues and the greater communities we serve;
• The highest standards of honesty and personal integrity and knowledge of the theories and principles that govern ethical decision making;
• Knowledge of the variety of approaches to the organization, financing and delivery of health care and an understanding of the complexities that financial considerations may bring to the fiduciary responsibility of the physician for the patient;
• An understanding of the possible conflicts of interest inherent in various financial and organizational arrangements for the practice of medicine in this era.

11. Provide programs in graduate medical education in a setting of the highest quality of patient care in the specialties of medicine.

12. Expose our students to our extensive programs for graduate and postdoctoral research training in the basic biomedical and clinical sciences so that, as developing physician-scholars, our students understand the nature of the research that is the basis of both current and future medical practice.

13. Create, acquire and disseminate new knowledge as the result of fundamental research in the basic biological sciences, in the clinical sciences, in public health, in the delivery of health care, and in the administration of health care. In this regard, we consider it essential to our educational mission at every level that our faculty be engaged in original research of the highest merit, and that our students have every opportunity to participate in research and become physician-scientists whose primary career focus will be original investigation.

14. Provide the highest level of primary through tertiary care to the extraordinarily diverse populations who receive medical treatment in our community and beyond. We consider the rich diversity of cultures, ethnicity, socioeconomic levels and national origins to which our students are exposed to be a major strength of our program that fosters—through an understanding of these circumstances on human behavior and disease—responsibility, compassion and tolerance.

15. Offer programs in the Post-Graduate School of Medicine for the continuing education of physicians in the basic and clinical disciplines of medicine as well as in health economics and health policy.

16. Educate the public on matters of health.

17. Enrich the education of younger students in grade school through college, especially underrepresented minorities, in order to attract them to careers in biomedical fields.

18. Foster the development of research collaboration between our faculty and the private sector both to expand our faculty’s access to emerging therapeutic technologies and to ensure the transfer of new discoveries and inventions made by our faculty and students to full application in patient care.

The School recognizes that in order to remain true to its mission, it must clearly and specifically connect both that broad mission and its institutional goals to a medical educational program whose trainees meet and, ideally, exceed the expectations of both the medical profession and the public it serves. Therefore, to achieve the aspirations embodied in its mission statement, the School has moved beyond the robust set of specific strategic goals articulated in the Blueprint for the Millennium report of its last self-study to define a comprehensive set of specific objectives that constitutes an “implementation plan” by which those strategic goals can be met. The objectives of the School are specifically linked to the ACGME core competencies, to the individual module and clerkship objectives defined by the Office of Medical Education (OME) in conjunction with each of the module and clerkship directors, and to specific methods of assessment by which attainment of those objectives can be measured. After an intensive, six-month working period, led by Drs. Thomas Blanck and David Roth, a committee of faculty, students and deans drafted the Objectives of the Educational Program of the NYU School of Medicine. These objectives were presented to, modified by, re-
presented to and approved by the Dean, Curriculum Committee, module, unit and clerkship directors, Student Council, Council of Chairs, Faculty Council, and Graduate Medical Education Committee, and the House Staff Council.

The Objectives of the Educational Program of the NYU School of Medicine are listed in two formats. Below the objectives are grouped according to their relevance to the six ACGME core competencies. In Appendix ED-1A, the objectives are “cross-walked” to those competencies, the segments of the curriculum in which they are addressed, and the methods by which attainment of those objectives by our students are assessed.

NYU School of Medicine Educational Objectives

1. Medical Knowledge

Before graduation, students must have demonstrated, to the satisfaction of the faculty, knowledge and understanding of the:

- Basic principles of the scientific method and their application to the gathering of medical knowledge and clinical decision-making;
- Principles of epidemiology and biostatistics and the strengths and weaknesses of the study designs used to develop new medical knowledge;
- Basic scientific principles underlying the biochemical, genetic, molecular, and cellular mechanisms that determine the normal development, structure, and function of the body as a whole and its major organ systems;
- Normal psychosocial development of individuals from birth through old age;
- Pathology, pathophysiology, and ecological context of major diseases;
- Biological factors that cause or contribute to genetic, developmental, toxic-metabolic, infectious, autoimmune, neoplastic, degenerative, traumatic, and behavioral disease;
- Nonbiological elements, including access to health care and economic, socio-cultural, and psychological factors, that may contribute to or prolong illness;
- Clinical, laboratory, radiographic, and pathologic manifestations of major diseases;
- Pharmacologic, surgical, and psychologic treatments of common physical and mental disorders and symptoms such as pain, the relative efficacy of therapeutic interventions, and the common adverse effects of therapies;
- Palliative care of individuals with life-terminating illness and management of acute and chronic pain;
- Role of preventive medicine, including nutrition, exercise, and healthy lifestyles, in promoting health and decreasing the risk of disease;
- Epidemiology of common disorders in populations and the approaches to screening for and detecting illness, as well as reducing the incidence and prevalence of disease in populations on a global and local scale;
- Human and systems factors which may adversely affect patient safety.

2. Patient Care

Before graduation, the student must have demonstrated, to the satisfaction of the faculty, the ability to:

- Reason inductively an deductively in solving clinical problems;
- Demonstrate training level-specific knowledge and skills in the core clinical disciplines: internal medicine, obstetrics and gynecology, neurology, pediatrics, psychiatry, surgery, critical care, and ambulatory care;
- Obtain an accurate medical history that covers all essential aspects, including issues related to age, gender, and socio-economic status;
- Perform both a complete and an organ system-specific physical examination, including a mental status examination, where appropriate, in adults, infants, and children;
- Retrieve (from electronic databases or other resources), manage, and utilize biomedical information for solving clinical problems and making clinical decisions;
• Perform routine technical and certain key routine emergency procedures, as detailed in the core clinical curriculum;
• Interpret the results of common diagnostic procedures;
• Identify key clinical data, seek critical pieces of missing clinical information and determine when it is appropriate to act on incomplete information;
• Develop the flexibility to challenge and reformulate an initial assessment as new information is gathered;
• Formulate a treatment plan that demonstrates the ability to express the relative certainties of a differential diagnosis and the relative risks and benefits of treatment options;
• Construct appropriate diagnostic and therapeutic management plans for patients with common conditions;
• Recognize patients with common, immediately life-threatening conditions, and institute appropriate initial therapy;
• Recognize and outline an initial course of management for patients with conditions requiring chronic, ambulatory care.

3. Practice-Based Learning and Improvement

Before graduation, students must have demonstrated, to the satisfaction of the faculty, the ability to:
• Maintain a scholarly approach to medical problems and continually improve one’s knowledge and skills through lifelong, self-directed study;
• Recognize uncertainty in clinical decision-making, including the ability to quantify and communicate the degree of certainty associated with specific items of scientific and clinical information;
• Use multiple information sources for problem solving;
• Make decisions based on evidence, rather than opinion, while recognizing the importance of clinical experience and the art of practice;
• Improve performance based on self-reflection, critical self-appraisal, and openness to feedback from others;
• Recognize and accept limitations in one’s knowledge and clinical skills and commit to continuously improve one’s knowledge and abilities;
• Educate colleagues, students, other health professionals, patients and the general public;
• Demonstrate an understanding of the critical role of research and scholarship in understanding human disease and alleviating human suffering.
• Apply the principles of continuous quality improvement to patient care.

4. Interpersonal and Communication Skills

Before graduation, students must have demonstrated, to the satisfaction of the faculty, the ability to:
• Work with other members of the health care team in a spirit of cooperation and respect;
• Communicate effectively, both orally and in writing, with respect to data gathering, relationship building, and patient education;
• Communicate effectively and compassionately with patients and their families about the evaluation, diagnosis, therapy, and prognosis of disease, and counsel patients in a caring, empathetic, and culturally sensitive way;
• Present scientific and clinical information clearly and cogently, both orally and in writing.

5. Professionalism

Before graduation, students must have demonstrated, to the satisfaction of the faculty:
• A commitment to provide compassionate treatment of patients, with respect for their dignity, privacy, and rights regardless of the patient’s disease, prognosis, age, gender, race, sexual orientation, ethnicity, religious, cultural, or health-related beliefs, socioeconomic status, citizenship status, or ability to pay for care;
• Knowledge of the ethical principles that govern the doctor-patient relationship;
• Understanding of the ethical principles that undergird medical decision making, particularly with regard to beginning and end of life issues, genetics, and molecular technologies;
• A respect in all interactions for the patient’s privacy, confidentiality, dignity, beliefs, rights, family, and cultural or religious values, even when such values or beliefs conflict with one’s own;
• Expression of a professional demeanor in one’s work and as a role model for society, including the consistent demonstration of honesty, integrity, and reliability in all interactions with patients, their families, colleagues, and co-workers;
• Awareness of the threats to medical professionalism posed by conflicts of interest inherent in various financial and organizational arrangements in the practice of medicine;
• Awareness of one’s vulnerability to stress and the influence stress has on one’s ability to care for patients;
• A commitment to place the patients’ interests over one’s own;
• The ability to recognize and effectively address unethical or unlawful behavior of other members of the health care team and to understand when and how such behavior must be reported;
• The ability to identify and address both self-impairment and impairment of the professional behavior of others.
• The capacity to recognize one's personal reactions to patients and manage those reactions in the patient's interest.

6. Systems-Based Practice

Before graduation, students must have demonstrated, to the satisfaction of the faculty, the ability to:
• Retrieve information by performing database searches and refining search strategies to improve relevance and completeness of retrieved items;
• Use and integrate the data from available information resources and tools, including 1) online databases and other medical internet resources; 2) textbooks and other reference sources; and 3) journal articles;
• Apply the principles of evidence-based medicine to patient care and demonstrate the ability to: 1) identify quality literature; 2) critically appraise written reports for internal reliability, validity and generalizability; and 3) apply data from a population to an individual’s patient care;
• Protect the confidentiality of private information obtained from patients, colleagues, and others and demonstrate understanding of and compliance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA);
• Incorporate knowledge of the various approaches to the organization, financing, and delivery of health care, including particular awareness of the needs of the underserved, into clinical decision-making;
• Understand how the system of care in which a physician operates can impact his or her patient care abilities and overall professional development.

Dissemination and Understanding of the Objectives of the School of Medicine

The objectives of the educational program of the NYUSoM have been and continue to be communicated to the faculty, students, house staff and administration in the medical education community through multiple mechanisms. In a letter to the faculty, students, house staff and administration written specifically for this purpose, the Dean of the School of Medicine is announcing the approved institution-wide objectives and directing members of the School of Medicine educational community to the links to these objectives from the School’s home page. It should be noted that the Dean’s letter strengthens and reinforces the information already disseminated to the faculty, students, house staff and administration through distributed minutes of the Faculty Council, Council of Chairs, Student Council and Student Caucus, Graduate Medical Education Committee and the Curriculum Committee. Hard copy of the objectives was given to incoming members of the Class of 2010 at orientation, and the objectives themselves have been included in the new 2006-2008 Student Handbook.

The objectives were first disseminated through the entities above during the late spring and summer of 2006. The quality of comments and suggestions made by faculty, students, house staff and administration during
that initial process suggests a high level of critical understanding of the objectives among those involved in the medical education community. The School, however, fully recognizes the critical importance of fostering a heightened and continuous level of awareness of these objectives throughout the medical community. To ensure this, the objectives will be explicitly discussed with all faculty, house staff, students and administrators at the beginning of each module and clerkship, and as described below, the “congruence” of our educational program with these objectives will be specifically evaluated through the module and clerkship evaluation process centered in the OME.

Utilization of the Objectives as Educational Program Planning and Evaluation Guides

The Objectives of the School of Medicine are the backbone upon which the Office of Medical Education, in conjunction with the Advanced Educational Systems (AES) group, is developing a robust educational program planning and evaluation system. Having specifically cross-walked the School’s objectives with the “venues” within the curriculum in which they are addressed and identified the means by which attainment of those objectives are assessed, the School is formulating a comprehensive plan by which to: 1) obtain direct feedback from students, through their web-based module and clerkship evaluations, on how well individual segments of the curriculum meet relevant educational program objectives; 2) identify areas in the curriculum in which current teaching and learning methods do not meet program objectives, and use that information to direct and prioritize the research and development projects of the AES and the Medical Education and Technology Program; and 3) provide a structural framework for creation of innovative, vertically integrated, “spiral” curricular modules that span undergraduate, graduate and post-graduate educational program needs.

Outcomes

The School’s educational program objectives are now explicitly linked to existing measurements of attainment of knowledge, skills and attitudes by students in the various components of the curriculum (see Appendix ED-1A). Therefore, the high success rate of our students on our internal assessments linked to those objectives, as well as their success rate on external assessments of those competencies, strongly suggest that the educational program is meeting the School’s objectives. The data from each outcome measure that support this conclusion are discussed specifically and in detail below.

Report of the Educational Program Committee

B. Structure

Providing a General Professional Education

The medical degree program at the School of Medicine provides an education that is noteworthy both for its breadth and for its depth and, accordingly, prepares students for all career options in medicine. Over the course of 145 weeks, trainees acquire competence in biomedicine in the contexts of investigation, clinical care, and outcomes assessment through a curricular program designed in congruence with the articulated goals and objectives of the School of Medicine. The mechanisms for providing that general professional education include: 1) a formal required curriculum; 2) an elective curriculum; 3) a wide range of optional academic and enrichment experiences; and 4) a program of academic and career mentoring.

Required Curriculum

The curriculum of the first two years of the School of Medicine’s program is predominantly, though not exclusively, classroom-based. Through a series of integrated, carefully sequenced learning modules, students not only are first exposed to all of the relevant basic and clinical sciences, but also expand upon and continually augment their core knowledge base through small group, case-based conferences, group exercises, and student-patient interactions.

Preclinical Education

In Year One, students learn human anatomy and embryology in the integrated Morphological and Developmental Basis of Medicine module. The classical disciplines of biochemistry, genetics and molecular biology comprise the Molecular Basis of Medicine module, which proceeds and lays the groundwork for the
Cellular Basis of Medicine. This coursework underpins the students’ general education and prepares them to begin the study of tissue and organ system structure and function in the Foundation for Medicine sequence. Throughout the first year, in the continuous, concurrent Skills and Science of Doctoring I module, students have their first patient encounters, learn to listen to the patient’s narrative, and begin the study of the contracts among physician, patients and society through units on health prevention, medical ethics, cultural diversity, professionalism and an introduction to systems-based practice.

These courses are followed, in Year Two, by three learning modules. In the first, Host Defense, students learn the mechanisms by which the human body defends itself from external and internal challenges and the principles by which pharmacological intervention can be employed to re-establish homeostasis. Through the extensive Mechanisms of Disease module, students integrate pathology, pathophysiology and pharmacology in an organ-system coordinated manner to gain both knowledge and mechanism-based understanding of pathogenesis and therapy of disease. Coordinated, cross-departmental team teaching – both for core lectures and in small group conferences – defines this module, which also includes the appropriate, cost-effective use of laboratory and radiological diagnostic testing. Efforts are currently underway to redesign the Morphological and Developmental Basis of Medicine module in the first year so that it, too, utilizes illustrative as well as interactive imaging to teach anatomy. The second year, like the first, is spanned by the continuous, concurrent Skills and Science of Doctoring II module. Within this module, students learn to: 1) apply their growing capacity to understand complex medical issues to integrative topics such as pain management, care of the disabled and chronically ill patient, team-based medical care and domestic violence; 2) apply principles of biostatistics and epidemiology to gain understanding of population- and evidence-based medical diagnosis and decision-making, and 3) develop their history-taking and physical diagnostic skills as they are learning the relevant pathophysiology. The modalities used in all three units of this module include direct, one-on-one, student-patient interactions, objective structured clinical encounters with direct faculty and/or standardized patient feedback, interactive, multimedia, computer modules, oral presentations and write-ups, and case-based conferences.

Clinical Education
Our general professional education continues into the years of clinical training. A two-week clerkship orientation at the end of the second preclinical year prepares our students for transition to the core clerkships. The learning objectives for this segment of the curriculum were defined over a six-month period by the directors of each of the core clerkships, working under the sponsorship of the Senior Associate Dean for Education and Student Affairs, Associate Dean for Education, and the Curriculum Coordinator. The objectives embrace a shared set of skills relevant to each of the core disciplines, including clinical skills (oral and written case presentations, progress note writing, systematic approach to and interpretation of arterial blood gas values, electrocardiograms and basic radiographic images, hospital team and information systems orientation, patient confidentiality, informed consent, infection control and transmission of bad news); technical skills (fundoscopy, otoscopy, venipuncture, Advanced Cardiac Life Support); professionalism (expectations, practice-based learning); cost-effective use of diagnostic testing; and an extension of their training in evidence-based decision making to its application in the clinical environment.

The required clerkships include medicine, surgery, pediatrics, neurology, obstetrics and gynecology, psychiatry, critical care, ambulatory care, and an acting internship in medicine. The first six are part of the third year curriculum, which also features either one of two months of elective time depending upon whether the student takes ambulatory care as a 3rd or 4th Year clerkship. Critical care and the acting internship in medicine are 4th Year core requirements. In each of these clerkships, students are exposed to a wide range of subspecialties within the discipline, both in terms of patient mix and formal didactics. For example, students on surgery spend the plurality of their time on general surgery, but also rotate through several specialty blocks, including vascular, pediatric, cardiac, transplant, trauma, plastic and oncologic surgery. In each of these experiences, students also are introduced to the role of other specialties in the care of their patients through, for example, formal and informal instruction in radiology, pathology and social services in the context of the individual patients cared for by the members of the service team.
**Elective Curriculum**
In addition to the required curriculum, students in the third and fourth years are required to participate in a minimum of eighteen weeks of electives. This allows students the opportunity to both broaden and deepen their educational programs still further, taking ownership of and customizing this segment of their learning program as they begin to “differentiate.” All of the clinical departments, and all of the subspecialty areas within these departments, provide both clinical and research electives. Some of the elective offerings, such as those in musculoskeletal disease, are available as cross-departmental rotations. Basic and clinical research electives also are available in areas such as Epidemiology and Health Outcomes. While these electives typically are taken in one-month blocks, students interested in research are encouraged to group several elective months together in order to promote a coherent and productive experience. The website of the Office of Registration and Student Records ([www.med.nyu.edu/registrar](http://www.med.nyu.edu/registrar)) has a complete listing of all structured electives available at the School. Students may elect to take their electives at School of Medicine or at any LCME-accredited medical school. In addition, students can propose individual clinical or research preceptorships in the United States and abroad that, if accompanied by specific goals and objectives, signed by the preceptor and approved by the Senior Associate Dean for Education and Student Affairs, may receive elective credit toward the medical degree.

**Advanced Science Selectives**
In addition to the above electives, students transitioning from the third to the fourth year are required to participate in a two-week Advanced Science Selective. Students, who have now completed a full-year of clinical training and are working toward defining the next phase of their educational program, integrate their preclinical and clinical thought patterns by engaging in an in-depth, literature-based, small group seminar on a topic drawn from the frontiers of translational medicine and/or biomedical technology. While the primary goal of the selective is to encourage scholarship, consolidation and integration of preclinical and clinical knowledge, the ability of students to select from among a variety of seminar choices permits them to pursue individualized interests and gain deeper appreciation for the interface between new biomedical discovery and clinical medicine. Course offerings vary with the state of the art; recent topics have included Stem Cell Therapy, Models of Multigenic Disease, Vaccine Development, Neurobiology of Pain, Ion Channels and Disease, DNA Technology in Medicine, Anatomy for Surgeons, the Microbiology of Bioterrorism, Drug Development, and two offerings, Rational Utilization of Clinical Laboratories and Survival Skills for Residency, that stress amplification of evidence-based decision making skills.

**Extracurricular and Other Enrichment Opportunities**
Students with special interests are served by clubs and special interest groups which permit the students to have a greater interaction with the faculty in areas of their own choosing. Moreover, students with a particular interest not served by the current clubs and interest groups are encouraged, under the guidance of the Associate Dean for Student Affairs, to identify mentors and propose new interest groups that may serve their needs. The result is a large, robust, and programmatically active collection of clinical clubs/interest groups, including but not limited to the Cardiology Club, Nutrition Club, Caring for Kids, Dermatology Interest Group, Emergency Medicine Club, Endocrinology Interest Group, Ether (Anesthesiology Club), Ophthalmology Club, Family Medicine Interest Group, GI Club, Hepatitis Project; Homeless Health Advocates, New York City Free Clinic, Obstetrics/Gynecology Interest Group, Plastic Surgery Club, Student Interest Group in Medical Imaging Applications, Psychiatry Interest Group Sports Practitioners’ Interest Group, Student Collective for Ear Nose and Throat, Surgery Club, Wilderness Medical Club, Child Abuse Prevention Project, Global Medicine Club, Law and Medicine Club, Sexual Health Advocacy Group, Physicians for Human Rights, and Physicians for a National Health Care Program. Students interested in issues of medical journalism and/or communications may participate in the student newspaper and the student arts magazine, and those students interested in biomedical investigation also produce an annual journal of medical student research.

**Master Scholars Program**
The Master Scholars Program enriches the environment for learning and students’ concepts of their identities as physicians-in-training in a variety of ways. Each student chooses membership in one of five Master Societies: the Jonas Salk Society for Biomedical and Health Sciences, the Severo Ochoa Society for Medical Informatics and Biotechnology, the Walter Reed Society for Health Policy and Public Health, the May Chinn Society for Bioethics and Human Rights, and the Lewis Thomas Society for Arts and Humanities in Medicine. Each Society, named for a renowned alumnus or faculty member of the School. The Societies sponsor lectures and seminars in areas that are important to all physicians as individuals, professionals, and members of society. Through these offerings, the students’ perceptions of the breadth of opportunities open to them are expanded, opportunities for in-depth participation in these areas are communicated, and the groundwork for student-faculty mentorships is laid.

**MD/PhD Training Program, MD/MPH Program in Global Health and Honors Program**

Students who have a particular interest in careers in academic medicine have additional enrichment options available to them. Qualified students may apply for our NIH-funded MD/PhD training program, or our new MD/MPH Program in Global Health. Students interested in research, but seeking a less intensive exposure during medical school, also can apply to participate in the Honors Program. In this program, students work on a well-defined project under the guidance of an approved mentor in their area of interest. After a minimum of 18 weeks of research, which may include time spent during the summers prior to and following the first year, participating students write and defend an abbreviated thesis and, if successful, receive their medical degrees with “Honors” upon graduation. Finally, interested students also are encouraged to consider spending an additional year during medical school pursuing specialized training within or outside of the medical school, including obtaining MPH degrees and securing research fellowships under NIH, Howard Hughes, Alpha Omega Alpha, Sarnoff or Doris Duke Foundation sponsorships. Over the past few years, an average of twenty students per year have elected to spend a fifth year in training prior to graduation. Collectively, these activities provide students with a rich set of opportunities for pursuing their interests in the science and public policy of medicine.

**Mentoring and Counseling**

Mentoring of students takes place through the combined efforts of the Senior Associate Dean for Education and Student Affairs, the Associate Dean for Student Affairs, and the Master Scholars Program. Each student is assigned a faculty member affiliated with the student’s Master Scholars Society. Mentors provide students with a network of resources in order to facilitate intellectual, professional, and personal development. In the context of the current discussion, the role of the mentor is to provide students with insight into their potential career interests, refer the student to other faculty who represent potential resources, and counsel students on experiences which they can pursue within the school that will assist them in career preparation/decision-making. The Associate Dean for Student Affairs is available at all times to provide counseling on available educational resources and to assist with personal professional career questions and self-assessment. The Senior Associate Dean for Education and Student Affairs, who writes the dean’s letter for each of the students, also works with the class officers to schedule career panels for the students with the various residency program directors and departmental chairs. Formal preparation for residency application begins in December of the third year, during which the Senior Associate Dean for Education and Student Affairs explains the timeline and application process. By early March, each student has submitted a list of potential areas of interest for further training and, by early May, has an individual faculty advisor in each department of interest. Throughout May and June, the Senior Associate Dean for Education and Student Affairs meets in small group sessions with the rising 4th Year class and, throughout the summer, meets one-on-one with each student to solidify his or her career choice and review individual application strategy.

In the past, the different components of the personal and professional development program for medical students have been “housed” differentially in the Office of Medical Education and Student Affairs and guided by two deans (the Senior Associate Dean for Education and the former Senior Associate Dean for Student Affairs). As a result, the continuity between progressive stages of development, mentoring and advising as students progress from one stage to the next of their own developmental process and from more general to specialized advising and mentoring was ambiguous. At the beginning of the 2006-2007 academic
year, this section of the Dean’s Office was restructured. Dr. Lynn Buckvar-Keltz assumed the position of Associate Dean for Student Affairs; among her responsibilities is individual counseling of students having personal or academic difficulty. The portfolio of the Senior Associate Dean for Education was extended to include overall responsibility for Student Affairs, bringing all components of student education and student life under one umbrella. With this new structure in place, the Senior Associate Dean for Education and Student Affairs is convening two task forces, one to analyze the strengths and weaknesses of the current system and develop a proposal for a comprehensive, seamless mentoring/advising program, and the other to design a mechanism through which the goals and objectives of the Professional Development Portfolio may be linked with those of an effective Office of Academic Integrity.

Outcomes Measures for Career Selection

We utilize three primary outcomes measures to assess success in preparing students for all career options in medicine. These include:

1) Performance on Parts I and II (CK and CS) of the USMLE. These outcome measures provide us with an indication of the extent to which we have been successful in broadly educating our students for a range of careers. Our students typically do quite well on both parts of the boards, with a pass rate higher than 95%. Moreover, the data on our students’ subject-specific performance suggest that they do uniformly well across the topic areas, scoring at or above the national average on all aspects of the licensing exam.

2) Annual results of the National Residency Match Program. These results provide us with information about the distribution of careers (or, at least, initial clinical training trajectories) that our students elect to pursue. Recent data indicate that, over the past five years, our students have successfully matched into programs for every professional training pathway in medicine, including Anesthesiology, Dermatology, Emergency Medicine, Family Medicine, General Surgery, Categorical and Primary Care Medicine, Neurology, Neurology/Psychiatry, Neurosurgery, Obstetrics and Gynecology, Ophthalmology, Orthopedic Surgery, Otolaryngology, Pathology, Pediatric Neurology, Pediatrics, Pediatrics/Medicine, Plastic Surgery, Psychiatry, Radiation Oncology, Radiology, and Rehabilitation Medicine. Additionally, the quality of the programs to which our students match provide us with an indirect indication of the superior quality of our training, as perceived by residency training programs.

3) Annual results of residency program directors’ assessments of our graduated students. In April of the year following the graduation of each cohort of students, we elicit explicit, individualized feedback from the directors of the programs to which our students have matched. In comparison to their fellow first year residents, our students are rated highly and consistently above average on specific criteria that capture their knowledge, skills and professional attitudes.

In summary, the School of Medicine ensures a rich, general medical education by combining a broad required core curriculum, electives that permit each student to both expand in breadth and differentiate toward his/her interest, and a collection of complementary activities that provide additional scholarly opportunities. Faculty counseling and mentoring assist students in making wise decisions for their further training and future careers, for which data confirm that they are exceptionally well-prepared.

Recommendation

• Continue to develop a comprehensive and seamless advising and mentoring program that vertically spans all four years of a student’s undergraduate professional training.

Educational Activities That Promote Self-Directed and Lifelong Learning

Students are prepared to take active responsibility for their own learning from the very first weeks of their educational training program. This key aspect of the educational program begins with student preparation
for small group case studies in the first month of the first year and culminates during the fourth year acting internship. As the students move through the curriculum, these activities become progressively less faculty-directed and more self-directed. At all points, the changing nature of scientific and medical knowledge and skills is stressed. Accordingly, a key element in all aspects of our curriculum is “learning how to learn.”

**Activities**

Four main types of activities contribute to this aspect of the curriculum: (1) preparation for class activities based on material provided by the faculty (first year); (2) preparation for class activities based on material sought outside the formal curriculum, including traditional and electronic library resources (first and second years); (3) preparation for presentation of an evidence-based clinical plan based on information sought largely outside the formal curriculum (clerkships); and (4) preparation for patient care without restriction with respect to source (acting internship, consultative electives). While types 1 and 2 are largely faculty-driven, types 3 and 4 are largely self-directed. All activities, regardless of their vertical placement in the curriculum, are patient- or case-centered. Selected, but no means exhaustive, examples drawn from our curriculum are given below.

**Sufficiency**

Both the students and the faculty view this aspect of the curriculum favorably. By the middle of the third year students are expected and able to: 1) find answers to any question they may have with respect to the care of their patients; and 2) begin to make diagnostic and therapeutic assessments and plans based upon a critical reading of the relevant literature. Although the clerkships offer formal material presented in lectures, journal clubs, and case discussions, students are fully versed and confident in using electronic resources; they are expected to demonstrate their proficiency in write-ups, case and journal club presentations, and preparations for clinical Pathological conferences (CPC), clinical vignettes and cyber classroom sessions. Acquisition of these skills is a specific component of summative student assessment in all of the core clerkships, and formative assessment of the development of these skills is an objective of the small group, case-based conferences in the preclinical curriculum. By the acting internship and in other fourth year curricular activities, self-directed learning has become an everyday habit. In the assessments of our graduates’ performance by their first year residency program directors, our graduates have consistently scored at or above the cohort in terms of their data analysis and interpretation, knowledge of the literature, use of literature during rounds, use of literature for clinical decision-making, and critical judgment.
Resident Evaluation by Program Directors
ALL Specialties
Evidence Based Medicine and Critical Reasoning Skills

Class 2004

Data Interpretation & Analysis
Knowledge of the Literature
Use of Literature on the rounds
Use of literature for clinical decision making
Critical Judgement

Class 2005

Data Interpretation & Analysis
Knowledge of the Literature
Use of Literature on the rounds
Use of literature for clinical decision making
Critical Judgement
Year One Examples

Module: Host Defense: Mechanisms and Therapeutics
In the introduction to the module, students learn that major emphasis will be on important general principles, rather than on minute details about individual microorganisms. The faculty stress that the lectures and small group exercises cover in detail only some of the important viruses, bacteria and fungi, focusing on those infectious agents and infections which best illustrate the basic concepts necessary for understanding the principles of infectious pathogenesis and host response. The material selected for presentation is carefully chosen to provide the students with a framework for self-directed study of infectious agents which are not covered in detail in this course.

For example, because the number of medically important helminths and other parasites is large, formal didactic sessions are used as a mechanism for presenting representative organisms which illustrate general life cycle and host interaction patterns. We promote self-directed learning by including some pathogens in case-based small group discussion sessions which were not formally covered in core lectures; we provide guidance for self-study by accompanying each case study with suggested textbook assignments, Internet resources, and a School website with high-resolution, digitized microscope slides showing the worm and the pathology it can cause. Our objectives in this approach are to: 1) model how application of general principles can expand knowledge; 2) demonstrate the critical role of self-directed learning in converting knowledge into understanding; 3) stimulate students’ senses of inquiry by directly relating science and clinical medicine in a vivid, interactive manner; and 4) reinforce the self-fueled, continual learning their professional careers will demand.

Module: Molecular Basis of Medicine
The subject matter of this module is drawn from areas of biomedical knowledge that are changing exceptionally rapidly. Therefore, the curricular approach, of necessity, is designed to promote self-directed, lifelong learning. Specific activities which highlight this approach include our small group discussions and the independent genetic disease paper done by students at the end of the block. At the beginning of the module, students are introduced to the major molecular biology and genetics on-line data bases. Throughout the course, students are required to use these databases to obtain information that will be discussed in the small group sessions.

Year Two Examples

Module: Skills and Science of Doctoring II
The students learn many of the skills required for self-directed, lifelong learning in the Epidemiology, Biostatistics, and Preventive Medicine unit of the second year segment of the longitudinal Skills and Science of Doctoring module. The principal learning objective of this unit is acquisition of an understanding of the principles of critical appraisal of the medical literature and of clinical decision making. After providing a review of the fundamental concepts of biostatistics and epidemiology needed to interpret published medical studies, the faculty preceptors require that students use those concepts to read, critically evaluate, interpret, and use information from articles and abstracts in the medical literature. These expectations are specifically communicated in the content and format of the various worksheets, conferences and written assessments of the unit. For example, in the Preventive Medicine segment of the unit, after learning the framework for and basic tools of clinical epidemiology such as Bayes’s theorem and operating characteristics of diagnostic and screening tests, students work through a few, specific, in-depth examples from preventive medicine, including vaccination against Haemophilus influenza, screening for breast cancer, and occupational asthma. The overall objectives of each of these exercises -- to provide physicians-in-training with the necessary, cross-disciplinary tools to ask the right clinical questions, find the information they need in the medical literature, evaluate the validity and reliability of the information and its applicability to patients in their care,
and use the information correctly to support clinical decision making -- are made clear to the students by the unit directors.

Physical Diagnosis, a second unit of the Skills and Science of Doctoring II module, also fosters self-directed learning, albeit in a very different venue. Students, in groups of two, work with a preceptor to initially develop and subsequently improve their clinical skills. Each student identifies skills in need of more attention, works with his or her preceptor to practice bedside skills, and comes to elucidate continual learning as the tool by which clinical communication, history-taking and physical examination skills grow over a professional lifetime.

Clerkships
During orientation to the third year, students collaborate with preceptors and library staff to review effective means of searching the clinical literature. Subsequently, the skills which they have consolidated are honed during each clerkship. In every clerkship, students present formally, both in oral and written format, their patients to the attending physicians. They are required to demonstrate the ability to use all available resources to develop an evidence-based, clinical plan for each of their patients. Furthermore, although students have no direct responsibility for patients, they must demonstrate understanding of the scientific basis for their patients’ disease processes and incorporate that understanding into formulation of differential diagnoses and diagnostic and treatment plans. Thus, they must be able to efficiently and effectively search the scientific and medical literature. Critical thinking, rational, data-based clinical decision making, the skills needed for self-evaluation (e.g., identifying what you don’t know), and continual reformulation of hypothesis and approach as new data become available are emphasized and specifically assessed in each clerkship.

Consistency of Educational Quality and of Student Evaluation
During the first two years of the educational program at the School of Medicine, the bulk of the educational experience occurs at a single site. This centralization allows for consistent educational experiences when the entire class is engaged in a single session or when smaller groups of students are precepted by the same instructor. In all of the small group learning exercises – from the smallest one or two-on-one sessions in the Skills and Science of Doctoring longitudinal module to the largest (i.e., 30-35 students) case-based seminars in some units of the second-year Mechanisms of Disease module – faculty development and preparation to ensure educational equivalency takes place at a minimum prior to the first meeting of the small groups. In modules which engage fourth year medical, MD/PhD and graduate students, residents or fellows as small group preceptors, students meet with the unit and module directors at least once before the group sessions begin, but often during and after the particular organ system block in which the students serve as teaching assistants. In the pre-meetings with their instructors, the unit and module directors define the objectives of each learning exercise and articulate the key concepts with which each student should leave the session. Since 1) the summative assessments for all students in all modules of the first and second years are uniform; 2) students directly evaluate both their large and small group preceptors as part of a comprehensive dean’s office curriculum assessment tool; and 3) the unit and module directors can track specific students to specific small group preceptors, there are robust mechanisms in place to evaluate consistency of educational quality and of student performance evaluation, identify deficiencies should they exist, and, with the assistance of OME, remediate such deficiencies.

Because the majority of students spend at least some time during their third and fourth year core clerkships at the clinical sites listed and described in the required course and clerkship forms and elsewhere in the database, ensuring consistency in educational quality and student assessment across sites is both critical and more difficult. The various clerkships employ some common mechanisms to promote cross-site educational consistency. These include:

- Communication of specific educational objectives and assessment criteria among clerkship directors, site directors, faculty and residents
- Development and implementation of a common core curriculum to meet those established objectives
• Assessment of and feedback from students.

**Bidirectional Communication**

Regular meetings of the clerkship and site directors promote bidirectional communication between the different constituencies involved in the educational program for our students. First, in direct clerkship and site director meetings, the objectives of each clerkship are reviewed, linkages to assessment methods defined, and criteria for assessment discussed. The frequency of these meetings varies across clerkships, but at the very least occur annually. Electronic communication facilitates coordination across sites and, last year, the Senior Associate Dean of Education and Student Affairs began what will become an annual visit to our main alternative site, the North Shore/Long Island Jewish Hospital System. Second, clerkship and site directors communicate directly with their teaching faculty. All of the core clerkships distribute, via the site directors, their learning objectives to the faculty and, by the end of this academic year, the three clerkships which do not yet have active, current websites will be “online” for both students and faculty. Some of the clerkships provide regularly scheduled, departmentally requested, faculty development sessions in conjunction with OME; during these sessions, faculty learn and practice small group and large lecture, as well as feedback, skills. This year, in association with the Office of Organizational Development and Learning (ODL) and in collaboration with the Office of Graduate Medical Education (GME), OME is sponsoring a series of structured training sessions open to the general faculty. Finally, given the intimate interactions among house staff and students, it is important that the residents serving as teachers be familiar with the clerkship objectives, core curriculum and assessment criteria. As stated above, the clerkship objectives are available to house staff both as hard copy and in electronic format. Furthermore, several departments have adopted an annual “Residents as Teachers” workshop program or work directly with the Associate Dean for Education to enhance the teaching skills of the residents.

**Core Curriculum**

All of the core clerkships, with the exception of Advanced Medicine, have a clearly articulated and well-posted core curriculum. Some clerkships have centralized group sessions to which students on rotation at all sites come for didactics; others fulfill the objectives of the core curriculum through shared “paper case” vignettes, online, interactive, multimedia modules, or cyber classroom discussions. The number and quality of these sessions, as well as of teaching and/or preceptors rounds, are reviewed for each site by the clerkship director and evaluated by the students themselves through the dean’s office clerkship evaluations. Data are deconstructed by site so that inconsistencies in quantity and/or quality of formal learning sessions can be identified and remedied.

**Assessment and Feedback**

Prior to the current academic year, clerkship directors monitored each student’s clinical experience by a number of different methods. In Medicine, Ambulatory Care, Pediatrics, and Surgery, PDA-based, web-based or paper-based patient logs recorded individual student’s experiences longitudinally. In Neurology, Psychiatry and Obstetrics and Gynecology, this information was obtained through one-on-one meetings with the clerkship directors and/or student preceptors. Last year, while linking their own specific clerkship objectives to the institution’s educational program objectives, every clerkship director also articulated the number of actual or simulated patient encounters, as well as the level of involvement in each encounter, required to ensure achievement of the clerkship’s learning objectives. At Clerkship Orientation in June 2006, each student received a booklet with the patient encounter logs for each of the nine core clerkships. This information will provide the clerkship directors, the OME and the Curriculum Committee with valuable information on cross-site equivalency. Under the guidance of the Senior Associate Dean for Education and Student Affairs, the information derived from this inventory also will inform the educational research and development agenda of the AES group and the Associate Dean for Medical Education and Technology. The six core clinical disciplines – Medicine, Surgery, Pediatrics, Psychiatry, Neurology and Obstetrics/Gynecology – all employ subject examinations provided by the NBME as one measure not only of acquisition of knowledge, skills and attitudes, but also of consistency of educational quality and student assessment across sites. In addition, the standardized, online clerkship student assessment tool, developed by all clerkship directors three years ago, features qualitatively robust descriptors by which a student’s
knowledge, skills and professionalism may be assessed with a minimum of evaluator bias. Seven of the nine clerkships utilize this standardized clerkship assessment methodology consistently across sites and across clerkship blocks. This has resulted not only in markedly improved transparency of the assessment process, but also finer “granularity” in distinction of one student’s performance from another’s. These mechanisms, in combination with the feedback obtained directly from students through the dean’s office clerkship evaluation system, have improved our ability to ensure robust assessment of the consistency of educational quality and of the student assessment process.

Recommendations

- Continue to promote cross-site equivalency in educational experience and quality by analysis of the information obtained through the students’ patient logs; utilize this data not only to prompt educational program “course corrections” when necessary, but to directly inform the research and development efforts of AES in creating innovative curricular elements.
- Continue to develop, in full collaboration with the Dean, Curriculum Committee and Department Chairs, an effective method for addressing the rare instances in which clinical grading policy at the departmental level is not congruent with that adopted by the School of Medicine.

Required Content Areas

It is of course easier to determine whether a content area is addressed than how well it is addressed. This is particularly true for those areas which are covered in multiple courses and clinical exercises throughout the four years of medical school. For example, areas such as “communication skills” or “multicultural medicine,” although explicitly addressed early on in the longitudinal Skills and Science of Doctoring module of our curriculum, could plausibly be considered essential components of every required clerkship, even if they are not identified as specific course objectives. In this section we will discuss our methods for determining how well the various content areas are being addressed and, based upon that analysis, present our assessment of particular curricular strengths and areas that remain challenging and require additional attention.

Methods of Assessment

The charge actually comprises several subsidiary questions. Is a required content area included in the curriculum? How much time is devoted to it? Are students acquiring the knowledge and skills appropriate to the content? Do students perceive the teaching to be adequate? We have available a number of instruments for answering these questions. None is appropriate to all areas, and some are more useful in one context than in another. Individual course evaluations provide detailed, up-to-date data on specific courses and are useful when a content area roughly corresponds to a single unit within a module such as biostatistics, epidemiology and genetics. Performance on standardized examinations (USMLE Step I and II including the clinical skills examination, as well as clerkship subject examinations) can provide evidence of knowledge and skills acquisition.

The AAMC Graduation Questionnaire (GQ), completed by new graduates each year, has the advantage of evaluating not only specific courses, but also content across courses and years of training. It provides subjective, “impressionistic” ratings on the quality of instruction and whether the amount of time devoted to particular topics was or was not adequate. One disadvantage of using the GQ is that the number of questions pertaining to any one topic varies widely. For example, in the 2005 questionnaire there were 14 questions about geriatrics and one question on human sexuality. A further disadvantage is that the questionnaire necessarily relies on retrospective impressions of curricular work sometimes done four years earlier. Memories over time become distorted, and the curriculum itself may become substantially revised over the respondents’ four-year window. Nevertheless, the GQ is a helpful source of information for areas in which additional data are lacking.

Assessment Observations

Information from all sources available strongly support the adequacy of the School of Medicine’s training in nearly all content areas. One example of the robustness of training is in “communication skills,” a topic
addressed in the Physician, Patient, and Society unit of the Skills and Science of Doctoring module, the psychopathology section of the Brain and Behavior module, and in every required clinical clerkship. The GQ asks students how strongly they agree or disagree with the statement, “I am confident that I have the appropriate knowledge and skills to... [communicate with patients in a variety of circumstances.]” The proportion of students rating “strongly agree” or “agree” ranged from 77.6% (for discussing a prescription error with a patient) to 92.3% (for providing safe sex counseling to a patient with a different sexual orientation).

Further evidence that communication skills are well addressed in the NYU curriculum comes from the clinical skills examination (CSE) of the USMLE Step II, a portion of which directly assesses physician-patient communication. In the 2004-2005 academic year, of the 165 NYU medical students who took the CSE, 96% passed. The adequacy of training and evaluation is further supported by the results of the in-house Comprehensive Clinical Skills Examination (CCSE) required of all medical students progressing from the third to the fourth year. The CCSE is modeled on the USMLE Step II clinical exam and uses standardized patients in a number of clinical encounters. Of the 160 students taking the exam in its 2004 pilot year, seven were judged to have substandard communication skills. The number in 2005 was six. Beginning in 2005, specific remediation was offered to all students who did not meet or exceed expectations in this clinical skill set.

Evidence for other key content areas is less extensive, but nevertheless positive and reassuring in most cases. In the absence of other information, GQ ratings on the amount of time devoted to particular topics provide a rough approximation of how well the area is addressed. (The response rate to the School’s GQ is high, well above the national average.) Ratings of “inadequate” amounts of time, as opposed to “appropriate” or “excessive” suggest a need for review. The reverse, however, is not necessarily true: students may rate the time devoted to a “boring” topic by an inadequately brief but unengaged lecturer as “appropriate.” Of the 33 key content areas in the 2005 GQ, 21 were rated as being “appropriately” represented in the curriculum by most students.

The time devoted to six of the areas was rated “inadequate” by a majority of our students on the 2005 GQ. These areas are: (1) alternative medicine; (2) health care systems; (3) medical jurisprudence; (4) nutrition; (5) pain management; and (6) practice management. It should be noted that in every case the proportion of students rating the item as inadequate has declined over the last five years. For example, in 2001, 74% of respondents said the time allotted to teaching about alternative medicine was inadequate. In 2005 the number had decreased to only 53.5%. Similarly, two years ago, an interdisciplinary segment on pain management was introduced into the Nervous System unit of the second-year Mechanisms of Disease module. The initial effects of introduction of that curricular element on the perceived adequacy and quality of pain management content will not be seen until members of the current fourth year class complete the GQ. Last year, the School of Medicine received a donor gift and endowment to develop curriculum in healthcare systems and practice management. Under the guidance of the Senior Associate Dean for Education and Student Affairs, a task force is developing a vertical educational program in the “business of medicine” that will span both undergraduate and graduate medical education. Several of these six areas embrace topics, including nutrition and alternative medicine, also not well addressed in the graduate medical education curriculum. Accordingly, they represent priority items for the School of Medicine to pursue through the Office of Medical Education and its AES R&D group.

Six key content areas are not captured by questions on the GQ. These are: (1) health care quality review; (2) home health care; (3) human development/life cycle; (4) medical humanities; (5) patient health education; and (6) rehabilitation/care of the disabled. Of these six, health care quality review and patient health education are extensively covered and evaluated in the Skills and Science of Doctoring module and in the Ambulatory Medicine clerkship. The medical humanities are addressed both broadly with the Skills and Science of Doctoring module and highly specifically in the “Patient Narrative” segment of that module, as well as in the Humanistic Medicine seminars which are a component of the Medicine core clerkship. In addition, throughout their preclinical years and core clerkships, students write reflective pieces that are
required coursework and also become part of their Professional Development Portfolios. This past year, the NYU School of Medicine and United Cerebral Palsy of New York initiated a flagship program in which disabled patients participated in the “Patient Narrative” small group sessions with a faculty member and four students. This program earned recognition by the Office of the Mayor of the City of New York. Although home health care is not addressed directly within the curriculum, second year students do have a small group exercise on team care of the chronically ill patient. Although human development/life cycle is addressed in the behavioral science segment of the Nervous System unit of the Foundation for Medicine module, the emphasis is weighted more toward child development than it is toward aging and life cycle changes.

In summary, most key content areas are well represented across the four years of medical curriculum. Communication skills is one example (from among many) of particular strength. Six topics are inadequately represented, but have been improving: (1) complementary and alternative medicine, (2) health care systems, (3) nutrition, (4) medical jurisprudence, (5) pain management, and (6) practice management. Two topics may be underrepresented in the curriculum and require greater attention: home health care and human development/life cycle.

**Recommendation**
- With a robust, collaborative system for horizontal and vertical curricular conversation and integrated, interdisciplinary curriculum delivery systems now in place, continue what the joint committee of preclinical unit and module directors and clerkship directors already have begun: a thorough reassessment of the core content of the curriculum. The goals of this process are to: 1) evaluate and, if necessary, redistribute weight placed upon certain topics while introducing key new areas which reflect the changes in biomedical discovery, translational medicine, and clinical care; and 2) develop and implement innovative methods of cross-disciplinary and vertical curricular delivery.

**Inpatient and Ambulatory Teaching**

**Balance between Inpatient and Ambulatory Teaching**
The increasing emphasis on the outpatient setting in current medical practice necessitates that all students are properly exposed to, and trained in, ambulatory health care delivery. At the School of Medicine, we call upon an extensive clinic system at several of our hospitals to provide our students with an appropriate level of ambulatory teaching in each of the required disciplines. All core clerkship disciplines (excluding Critical Care and the Advanced Medicine acting internship) either include ambulatory care experiences in their structure, or are complemented by a separate, dedicated, ambulatory care rotation. The goals and objectives for each clerkship are designed to emphasize the continuity between inpatient and outpatient medicine. Thus, a balance between inpatient and ambulatory experiences is assured. Appropriately, the most extensive ambulatory care experiences are provided in Medicine and Pediatrics, where each provides full-time, four-week daily ambulatory experience. In Medicine, the Ambulatory Care experience constitutes an independent clerkship, which not only includes primary care and subspecialty ambulatory experiences, but also emphasizes the general skills of ambulatory care medicine. Of note, the vast majority of preceptorships within the Skills and Science of Doctoring longitudinal module over the first two years occur in ambulatory settings. A brief description of the required ambulatory experiences within the core clerkships, and how they relate to the inpatient experiences, follows.

**Medicine/Ambulatory Care**
All students participate in a 4-week, full-time, outpatient medicine rotation; the inpatient component of the core Medicine experience includes an 8-week rotation in the third year and a 4-week acting internship in the fourth year. Students attend medicine primary care clinics daily and are assigned to a 1:1 experience with their faculty preceptor. In addition, students rotate each week through a variety of medical subspecialty clinics. Student encounters are recorded in a PDA log and are reviewed by the clerkship director to ensure an adequate experience. Preceptors perform direct observation of students to provide feedback and
evaluation; student performance also receives formative and summative feedback through Objective Structured Clinical Exams (OSCEs).

**Pediatrics**
The ambulatory pediatrics experience consists of four weeks (out of a total of eight) dedicated exclusively to outpatient pediatrics. Over this 4-week period, approximately 15% of the time is spent in the pediatric emergency room. Students work directly with attending physicians and fellows, as well as with residents; faculty are responsible for assigning students to patients according to the students’ knowledge/ability as well as the complexity of the patients. Students are evaluated in the pediatric ambulatory care setting for intellectual curiosity, fund of pediatric-specific knowledge, history and physical examination skills, communication skills, and professional attitudes, and they also undertake a 4-station OSCE. Student performance, as well as student evaluation of the rotation, are used to assess the success of the rotation at each institution.

**Obstetrics/Gynecology**
Students on the Ob/Gyn clerkship are required to spend 1 week of the 6 week rotation (i.e., 17%) on a full-time, core ambulatory care experience, divided between obstetrics and gynecology. Students attend clinic daily during that time, and are taught, supervised and evaluated by both attending and resident physicians. Interested students have the option of spending an additional elective week of their Ob/Gyn rotation in the ambulatory setting, thus raising their total ambulatory training to approximately 1/3 of the rotation.

**Neurology**
Training in neurologic ambulatory care is integrated into the overall neurology clerkship, which is 4 weeks in duration. Students devote 10-13% of their overall neurology rotation to ambulatory care, as a single 4-5 hour clinic session weekly (16-20 hours total). Students from almost all of the neurology inpatient training sites attend the Bellevue neurology clinic. The only exception to this rule is students doing inpatient neurology at the VA New York Harbor Healthcare System (VA), who participate in the neurology clinic at that institution. Students in the neurology ambulatory care setting work closely with residents, but are responsible for performing components of the neurologic examinations and are supervised by an attending physician.

**Psychiatry**
The psychiatry educational program director strongly believes that for an initial introduction to psychiatric diagnosis and care, students benefit most from exposure to patients with well-defined and relatively unambiguous diagnoses, such as those seen on the inpatient psychiatry service. Moreover, although much of psychiatry as it is currently practiced is an outpatient discipline, issues of patient confidentiality and comfort make it difficult to provide students with a separate, core psychiatry outpatient experience. In order to emphasize inpatient care but still provide a balanced exposure, the psychiatry clerkship offers ambulatory exposure that is, like neurology, integrated as a weekly experience within the clerkship. Students attend one outpatient clinic (4-5 hours) per week, including intake evaluation or medication management. Students also attend and participate in the new VA Post-Traumatic Stress Disorder clinic; this experience is considered particularly valuable because it provides longitudinal exposure to generally expressive patients. In addition, over the course of the 6-week rotation, students devote four 8-hour shifts to the psychiatry emergency department. Thus, the total time spent in the outpatient setting is approximately 20% of that of the total clerkship. Residents, fellows and faculty all participate in the teaching process, and students are directly observed at least three times during the rotation.

**Surgery**
As it is for psychiatry and neurology, the ambulatory care experience for surgery is integrated into the surgery clerkship. Students spend at least 1-2 afternoons (8 hours/week, or 20% of the total clerkship) participating in surgery clinics, where they are supervised by both faculty and senior (R4 and R5) residents, and also interact with fellows and junior residents. Performance is evaluated by direct observation as well as an OSCE. Of note, the inpatient surgery clerkship experience includes two 2-week blocks on selected specialty services (e.g., vascular, pediatrics, cardiac, plastics, transplant, neurosurgery). While on these
blocks, students participate in the ambulatory care clinics for these areas, providing a diversity of ambulatory surgical experience.

To confirm that the required ambulatory care experiences are satisfactory, students are surveyed at the end of each ambulatory care block (or at the end of the inpatient clerkships into which their ambulatory care experiences are integrated), and are queried about the experience. The responses are reviewed by the clerkship and/or ambulatory care directors, and adjustments considered and made as appropriate.

In addition to these required ambulatory experiences, students have the opportunity to choose additional ambulatory care experiences as elective rotations in their fourth year, or to participate in inpatient electives which also include ambulatory care exposure.

**Appropriateness of the Teaching Sites**

As a fundamental ingredient in appropriateness, the school relies first and foremost on the fact that each of the hospitals utilized as a training site is a large, active, and highly regarded institution. As detailed in the database and elsewhere in the LCME self-study, each institution is characterized by a large number of admissions in a variety of specialties and subspecialties, a highly regarded faculty, and extensive support and educational opportunities for the students. While each of the institutions has a distinct character (i.e., public, mainly private, mixed), four of the training sites (i.e., Bellevue Hospital, Tisch Hospital, North Shore-LIJ and Lenox Hill Hospital) are large, multispecialty hospitals and/or hospital systems. The VA is also a general care hospital, although as a veterans’ facility the majority of patients are male.

The total beds potentially available to our students for training across the sites numbers more than 3,000. While most clerkships utilize all the training sites, these are carefully evaluated as to both need and appropriateness, and some sites are not used by some clerkships. To cite an obvious example, Ob/Gyn does not utilize the VA Hospital. Less obvious examples that illustrate application of the appropriateness principle to clinical training sites include: 1) the elimination of the VA as an inpatient surgical site because of relatively low volume of inpatients at the VA while outpatient population has grown; and 2) utilization of the inpatient services of the Long Island Jewish Hospital campus of the North Shore-LIJ System, taking advantage of LIJ’s dedicated Schneider Childrens’ Hospital. To further ensure balance between institutions, most clerkship experiences involve inpatient experience at more than one hospital, always including a general care site. Moreover, on all clerkships, students spend at least part of their rotations assigned to one or more of our core hospitals (Bellevue, Tisch, and for some clerkships, the VA). Finally, students are assigned to individual clerkships by lottery, in order to avoid bias in the distribution of rotations. The size and diversity of the New York metropolitan area also helps ensure that our students are exposed to patients with a very wide range of diagnoses, as well as national, ethnic and socio-economic groups.

To ensure that the inpatient clerkship experiences across institutions provide a common core of experience, the training across the institutions is carefully coordinated. Each clerkship is organized by an overall clerkship director, who meets regularly and interacts closely with the clerkship site director at each institution. For each clerkship, students across sites are provided with common goals and directives and provided with a common core curriculum. As discussed above, depending on the clerkship and the site, the curriculum is either delivered on-site, or the students return to the main campus to participate in common, didactic learning experiences. On the surgical clerkship, exposure to core material is assured and/or supplemented by the use of computer-based simulation cases, a novel innovation that is now being examined by other surgical programs nationwide. The expansion of such modalities to other core disciplines, both horizontally across the undergraduate clinical years and vertically to embrace graduate medical education, is currently a major initiative of the Education program, led by the Vice Dean for Education, Faculty and Academic Affairs and the Senior Associate Dean for Education and Student Affairs.

Adequate and balanced training at each institution utilized in each clerkship is assured by various monitoring techniques. First, as of this year, all students are provided with clerkship logs that expressly state the objectives of the clerkship and the clinical encounters through which those objectives will be met and assessed. When a student’s log is noted to be lacking in a required experience, the clerkship site director will
act to ensure provision of that experience. Data obtained from the logs also will be used to inform “gaps” in meeting particular clinical educational objectives and generate action plans for specifically addressing and correcting, by alternative modality, those areas which may require more innovative approaches. The maintenance of clerkship quality and broad consistency across experiences for individual students is further achieved by employing, for each clerkship, a common evaluation system across the institutions. Although the evaluation processes vary somewhat between clerkships, cross-institution evaluation of students invariably includes assessment by the ward attending, the supervising resident, the Firm Chief or teaching attending and the results of the shelf exam (for clerkship except Ambulatory Medicine, Critical Care and Advanced Medicine. The performance results of students are analyzed regularly, and differences between institutions are identified and tracked. An unexpected variance between institutions triggers an investigation on the part of the clerkship director as to whether such discrepancies represent actual student performance, differences in grading policy and/or style, or differences between the institutional experience and/or curriculum that require correction. Finally, student satisfaction surveys are collected regularly and analyzed across our various institutions, with a particular eye toward differences in student satisfaction among institutions. Small differences may warrant minor corrections. Larger differences - particularly low overall student satisfaction scores (<4.0 on our 7-scale) at a particular institution - will trigger more aggressive intervention, including review by the Curriculum Committee, potential structural changes, and specific faculty development. At present, no such interventions are planned or warranted.

In summary, we believe that the size, breadth and location of our hospitals assure that we have more than adequate clinical teaching material for our students, and that the commitment of our faculty, primarily full-time but also voluntary, ensures the availability of more than adequate teaching, mentoring and role-modeling. The adequacy of the institutions, as well as the balance between them, is further assured by our multiple monitoring procedures, including cross-program evaluations of the students, student evaluations of the training sites themselves, and a well-defined system for anticipating and/or responding to inadequacies as they may arise.

C. Teaching and Evaluation
Supervision During Required Clinical Experiences
Clerkship directors ensure that students are adequately supervised in their clinical experiences and responsibilities. Each clerkship has a structure of supervised clinical experiences for students that includes routine meetings with preceptors and residents. Students are supervised by attendings and residents during their required clinical experiences.

Faculty give formative and summative feedback to students. At the end of each clerkship, students are asked specifically about their educational experiences via the Clerkship Evaluation System. They are asked specifically about the adequacy of:

1. Supervision by House Staff
   1 = Poor
   7 = Excellent

2. Supportiveness of House Staff
   1 = Poor
   7 = Excellent

3. Supervision by Faculty
   1 = Poor
   7 = Excellent

4. Preceptor’s commitment to teaching
   1= unenthusiastic about teaching students
   7= very enthused by opportunity to teach, maximized learning opportunities

5. Faculty encouragement to think and use knowledge to solve clinical problems
   1= never asked questions, no chance to develop solutions
   7= encouraged to think and challenged in constructive way
6. Feedback from preceptors
   1= feedback inadequate and not useful
   7= feedback was helpful, both constructive criticism and praise were offered
7. Direct observation by Attendings of portions of patient encounters
   1= Never
   7= Frequently (≥ once/week)
8. Received Feedback from Attendings
   1= Never
   7= Frequently (≥ once/session)
9. Quality of feedback from Attendings
   1= Not helpful
   7= Constructive
10. Sufficient contact with Attendings to enable them to make a fair assessment of students’ knowledge and skills
    1= Sufficient
    7= Insufficient
The results of these data for the 2005-2006 academic year are presented below.

### Table ED-1. Clerkship Evaluation Questions related to Overall Supervision of Students

<table>
<thead>
<tr>
<th>Clerkship</th>
<th>1 Supervision by House Staff</th>
<th>2 Supportiveness of House Staff</th>
<th>3 Supervision by Faculty</th>
<th>4 Preceptor's Commitment to teaching</th>
<th>5 Faculty encouragement to think and use knowledge to solve clinical problems</th>
<th>6 Feedback from preceptors</th>
<th>7 Direct observation by Attendings</th>
<th>8 Feedback from Attendings</th>
<th>9 Quality of feedback from Attendings</th>
<th>10 Sufficient contact with Attendings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Medicine</td>
<td>5.8</td>
<td>6.2</td>
<td>4.8</td>
<td>5.2</td>
<td>5.4</td>
<td>4.9</td>
<td>3.3</td>
<td>4.1</td>
<td>5.3</td>
<td>4.5</td>
</tr>
<tr>
<td>Ambulatory Care</td>
<td>5.0</td>
<td>5.8</td>
<td>6.0</td>
<td>6.0</td>
<td>5.9</td>
<td>5.7</td>
<td>5.0</td>
<td>5.5</td>
<td>5.8</td>
<td>5.7</td>
</tr>
<tr>
<td>Critical Care</td>
<td>5.6</td>
<td>6.0</td>
<td>5.3</td>
<td>6.3</td>
<td>5.9</td>
<td>5.2</td>
<td>3.6</td>
<td>4.3</td>
<td>5.4</td>
<td>5.0</td>
</tr>
<tr>
<td>Neurology*</td>
<td>5.4</td>
<td>5.7</td>
<td>6.1</td>
<td>6.1</td>
<td>5.4</td>
<td>6.1</td>
<td>3.2</td>
<td>3.6</td>
<td>5.6</td>
<td>3.7</td>
</tr>
<tr>
<td>OB/GYN*</td>
<td>5.1</td>
<td>5.0</td>
<td>4.8</td>
<td>5.6</td>
<td>5.0</td>
<td>4.6</td>
<td>3.9</td>
<td>3.6</td>
<td>4.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Pediatrics*</td>
<td>5.4</td>
<td>5.7</td>
<td>5.5</td>
<td>6.3</td>
<td>5.7</td>
<td>5.4</td>
<td>4.1</td>
<td>4.4</td>
<td>5.5</td>
<td>4.6</td>
</tr>
<tr>
<td>Psychiatry*</td>
<td>5.7</td>
<td>6.1</td>
<td>5.7</td>
<td>5.8</td>
<td>5.7</td>
<td>5.3</td>
<td>5.1</td>
<td>5.1</td>
<td>5.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Surgery*</td>
<td>4.4</td>
<td>4.7</td>
<td>3.8</td>
<td>5.8</td>
<td>4.5</td>
<td>4.3</td>
<td>2.9</td>
<td>2.9</td>
<td>4.3</td>
<td>3.0</td>
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<tr>
<td>Medicine*</td>
<td>5.4</td>
<td>5.7</td>
<td>4.4</td>
<td>6.2</td>
<td>5.8</td>
<td>5.3</td>
<td>3.7</td>
<td>4.3</td>
<td>5.0</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Students report a high level of supervision by house staff across all clerkships with a range of 4.4 - 5.8 on a 7-point scale. They also report a generally high level of supervision (range 3.8 - 6.1 with one exception) by faculty, from whom they receive useful and constructive feedback. However, students report and the data support that students are not observed by attendings as frequently as they would like in several clerkships. These data also are available for each site within each clerkship (see Required Clerkship Forms). While the data in the Surgery Clerkship shows students feel there is adequate supervision by residents, it also suggests that students would benefit from increased, systematic, attending-level supervision, direct observation and feedback.

### Effectiveness of Efforts to Prepare Faculty and Residents for Their Teaching Responsibilities

The OME offers consultation to all departments regarding faculty development of teaching skills. The OME conducts faculty development sessions for individual preclinical science modules and clerkships on an ad-hoc basis and works with all module and clerkship directors in designing their faculty development sessions to enhance teaching skills appropriate to the various teaching modalities (i.e., lecture, conference facilitation, laboratory, bedside teaching, etc.). In addition, the OME directly reaches out to module and clerkship directors when feedback from student course liaisons or data obtained through formal course evaluations suggest the need for design and implementation of an appropriate program/intervention to improve teaching skills of specific faculty. Faculty also may seek support individually. OME, on request, will provide direct observation of teaching sessions in any venue and constructive feedback to faculty.

### Preclinical Courses

During the first two years of the curriculum, all courses include small-group exercises in the form of case-based discussions, problem-based discussions, or literature-based discussions. Faculty development sessions which review educational objectives of individual small-group exercises and educational strategies are conducted to prepare tutorial leaders for their sessions. Most small group sessions are preceded by a meeting of the teaching staff and the faculty member(s) in charge of organizing the exercise. Some of these small group exercises are staffed by non-faculty members, including medical professionals such as genetic counselors.
Evidence of Effectiveness of Efforts in Preclinical Courses

Students have had the opportunity to evaluate lectures, conferences, seminars and preceptors in the aggregate for many years via the course evaluation system. The data presented in Table ED-1 below show generally positive ratings of lectures and conferences, including opportunities for active participation, active discovery and problem solving in conferences for each element of the preclinical years’ curricula. Note especially that facilitators of conferences and seminars are rated very highly on the “facilitator promotes learning” item.

The OME recently improved its capacity to solicit student feedback on individual educational sessions. During the 2003-2004 academic year, the OME began to embed evaluation of each individual teaching encounter in the preclinical course evaluations. All but a few modules in the first year curriculum included this measure for 2005-2006. Beginning in Academic Year 2006-2007, all lectures, conferences and seminars in all preclinical modules may be evaluated on an optional basis by the students via this mechanism. The questions on teaching evaluate both process (i.e., the way in which the sessions are conducted, material resources utilized, and organization) and outcome (i.e., the overall educational experience). Of individually rated lectures (n=278), 70% were rated equal to or greater than 3 (neutral) on a 5-point scale.
Table ED-2. Preclinical Course Evaluations -- Year One (2005-2006)

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Morphological &amp; Developmental Basis of Medicine</td>
<td>4.5 4.4 5.3 4.7 5.3 5.7 6.0 5.6</td>
<td>4.3 4.4 5.3 4.7 5.3 5.7 6.0 5.6</td>
</tr>
<tr>
<td>Molecular Basis of Medicine -Molecular Biology, Genetics &amp; Biochemistry</td>
<td>4.1 4.2 4.9 4.5 4.8 4.9 4.9 5.2 5.2</td>
<td>4.1 4.2 4.9 4.5 4.8 4.9 4.9 5.2 5.2</td>
</tr>
<tr>
<td>Cells &amp; Basic Tissues -Cell Biology</td>
<td>5.6 5.6 5.4 5.2 5.6 5.4 5.8 6.2 5.8</td>
<td>5.6 5.6 5.4 5.2 5.6 5.4 5.8 6.2 5.8</td>
</tr>
<tr>
<td>Foundation for Medicine-Histology</td>
<td>5.3 5.3 5.1 3.7 5.1 4.2 5.4 5.0 6.0</td>
<td>5.3 5.3 5.1 3.7 5.1 4.2 5.4 5.0 6.0</td>
</tr>
<tr>
<td>Foundation for Medicine -Physiology</td>
<td>4.3 4.6 4.3 5.2 4.8 4.9 5.5 5.2 5.1</td>
<td>4.3 4.6 4.3 5.2 4.8 4.9 5.5 5.2 5.1</td>
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<tr>
<td>Cells &amp; Basic Tissues -Immunology</td>
<td>6.6 6.6 5.3 4.9 4.3 4.8 4.3 4.5 6.0</td>
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<tr>
<td>Skills &amp; Science of Doctoring</td>
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<td>4.6 4.4 4.0 4.6 5.9 4.8 6.0 5.4 4.6</td>
</tr>
<tr>
<td>Foundation for Medicine-Brain and Behavior</td>
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<td>5.8 5.6 5.3 4.8 5.2 5.5 5.8 5.6 5.2</td>
</tr>
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</table>

The n of each cell varies from a range of N=125-153.
### Preclinical Course Evaluations -- Year Two (2005-2006)

<table>
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<tr>
<td>Host Defense: Mechanisms &amp; Therapeutics</td>
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<td>135</td>
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<tr>
<td>Mechanisms of Disease: Nervous System</td>
<td>131</td>
<td>135</td>
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<tr>
<td>Mechanisms of Disease: Circulatory System</td>
<td>142</td>
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<tr>
<td>Mechanisms of Disease: Respiratory System</td>
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<tr>
<td>Mechanisms of Disease: Digestive &amp; Excretory System</td>
<td>119</td>
<td>122</td>
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<tr>
<td>Mechanisms of Disease: Endocrine &amp; Reproductive System</td>
<td>140</td>
<td>133</td>
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<tr>
<td>Mechanisms of Disease-Dermatologic, Musculoskeletal &amp; Hematologic Systems</td>
<td>128</td>
<td>125</td>
</tr>
<tr>
<td>Skills &amp; Science of Doctoring - Physical Diagnosis</td>
<td>126</td>
<td>109</td>
</tr>
<tr>
<td>Skills &amp; Science of Doctoring- Epi., Biostats. and Preventive Med.</td>
<td>124</td>
<td>126</td>
</tr>
</tbody>
</table>

The n of each cell varies from a range of N=110-142
Clerkships
For all required clerkships, the clerkship director:

- Provides instructional materials for the faculty and residents detailing the goals and objectives of the clerkship, teaching expectations, specific teaching objectives, and evaluation methods. Clerkship Directors deliver this information via a range of mechanisms—i.e. via e-mails, posts on Clerkship web-sites and/or via scheduled meetings.
- Organizes meetings to describe the clerkship training program to faculty and house staff and to discuss problems that arise during the clerkship.
- Meets with directors of off-site programs to assure uniformity of the teaching program
- Provides feedback to individual faculty regarding how students assess the effectiveness of their individual teaching.
- Provides feedback to site directors regarding how students view their learning experiences at each site.

Medicine
The Clerkship director meets with all faculty and residents, including site directors, at the beginning and end of the clerkship to orient everyone to the clerkship objectives and evaluation system. Written instructions are distributed via e-mail to the teaching faculty prior to each clerkship block. Chief residents review teaching roles and responsibilities with the residents.

Surgery
At the beginning of each rotation, all residents and faculty are, provided via e-mail with instructions on teaching objectives, assessment criteria and methodology, and student orientation procedures. At least once per year, faculty and resident development sessions are held to improve teaching and evaluation skills. In addition, two or three of the department’s monthly faculty meetings are devoted to specific, teaching skills development sessions. Topics of these sessions include “micro-skills” of teaching, providing feedback, adult learning and resident as teacher.

Students evaluate the teaching skills of the residents and faculty with whom they have had contact via an online evaluation conducted by the Dean’s Office. The evaluation form allows students to give feedback on teaching processes and teaching outcomes. This information is given to the clerkship director who then provides each faculty member and resident with a formal evaluation at the end of each academic year. The data can be accessed at the end of each clerkship period if more immediate intervention, either by the clerkship director or Chair of the Department of Surgery, is considered necessary.

Psychiatry
The clerkship handbook is distributed to all faculty and residents. Quarterly meetings between site directors and unit chiefs are held to review progress toward clerkship goals and objectives. In addition, each site is formally visited and reviewed by the clerkship director twice per year.

Neurology
At the beginning of each academic year, the clerkship directors formally orient the residents to their responsibilities regarding the supervision and teaching of medical students. Residents are evaluated mid-clerkship by the medical students. Based on this evaluation, the course director provides each resident with a formal evaluation of teaching skills. Each faculty member receives a written orientation manual that clearly delineates the goals and objectives of the clerkship as well as the teaching expectations of the faculty. The clerkship director periodically provides each site director with specific feedback based upon the student evaluations collected after each clerkship rotation by the Dean’s Office.

Pediatrics
The clerkship directors formally orient both the faculty and house staff to the goals and objectives of the clerkship at the beginning of each academic year. Throughout the year, there also are required seminars in
which residents develop their teaching and supervisory skills, departmental educational committee meetings, and regularly scheduled faculty development sessions.

**Obstetrics/Gynecology**
The clerkship director annually orients faculty preceptors to the goals and objectives of the clerkship, learning objectives (derived from the Association of Professors of Obstetrics and Gynecology) of each of the core didactic lectures, format of the preceptor sessions, and the criteria and methodology for assessment of student performance. Specific preparation of residents for their teaching responsibility has been considered by the current clerkship director to be relatively informal and inadequate. Under his guidance, over the two years since he assumed leadership of the clerkship, formal engagement and preparation of the residents as teachers has increased.

**Critical Care**
All site directors meet annually with the clerkship director to review the goals and objectives of the clerkship. At this time, each site director receives a written copy of the curriculum and, from that point forward, is responsible for orienting his or her faculty preceptors to the curriculum, its objectives and the criteria and methodology for student performance assessment. Residents are introduced to the students at the beginning of each block and, at the current time, the clerkship director recognizes a need for their orientation to be more complete and robust. Despite this perceived deficiency, however, students highly rate not only their learning experiences with faculty, but also with residents, on Critical Care (Table ED-3). This may in part reflect the fact that house staff in the Critical Care sites have been prepared for their roles as teachers through the activities mentioned above in their primary departments.

**Ambulatory Care**
The clerkship director meets with all site directors to review in detail the goals and objectives of the clerkship and the criteria and methods for student assessment. The site directors are then responsible for orienting the faculty at their respective sites. Students interact directly with faculty, and not with house staff, while on Ambulatory Care.

**Advanced Medicine**
Each year the clerkship director provides supervising faculty and residents with written instructions that delineate their responsibilities. There is no additional preparation beyond that provided to faculty and house staff during the course of their preparation on the core clerkship in Medicine.

**Evidence of Effectiveness of Efforts in Clinical Clerkships**
Students are asked on their clerkship evaluations to rate their learning experiences while on house staff rounds and attending rounds. Table ED-3 shows that students rate both of these educational experiences highly across all clerkships. Additional attention to preparation of residents and faculty in Surgery and residents in Ob/Gyn is warranted, and this is a current focus of the OME.
### Table B6.5 Clinical Clerkship Evaluations 2005-2006

#### 2000-2001

<table>
<thead>
<tr>
<th>Specialty</th>
<th>POOR</th>
<th>&lt;3.5</th>
<th>3.5 - 4.4</th>
<th>4.5 - 5.4</th>
<th>&gt;5.4</th>
<th>EXCELLENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Medicine</td>
<td>4.9</td>
<td>4.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulatory Care*</td>
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<td>4.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
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<td>5.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Neurology</td>
<td>5.6</td>
<td>5.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OB/GYN</td>
<td>3.5</td>
<td>5.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pediatrics</td>
<td>4.8</td>
<td>5.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatry</td>
<td>4.8</td>
<td>5.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgery</td>
<td>5.1</td>
<td>4.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Care</td>
<td>5.2</td>
<td>5.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not applicable to Ambulatory Care*

Critical Care was first implemented in 2002.
Future Plans
The OME, ODL and AES are currently in the process of designing a system for delivery of faculty development seminars, workshops and web-based teaching modules regarding teaching skills. A series of faculty development “sessions” will be planned and implemented. Topics will include adult learning principles, facilitating small group teaching, how to give feedback, teaching at the bedside, and special topics in student assessment (e.g., making qualitative comments congruent with quantitative rating scales). These seminars will be available to all faculty across departments and sites with the goal of improving teaching skills.

Recommendation
- Continue to augment the pervasiveness and communication of opportunities for faculty and house staff teaching skills development.

Adequacy of Methods Used to Evaluate Student Attainment of Educational Program Objectives

Preclinical Methods of Evaluation
During the first two years, students are assessed by a variety of methods including:

- Formal examinations which test the students’ mastery of a body of knowledge. This type of assessment is used in all courses.
- Feedback on the students’ progress, usually after a small group exercise. This feedback may include an assessment of a student’s mastery of material, as well as his or her professionalism. This type of assessment is used in some but not all courses; in some cases, as in the Morphological and Developmental Basis of Medicine module, the formative feedback is provided both by faculty and by peers.
- Self-evaluative tools, generally in the form of problems sets and web-based tutorials. These are either currently in use or under active construction by all preclinical modules.
- Formative and summative objective, structured, clinical encounters (OSCEs), in multiple units of the longitudinal Skills and Science of Doctoring module.

Clinical Methods of Evaluation
During the clinical years, students are assessed by:

- A standardized, web-based, student assessment instrument created in 2004 for more equivalent evaluation of students in the clerkships. All clerkships utilize this instrument for assessing students’ in knowledge; physical exam, history and interviewing skills; write-ups; oral presentations, clinical problem solving, procedural and manual skills; and professional development (Appendix ED-26A).
- Evaluation of clinical skills by residents and faculty
- Written examinations
- NBME subject examinations
- Oral Examinations
- OSCEs
- Essays
- Professionalism Development Portfolio entries
- Peer Assessment
- Surgery Skills Lab
- CCSE given at the beginning of the fourth year following the completion of the core clinical clerkships. This exam is designed to evaluate competency in communication, history gathering, physical examination, clinical reasoning and professionalism.
Mix of Testing and Evaluation Methods
There are a broad array of assessment techniques used in the preclinical modules and clinical rotations which measure knowledge, skills, behaviors and attitudes. Efforts are made in each module and clerkship to match assessment techniques to their respective educational objectives. Although we have ample evidence, presented elsewhere, to support the conclusion that our students achieve our overall educational objectives, we are actively engaged in a study of how “deeply” students learn while meeting these educational objectives and how well our assessment strategies match the level of understanding implied in those articulated objectives. To capture the appropriateness and adequacy of assessment strategies as measures of achievement of our educational objectives throughout our curriculum, Module and Clerkship Directors were asked to use Bloom’s Taxonomy of Learning as a guide to determine which levels of learning are evaluated by each of the assessments utilized in their courses.

Cognitive-Knowledge
The mix of testing and evaluation methods reflects a progression of assessments that test all levels/stages of learning, ranging from recall of facts to application, analysis, synthesis and evaluation skills. In general, both the preclinical modules and the core clinical clerkships contain assessments which address each level of learning in the students’ attainment of the course objectives. The preclinical exams tend to be more weighted towards assessment of knowledge and comprehension, while the clerkship assessments shift towards a greater preponderance of higher-order and cognitive assessments of students’ clinical abilities to analyze medical problems, synthesize information and evaluate commonly encountered problems in medical practice.

Affective-Professional Development/Attitudes/Behaviors
One of the principal, affective educational goals of the curriculum is to imbue in students the habits and attitudes of a medical professional and reflective practitioner. The Professional Development Portfolio fosters this goal by creating a formal venue for reflection and for giving formative feedback to students from peers and faculty. At the end of each year, each student is asked to self-assess professional development progress as reflected in his or her own required entries and in the comments added to the portfolio by peers and faculty. This review of submissions and comment cards promotes not only self-reflection, but also self-regulation and self-appraisal, and is congruent with the attainment of educational objectives in this domain. It also should be noted that formal assessment of multiple aspects of professional development occurs in all clerkships via faculty narratives and ratings of professional behaviors using the web-based student assessment tool.

Psychomotor – Procedural Skills
Procedural skills are taught and assessed in all clerkships by observation and feedback. The Surgery Clerkship, in particular, has a Surgery Skills Center in which students practice and receive formative feedback on a subset of their basic surgical skills.

Student’s Perceptions of Evaluation Methods
Preclinical students report on their module and unit evaluations a fairly high level of satisfaction with examinations as a fair test of course material (Table ED-4). They also report that, in general, the ratio of factual recall to conceptual material on exams is reasonable. We have made concerted efforts over the past few years to create more “balance” in examinations in the preclinical modules, with fewer rote recall items/exercises and greater emphasis on students’ comprehension, synthesis and problem solving skills. The data on sufficiency of constructive feedback will be discussed below.
Table ED-4. Year One (2005-2006)

The n of each cell varies from a range of N=148-156

**2004-2005**

<table>
<thead>
<tr>
<th>Course</th>
<th>Exam material</th>
<th>Ratio of factual to conceptual material</th>
<th>Sufficient Constructive Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphological &amp; Developmental Basis of Medicine</td>
<td>4.9</td>
<td>5.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Molecular Basis of Medicine: Molecular Biology, Genetics &amp; Biochemistry</td>
<td>4.9</td>
<td>5.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Cells &amp; Basic Tissues -Cell Biology</td>
<td>5.3</td>
<td>5.1</td>
<td>4.4</td>
</tr>
<tr>
<td>Foundation for Medicine-Histology</td>
<td>4.9</td>
<td>5.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Foundation for Medicine-Physiology</td>
<td>5.1</td>
<td>5.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Cells &amp; Basic Tissues-Immunology</td>
<td>6.2</td>
<td>6.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Skills &amp; Science of Doctoring</td>
<td>6.3</td>
<td>4.6</td>
<td>6.0</td>
</tr>
<tr>
<td>Foundation for Medicine: Brain and Behavior</td>
<td>4.3</td>
<td>4.5</td>
<td>3.9</td>
</tr>
<tr>
<td>Skills &amp; Science of Doctoring-Physical Diagnosis</td>
<td>5.5</td>
<td>5.7</td>
<td>5.6</td>
</tr>
<tr>
<td>Skills &amp; Science of Doctoring-Epi., Biostats, Preventative Med.</td>
<td>5.6</td>
<td>5.8</td>
<td>4.3</td>
</tr>
</tbody>
</table>

The n of each cell varies from a range of N=132-143
Exams fairly test of course material  
Ratio of factual and conceptual material on exams reasonable 
Sufficient Constructive Feedback 

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Host Defense: Mechanisms and Therapeutics</td>
<td>4.3</td>
<td>4.5</td>
<td>4.3</td>
<td>4.4</td>
</tr>
<tr>
<td>Mechanisms of Disease: Nervous System</td>
<td>4.7</td>
<td>4.6</td>
<td>3.9</td>
<td>4.2</td>
</tr>
<tr>
<td>Skills &amp; Science of Doctoring- Epi., Biostats. and Preventive Med.</td>
<td>5.4</td>
<td>5.2</td>
<td>4.3</td>
<td>5.1</td>
</tr>
<tr>
<td>Mechanisms of Disease: Circulatory System</td>
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<td>5.2</td>
<td>4.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Mechanisms of Disease: Respiratory System</td>
<td>4.6</td>
<td>4.9</td>
<td>4.1</td>
<td>4.6</td>
</tr>
<tr>
<td>Mechanisms of Disease: Digestive &amp; Excretory Systems</td>
<td>3.7</td>
<td>4.0</td>
<td>3.1</td>
<td>3.8</td>
</tr>
<tr>
<td>Mechanisms of Disease: Endocrine &amp; Reproductive Systems</td>
<td>4.8</td>
<td>5.0</td>
<td>3.9</td>
<td>4.8</td>
</tr>
<tr>
<td>Skills &amp; Science of Doctoring- Physical Diagnosis</td>
<td>5.4</td>
<td>5.3</td>
<td>5.6</td>
<td>5.4</td>
</tr>
<tr>
<td>Mechanisms of Disease: Dermatologic, Musculoskeletal &amp; Hematologic Systems</td>
<td>5.0</td>
<td>5.1</td>
<td>5.8</td>
<td>5.2</td>
</tr>
</tbody>
</table>

The n of each cell varies from a range of N=120-143
Clinical students report on their clerkship evaluations that they would like more direct observation by faculty of their patient encounters. They agree, however, that the feedback they do receive is useful and constructive. In general, students feel they are adequately supervised by attendings and residents and have had sufficient contact with attendings for attendings to make a fair assessment of their knowledge and skills. Exceptions are evident in this year’s clerkship data in a few sites within three clerkships (see Required Course and Clerkship Forms).

Current third and fourth year students have concerns about the manner in which their clinical grades are determined. In the LCME Student Survey, 63% of the students either disagreed or strongly disagreed with the statement, “Grades for required clerkships are calculated in a fair manner,” and 64% of third and fourth year students disagreed or strongly disagreed with the statement “Grades for required clerkships are representative of student performance/abilities/learning.”

Our approach to this has been multi-pronged. All of the clerkships explicitly explain, at orientation, and either on their websites or in writing, the criteria by which students are assessed and the weights placed on each assessment component. The web-based, standardized, student assessment system in the clerkships has enabled us to centrally consolidate and analyze student ratings and subsequent grading by faculty with more granularity and, therefore, increase our targeted efforts in faculty development around assessment issues. Inter-rater and intra-rater variability can be analyzed more readily, greater distinction among students’ knowledge, skills and professionalism can be made, and the components as well as relative weight of each assessment input are rendered much more transparent. Implemented in 2004 for the Class of 2006, this newly designed instrument also established the groundwork not only for a more consistent approach to assessment across all clerkships, but also for a reduction of clerkship grade inflation.

In addition, for academic year 2006-2007, the Senior Associate Dean for Education and Student Affairs developed, and the Curriculum Committee endorsed, a policy and procedure for grade clarification should an individual student request it. The first step is consultation with the clerkship director, who makes available to the student all evaluative information used in determining a student’s performance and the result obtained when these data are fitted to the “algorithm” by which grades are determined in each clerkship. Students who after that consultation still believe that their clerkship grade is in error can request review of their grade by a panel of three clerkship directors (excluding the director of the clerkship for which the students’ grade is contested), whose decision is binding and can be to either keep, raise or lower the grade. This year, a total of 13 requests from 12 students were reviewed, and one grade change was approved. The responses of some students to these survey questions may reflect dismay or dissatisfaction with this system which differentiates among students to a greater degree and is less subject to individual negotiation than were prior rating systems utilized in the clerkships. Nevertheless, with so many students perceiving that grades are not calculated in a fair manner and that grades are not representative of student performance, continued attention to this issue is warranted.

The data obtained from the students’ clerkship evaluations suggest that another factor may contribute with the Student Survey responses regarding clinical grading. Analysis of clerkship student evaluation data indicates that at certain sites within four clerkships, students perceive they have not had sufficient contact with attendings for them to make a fair assessment of their knowledge and skills (see Required Course and Clerkship Forms). Consequently, if a student felt that his or her grade in any one clerkship was inaccurate, they might have answered the LCME Student Survey items related to grading negatively.

**Sufficiency of Formative Assessments**

Preclinical students report that they generally receive sufficient constructive feedback in their courses, with two exceptions for this year noted in red (Table ED-4). The data obtained from students on clinical rotations suggest that there are both clerkship- and site-specific variations in the degree of preceptor feedback, attending direct observation, attending feedback, and the level of interactions with attendings charged with assessment of the student’s skills (see Required Course and Clerkship Forms).
In summary, there are sufficient formative and summative assessments as indicated by the types of assessments utilized across the four years of the curriculum. Furthermore, the quality of the feedback students receive from preceptors in clerkships, in both inpatient and ambulatory experiences, is rated generally as helpful, with both constructive criticism and praise being offered.

Table ED-5. Clinical Clerkship Evaluations
2005-2006

<table>
<thead>
<tr>
<th>Feedback from preceptor</th>
<th>1=Feedback was inadequate and not particularly useful</th>
<th>7=Feedback was helpful. Both constructive criticism and praise were offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery Ambulatory</td>
<td>3.6</td>
<td>5.3</td>
</tr>
<tr>
<td>Surgery In-Patient</td>
<td>3.7</td>
<td>5.4</td>
</tr>
<tr>
<td>Psychiatry Ambulatory</td>
<td>3.7</td>
<td>5.5</td>
</tr>
<tr>
<td>Psychiatry In-Patient</td>
<td>4.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Pediatrics Ambulatory</td>
<td>4.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Pediatrics In-Patient</td>
<td>4.7</td>
<td>5.3</td>
</tr>
<tr>
<td>OB/GYN Ambulatory</td>
<td>4.4</td>
<td>5.3</td>
</tr>
<tr>
<td>OB/GYN In-patient</td>
<td>4.2</td>
<td>5.3</td>
</tr>
<tr>
<td>Neurology Ambulatory</td>
<td>4.1</td>
<td>5.3</td>
</tr>
<tr>
<td>Neurology In-Patient</td>
<td>4.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Medicine</td>
<td>5.1</td>
<td>5.3</td>
</tr>
<tr>
<td>Critical Care</td>
<td>4.9</td>
<td>5.3</td>
</tr>
<tr>
<td>Ambulatory Care</td>
<td>5.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Advanced Medicine</td>
<td>4.8</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Direct observation by attendings of portions of students’ clinical patient encounters remains problematic in a number of clerkships and warrants attention (Table ED-1). There are site-specific differences within clerkships (see Required Course and Clerkship Forms). When students receive feedback from attendings, they are generally quite satisfied with the quality of the feedback received, as evidenced in Table ED-1.

Timeliness of Performance Feedback

Preclinical Years
Informal, formative assessments are either self-graded or are given immediately after specific exercises in the preclinical curriculum. Results of graded exercises are available as soon as possible following the exercises. This is usually within a week of the exercise.

The policy of the School is that all written exams are available to students for review after they have been graded. The School does not have a uniform policy governing the mechanisms that modules may use to
make this information available. Some modules return original exams to students. Others do not release exams to students in order to maintain the integrity of a viable question item bank. However, any student can make an appointment to review his/her exam in any module. Some modules conduct a post-exam review for voluntary attendees.

Clinical
In 2006, the Dean’s Office implemented a new policy to promote more timely feedback to students during the clerkships, as well as more rapid feedback regarding their final grades. Each clerkship has developed a Mid-Clerkship Feedback Form to be utilized by clerkship directors or by the student’s preceptors in discussion of student performance at the midpoint of the rotation. The Neurology clerkship is the only exception; a four-week clerkship, Neurology gives student feedback in an ongoing way during regularly scheduled clinical experiences. For summative assessments, faculty are asked to evaluate students within a tight, two-week time-frame starting one week prior to the end of the rotation. Those core clerkships which include shelf examinations as one measure of knowledge and one component of assessment must submit their final grades to the Office of Registration and Student Records within one month of the end of the clerkship. This recognizes the average, three-week turnaround time for receipt of the students’ score reports, but clearly requires active engagement by the departmental administrators in facilitating timely submission of student evaluative data by faculty and residents. Expectations of faculty and house staff must be explicitly outlined (along with dates of mid-clerkship formative, summative feedback and end-of-clerkship, online, summative assessment) and made clear, in writing, through clerkship directors/departmental administrators to faculty, house staff, and department chairs.

Although we have made great progress in the timeliness of return of clerkship grades to students, the process did suffer several “bumps,” particularly during the first year of implementation of the web-based system; working with Medical Center IT toward streamlining this process and facilitating web-based ease of access and coordination of information across OME, Office of Registration and Student Records, teaching faculty and students is a major, current, cross-departmental activity of the School of Medicine.

Recommendations
- Evaluate the content, style and structure of the preclinical examinations with regard to the level of cognitive challenge and the educational objectives to which the assessments are linked.
- Continue to work on development and implementation of methods to increase the frequency of direct faculty observation and quality of constructive feedback offered across the curricular program, but particularly in the clinical clerkships.
- Continue to strengthen both transparency and awareness of transparency in the clerkship evaluation/grading process.
- Establish a robust, coordinated, integrated, web-based system that links prompt, clinical clerkship evaluation by the students with timely return to students of their own final assessments and grades.

Acquisition of Core Clinical Skills

Preclinical Curriculum
Training in the core clinical skills actually begins during the new student orientation with a session devoted to protection of patient privacy. This training continues in the two-year Skills and Science of Doctoring module, which includes the Physician, Patient & Society, Epidemiology, Biostatistics & Preventive Medicine, and Physical Diagnosis units. In the first year of this module, students meet regularly with a clinical preceptor who provides formative feedback on their progress. Small group conferences provide additional clinical curricula training in the basic skills of doctoring, (i.e., listening to the patient is narrative, cultural sensitive patient-physician communication, ethical considerations, measuring vital signs, etc.) Professional development is emphasized. In the second year of the Skills and Science of Doctoring module, students learn core history taking and physical diagnosis skills and develop a sound foundation in evidence-based medicine and population health.
In all modules throughout the first year, the principles of basic science are presented in clinical contexts. Each student’s mastery of this material is evaluated through formative and summative assessments which include web-based tutorials, OSCEs, papers, oral presentations, case-based problem solving, and evaluation of professionalism. Student progress is discussed at meetings of the Preclinical Board on Academic Standing, comprised of all preclinical unit directors, the Senior Associate Dean for Education and Student Affairs, the Associate Dean for Education and the Associate Dean for Students Affairs, who chairs the group. At these regularly scheduled meetings, appropriate remediation for students in academic difficulty is determined, an implementation plan developed, and subsequent progress of students monitored.

**Clerkship Orientation**

In order to prepare students for their clinical clerkships, OME and the Clerkship Directors have designed and implemented a core, mandatory, two-week curriculum, held after the second year, that prepares students to “hit the ground running” on their clerkships. This multidisciplinary, transitional program is designed to bridge the gap between the preclinical and clinical experiences. In this phase of clinical skills development, emphasis is placed upon cross-discipline and cross-clerkship commonalities in acquisition, organization, and interpretation of patient information. It stresses evidence-based reasoning as a guide to differential diagnosis and the skills of professional behavior which are required of members of an interdisciplinary healthcare team. Orientation sessions include hands-on experience in the following areas:

- Advanced Cardiac Life Support (ACLS I&II)
- CPR recertification
- IV insertion/Venipuncture training
- Fundoscopy Workshop
- Ear Nose & Throat (ENT) Workshop
- Arterial Blood Gas (ABG) Tutorial
- Professionalism for Clerkships
- Differential Diagnosis
- Library Search Skills
- Oral Presentation Skills
- SOAP Notes and Helpful Hints Panel
- Introduction to Radiology
- Radiology Workshop
- Informed Consent tutorial
- EKG tutorial
- Infection Control

**Core Clinical Skills in the Clerkships**

To graduate, all students must take and pass the nine required clerkships: Ambulatory Care, Advanced Medicine, Critical Care, Medicine, Neurology, Obstetrics & Gynecology, Pediatrics, Psychiatry, and Surgery. Within each clerkship, there are specific assessments of clinical skills based upon respective objectives. In all clerkships, students receive feedback so that they may understand and remediate their deficiencies. There are an array of formative and summative assessments, including OSCEs, faculty/resident ratings, papers, oral presentations, direct observation of clinical skills, problem solving of case vignettes, journal clubs, and evaluation of professionalism. Any student who has academic difficulty within a clerkship is discussed at meetings of the Clinical Board on Academic Standing, comprised of all clerkship directors, the Senior Associate Dean for Education and Student Affairs, the Associate Dean for Education, and the Associate Dean for Student Affairs, who chairs the group. At these regularly scheduled meetings, appropriate remediation for students in academic difficulty is determined, an implementation plan developed, and subsequent progress of students monitored.

In nearly all clerkships at most sites students are satisfied that they have sufficient contact with attendings to enable a fair assessment of their knowledge. However, there are sporadic reports of insufficient contact with
attendings from the student perspective. The centrally-designed and –centrally-implemented CCSE ensures that all students acquire the core clinical skills.

**CCSE**
As of June 2005, all rising fourth year medical students are required to pass an eight-station CCSE. Implemented in June 2004, this exam is designed to evaluate student competency in communication, history gathering, physical examination, interpretation of diagnostic tests and clinical reasoning upon completion of the core clinical clerkships.

**Defining the Competencies and Cases**
Over the course of the 2003-2004 academic year, a core team of medical educators with extensive experience in standardized patient (SP) assessment worked closely with the clerkship directors and the Dean’s Office to develop the CCSE. A panel of cases is selected for each yearly CCSE to provide a balanced assessment of competencies representative of all core clerkships.

**CCSE Evaluative Instrument Development and Refinement**
To assess student performance, we developed SP checklists for each case to measure skills in three competency areas: communication, history-gathering, and physical examination. Assessment tools also were developed by our team of medical educators to evaluate the students’ clinical reasoning (synthesis and interpretation) based on interpretation of a diagnostic test or documentation of a patient note. Each year, the cases and checklists are refined based on feedback from pilot sessions prior to implementation within the exam. Each year, the CCSE Coordinator recruits two SPs for each case and makes all efforts to address rater reliability, employing rigorous and standardized methods of training and quality assurance through faculty observation, feedback and coaching of our SPs.

**CCSE Structure and Implementation**
Students participate in the CCSE during the first two weeks of the fourth year of medical school in sixteen half-day sessions (up to 10 students per session). Each year, the School negotiates for clinic space from one of the institution’s teaching hospitals, thereby providing a realistic setting for the exam.

**Debriefing and Satisfaction**
A medical educator from the CCSE team leads a debriefing at the end of each day for all students who participated on that date. Students also complete a post-CCSE survey assessing the acceptability, clinical relevance and perceived educational value of the experience. Generally students report satisfaction with the CCSE as an assessment of their skills and as preparation for the Step 2 – Clinical Skills exam. Students report that the challenge of undifferentiated cases is especially valuable to them.

**Student Evaluation and Feedback**
Students are evaluated based on the standardized checklists as completed by the SPs in each of the 8 stations and the faculty scoring of patient notes, oral presentations, and interpretation of diagnostic tests. Students are provided a confidential, written report of their performance. An overall grade of pass/no credit is given based on each student’s overall results on the CCSE. This grade is included on the student’s transcript. A grade of no credit is given to students falling in the lowest decile in 2 or more competency areas (communications, history, physical examination, clinical reasoning). In addition, students receive a detailed report of their results within each competency area that compares their individual performance to the overall performance of the cohort.

**Remediation**
Students failing the exam are referred for specific remediation. Remediation culminates with a 2-station SP encounter that the student must pass to be considered fully remediated.
**Evaluation of Program Effectiveness**

Performance on National Board Exams Step 2:

That our students have acquired the core clinical skills is evidenced by the pass rates on the Step 2 exams.

**Step 2 – Clinical Skills:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number Examined</th>
<th>Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-2005</td>
<td>165</td>
<td>96%</td>
</tr>
</tbody>
</table>

**Step 2 - Clinical Knowledge:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number Examined</th>
<th>Percent Passing</th>
<th>Mean Total Score</th>
<th>National Mean Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-2005</td>
<td>170</td>
<td>96</td>
<td>222</td>
<td>220</td>
</tr>
<tr>
<td>2003-2004</td>
<td>175</td>
<td>97</td>
<td>222</td>
<td>218</td>
</tr>
<tr>
<td>2002-2003</td>
<td>154</td>
<td>96</td>
<td>220</td>
<td>216</td>
</tr>
</tbody>
</table>

**Resident Evaluation by Program Directors**

A second indicator that confirms adequacy of our system for ensuring acquisition of core clinical skills is the annual evaluation of our graduates by their respective program directors at the end of their PGY1 years. Our graduates are consistently rated higher than or equal to their cohorts in each performance characteristic assessed.

**Limitations**

Limitations of the school’s ability to ensure that the clinical skills of students are appropriately assessed may occasionally surface in the number of faculty available to precept students in certain clerkships and at certain sites within the clerkships. We have a large pool of faculty from which to draw in the assignment of teaching responsibilities. However, increased clinical productivity demands can adversely affect teaching and assessment efforts. To balance these competing requirements of our faculty’s time, we now have clear faculty expectations with regard to teaching stipulated in the Report of the Committee on Expectations Regarding Teaching. Furthermore, with the implementation of the CCSE, we have created a rigorous, centralized, evaluation system to ensure student clinical skills proficiency regardless of incidental lapses in the system.

There are some limitations to evaluating students’ clinical skills via OSCEs and simulated patients imposed by lack of a formal Clinical Skills Center facility in which to conduct the CCSE and other clinical skills exams. We conduct formative and summative OSCEs and the CCSE by setting up and breaking down in borrowed, non-dedicated sites throughout the campus on an ad hoc basis.

**Recommendations**

- Continue efforts to increase the level of engagement of all clinical faculty in the teaching and assessment of knowledge, skills and professionalism throughout all four years of the educational program.
- Establish a Clinical Skills Center for actual and simulated patient encounters and scenario training that can be used for learning and assessment of achievement of pertinent educational objectives across all four years of the undergraduate medical education program, as well as in graduate and postgraduate medical education.
D. Curriculum Management
Mechanisms and Assessment of Adequacy

Curriculum Committee
The Curriculum Committee of the School of Medicine directly assumes institutional responsibility for the curriculum and provides global oversight of the educational program. This integrated body includes members of the faculty, administration, and student body in proportions appropriate to assure wide understanding of the issues and objectives at hand, flexibility, a lack of bias, and full representation across the institution, in order to achieve the school’s overall educational objectives.

The Curriculum Committee provides this service in the larger framework of oversight for education, as headed by the Dean’s Office. The Curriculum Committee, charged by Dean Glickman, works in the best interests of the institution without regard for parochial or political influences, or departmental pressures. The purpose of the Curriculum Committee is to both prospectively and retrospectively evaluate the curriculum of the School. The objective of the Committee’s work is to ensure a coherent and coordinated curriculum for the MD degree. The curriculum is continuously monitored (see Current Methods of Curriculum Review) to ensure that gaps and unwanted redundancies do not occur. Additionally, the Committee is responsible for making recommendations to the Dean on opportunities to improve the curriculum. Of note, however, no formally documented charge for the Curriculum Committee (e.g., bylaws or written mandate from the Dean) could be identified.

The OME, under the Senior Associate Dean for Education and Student Affairs and directed by the Associate Dean for Education, is intimately involved in curriculum design, implementation, and evaluation. The OME meets three times monthly with the preclinical module directors, clerkship directors, and in joint meeting with both to assure vertical coherence, integration and attainment of educational objectives across the four years of the program for the MD degree. The workings of these groups are forwarded directly to the Curriculum Committee for review as needed.

There are two subcommittees of the Curriculum Committee which report through the Senior Associate Dean for Education and Student Affairs: 1) Basic Science Module Directors and Students Subcommittee; 2) Clinical Science Clerkship Directors and Students Subcommittee. Both subcommittees serve as a direct line of communication between students and the module and clerkship directors, and provide ongoing feedback and a venue for rapid identification and remediation of issues that arise while the modules and clerkships are in progress. These subcommittees report periodically to the Curriculum Committee on the quality of the modules and clerkships and communicate, through the Student Caucus organized by the Student Council, broadly to the medical student community. Each committee is composed of the module or clerkship directors, respectively, the course or clerkship student liaisons, and the Senior Associate Dean for Education and Student Affairs.

Composition of the Curriculum Committee
Membership on the Curriculum Committee is designed to offer depth and breadth of expertise in curricular design, pedagogy, and evaluation methods. The current Curriculum Committee is co-chaired by Benard Dreyer, MD and Melvin Rosenfeld, PhD. Dr. Dreyer is Vice Chair of the Department of Pediatrics and Dr. Rosenfeld is Co-Director of the Foundation for Medicine module. The composition of the body of the Curriculum Committee ensures representation from the module, unit, and clerkship directors, members of the Graduate Medical Education (GME) office, clinical affiliates, student body, Dean’s Office, and two to three individuals who are not directly involved in the daily instruction of students in elements of the core curriculum. The Committee membership and the appointment of the Chairs are approved by the Dean.

In addition to the co-chairs, the Curriculum Committee Roster includes:
  Michael Postow, Medical Student, Class of 2007
  Bruce Bogart, PhD, Module Director
  Carol Bernstein, MD, Associate Dean for Graduate Medical Education
Current Methods of Curriculum Review

Individual modules and clerkships are regularly and systematically reviewed through obtaining formal student feedback, faculty feedback and analysis of student performance on standardized examinations, performance-based assessments, and other modalities.

Student Feedback

The Dean’s Office and Curriculum Committee rely extensively on students’ feedback about the educational program. An improvement to the methods of curriculum review since the last LCME accreditation has been the development of standardized, online module and clerkship evaluations to collect student feedback. Students are expected to complete online evaluations of each unit/module and clerkship, which are then received and analyzed by OME. This allows for the production of detailed and timely reports (at the end of each module for preclinical years, at mid-year and end-of-year for clerkships) which are forwarded to course and clerkship directors and to the chairs of the departments collaborating to deliver these integrated elements of the curriculum. Such reports allow course and clerkship directors to identify both strengths and weaknesses, look at trends over time, and make comparisons to other relevant courses. Any required course or clerkship that receives an overall satisfaction rating of $\leq 4$ (on a 7-point scale) is automatically referred to the Curriculum Committee and given the opportunity to present the educational issues surrounding the satisfaction rating. OME troubleshoots any weakness in the curriculum noted either within or across modules or clerkships and works with individual directors or with a group of directors, respectively, to modify or create new curricular elements to correct those weaknesses.

In addition to these standardized course evaluations from the dean’s office, each course/module has a Student Course Liaison, appointed by Student Council, whose function is to provide in-the-moment feedback to unit/module directors and to clerkship directors concerning issues of content and logistics. Student Liaisons allow module and clerkship directors to learn, in a timely fashion, when students require further clarification.
on an aspect of the curriculum. Importantly, students are active members on the Curriculum Committee as well as of the Basic Science and Clinical Science Curriculum subcommittees.

Faculty Feedback
Faculty input regarding curriculum is highly regarded and actively sought by the Curriculum Committee and Dean’s Office. Module and clerkship directors communicate frequently with one another and with the Dean’s Office about the curriculum during both regularly scheduled monthly meetings and in intensive, working sessions to plan and monitor courses (as during the development of the modular system currently in place, in which different disciplines worked together to develop an integrated curriculum and reduce redundancies).

AAMC Questionnaires
The Dean’s Office continues to carefully analyze the AAMC Matriculation and Graduation Questionnaires to look for additional indicators from our students which can help us identify and evaluate the strengths and any potential weaknesses of our program. These data are statistically analyzed, tracked over time and shared with appropriate constituencies.

Student Examination Scores
Student scores on written exams (e.g., shelf exam scores for clerkships) and performance-based assessments (e.g., the newly instituted CCSE) used by unit/module and clerkship directors not only to assess individual student performance, but to assess the curriculum by looking at overall class results. For example, clerkship directors can receive a breakdown of results of overall student performance on their relevant shelf exam, comparing how the students as a group compared to the national mean on specific components of the curriculum (e.g., the pediatric shelf reports include separate results on development, prevention, neonatology, etc.). Overall student results on the CCSE are reported on a yearly basis to the Curriculum Committee and clerkship directors, allowing the committees to identify strengths and weaknesses of the clinical skills of the class as a whole and sparking discussion of curricular change to address areas where class skill level is below the committees’ expectations.

Monitoring of Gaps and Unwanted Redundancies
Through the development of the new modular system for Years One and Two, basic science faculty members across disciplines continue to work together to develop and monitor integrated curricula based on organ systems. Module directors meet at least monthly with the Senior Associate Dean for Education and Student Affairs, Associate Dean for Education and the Curriculum Coordinator to address both interdisciplinary curricular content and exam content. This approach has reduced unwanted redundancies and fostered systematic reinforcement through planned redundancies and upward spiraling of complex concepts. Redundancies in exams have been reduced through the creation of a centralized exam-item database. In addition, the faculty has collaborated on the creation of many core clinical cases which are utilized to create both the interdisciplinary curriculum as well as summative and formative assessment items.

While the Curriculum Committee actively seeks gaps and redundancies through the above methods of curriculum review, the School does not yet have a searchable curriculum database management tool to more efficiently and effectively search for gaps and redundancies throughout the entire curriculum. The School of Medicine utilizes CurrMIT only minimally. The OME has identified the need for a Curriculum Management database to the Education Committee and has been working with AES, Medical Center IT, and the Library to identify and implement or build a system that would suit our needs. The OME, AES and the Library have recently identified tools at various other medical schools to be evaluated for potential collaborative use at NYU. It is clear that such a tool would offer great advantages to the School in the area of curriculum management.

Resources and Authority of the Chief Academic Officer
Dean Robert Glickman is the Chief Academic Officer at the NYU School of Medicine, delegating operational responsibility for curriculum oversight to Steven Abramson, MD, Vice Dean for Education,
Faculty & Academic Affairs and Veronica Catanese, MD, Senior Associate Dean for Education and Student Affairs.

In their endeavor to design and manage the educational program at the School of Medicine, these deans are supported by a large and diverse staff of highly trained faculty. Evidence of the faculty’s commitment to teaching is noted by the Faculty Council’s recent endorsement of the Report of the Committee on Expectations Regarding Teaching. This report states that an appointment at the School of Medicine requires teaching as part of one’s career, and that advancement requires a dedication to excellent, effective teaching in the context of a research university. Full-time members of the faculty are expected to contribute at least 50 hours per year to teaching activities if so requested by their Chairs. Members of the voluntary faculty are expected to contribute at least 20 hours per year to teaching activities if so requested by their Chairs. To facilitate the documentation of such teaching, the School is currently developing a web-based Teaching Record.

While the Dean’s Office is committed to securing appropriate resources to assure the effective delivery of the educational program, limitation of physical space is an ongoing and challenging problem to address. For example, the School has a very active performance-based assessment program throughout the four years of medical school, but there is no space specifically allocated to administering such exams at the current time. The CCSE alone requires the use of ten exam rooms, several small conference rooms and administrative space in close proximity for eight full days over a two week period. While the Dean’s Office has committed to developing a state-of-the-art Clinical Skills Assessment Lab/Center including adequate space for performance-based assessments, movement on the project has been stalled due to the inability as of yet to identify adequate space and financing for such a center.

There are some areas in support and services that also still need to be addressed. IT support will need to be expanded given the many curricular endeavors, both in teaching and assessment, which are currently under development. Finally, the administration of some required educational programs has been supported in part by funding from educational grants which are limited in their duration. The School must continue, as it has done to date, to plan forward to ensure that such successful programs will be “institutionalized” and supported by the Dean’s Office.

Recommendations
- Articulate a formal, documented charge to the Curriculum Committee from the Dean of the School of Medicine.
- Identify and implement a more robust curricular management system.

Effectiveness of Curriculum Planning
The current curriculum follows the blueprint established by the Task Force on Curriculum Policy 2001. This curriculum was the product of an 18-month effort, headed by Steven Abramson, M.D., then Vice Dean for Education and now Vice Dean for Education, Faculty & Academic Affairs that involved members of the Dean’s Office, basic and clinical science faculty and students. Please see [http://endeavor.med.nyu.edu/curriculum/TaskForceReport.html](http://endeavor.med.nyu.edu/curriculum/TaskForceReport.html) for further information. Curriculum 2001 was subsequently endorsed by the Curriculum Committee, the Council of Chairs, the faculty and the Dean. It was implemented under the direct guidance of the current Senior Associate Dean for Education and Student Affairs, Veronica Catanese, M.D.

Curriculum Design
In the preclinical courses, units and module directors develop and refine specific learning objectives and plan curricular events four to six months before the start of each module; they do so in conjunction with the Senior Associate Dean for Education and Student Affairs, Associate Dean for Education, Curriculum Coordinator and the co-chair of Curriculum Committee. A similar process is used for assuring articulation, communication and monitoring of achievement of learning objectives in each of the core clinical clerkships;
the Senior Associate Dean for Education and Student Affairs, Associate Dean for Education, Curriculum Coordinator and the co-chair of the Curriculum Committee collaborate with the clerkship directors to achieve these goals. As stated above, there are, at minimum, monthly meetings of each of these groups and, most recently, a monthly joint meeting of both groups. Often, in periods of new initiatives, such as development of new cross-disciplinary exercises in the preclinical modular curriculum, implementation of the standardized, online clerkship assessment program, development of the clerkship orientation program, and inauguration of the CCSE, biweekly meetings are held. Through their faculty members who lead the modules, department chairs remain engaged in and accountable for content of both the preclinical (interdepartmental) and clinical (departmental) curricular elements.

Role of the Curriculum Committee
The Curriculum Committee plays a key role in reviewing the effectiveness of the current curricular program, assessing the need for both reactive and proactive curricular change, and monitoring the success of the implementation plans for all aspects of a dynamic curriculum within the context of the mission, goals and objectives of the School of Medicine. Each year, the evaluation data from all preclinical modules and clerkships are presented to the Curriculum Committee by the Associate Dean for Education. All units, modules or clerkships which receive an overall satisfaction score on student evaluations of 4 or below on a 7-point scale are examined in depth by the Curriculum Committee. In conjunction with the OME, the Curriculum Committee designs a specific plan for addressing the deficiency, and receives at least biannual progress reports on the problem area until the deficiency is corrected.

Additions to and deletions from the curriculum, changes in learning objectives, and/or changes in the methods of student assessment require formal presentation to, and approval by, the Curriculum Committee. With the adoption and implementation of Curriculum 2001, the School established formal guidelines which place an upper limit on average weekly contact time, daily lecture hours, and number of weekly conferences that require student preparation. These guidelines inform curriculum planning in the working sessions of the preclinical module directors as well as the clerkship directors. As a result, all proposals to the Curriculum Committee for additions to the curriculum also incorporate suggestions for curricular content that, given the dynamic face of biomedical science, might be eliminated. In this way, both the Curriculum Committee and the working groups of curricular leaders assure that students have sufficient time for learning.

Evaluation of Curriculum Planning Effectiveness
The effectiveness of the curriculum planning process is evaluated in several ways.

- Performance of students on in-house and national examinations is one standardized metric.
- Longitudinal data on student preparedness shared by the OME horizontally across modules, vertically across all four years of the undergraduate medical program, and with the Curriculum Committee is another powerful method for judging effectiveness of the curriculum in providing the requisite training.
- Student assessment and critiques of the modules and clerkships are important measures of curricular planning success. This assessment is achieved through a robust ‘in house’ evaluation system, monthly meetings of the Basic Science and Clinical Science Student Subcommittees of the Curriculum Committee, the annual AAMC GQ, and the annual residency program directors’ assessments of our graduates.
- The Associate Dean for Education prepares and provides extensive data and data analysis (the “metrics”) on each module or clerkship, as well as target evaluation of new initiatives, to the directors of each unit within the module, the relevant clerkship directors, and the chairs of the involved departments.

Effectiveness of Procedures for Rectifying Identified Problems
The previous discussion suggests that the process of identifying problems in the curriculum in general, and in individual modules or clerkships in particular, is robust and efficient; the procedures for rectifying those identified problems, in turn, are quite effective. That effectiveness is readily demonstrated by noting both additions and modifications to modules and clerkships successfully implemented in the curriculum in
response to problems identified by the Curriculum Committee, and by tracking trends in the assessments of such curricular additions/modifications over time. Two examples, one drawn from the preclinical curriculum and the other from the clinical curriculum, illustrate the effectiveness of the process for rectifying identified problems.

**Preclinical Curriculum**
The successful implementation of the new integrated Curriculum 2001 is one of the best examples of a positive change in the curriculum in response to the first major issue outlined above. Twelve multidisciplinary and interdisciplinary modules were created, applying both vertical and horizontal integration. Success in this endeavor can be demonstrated by review of both the favorable student ratings after these revisions as well as the continued excellence in performance of our students on the USMLE Step 1 examination.

An example of successful identification and rectification of deficiencies in a specific unit within a module is the recent process by which problems of leadership and educational quality in the Immunology unit were addressed and corrected. Based upon data provided to the Curriculum Committee by the OME, the Committee recommended that the then new Chair of Pathology and the Senior Associate Dean for Education and Student Affairs co-chair a subcommittee to analyze the problems and propose a strategy and plan for addressing them. In response to the recommendations of this subcommittee, changes were approved by the Curriculum Committee and Dean, and then implemented. The effect was dramatically positive, as reflected both by improved quantitative evaluation scores (e.g., overall satisfaction rose from 3.1 in 2003-2004 to 6.5 in 2004-2005) and qualitative statements on the strengths and weaknesses of the unit.

**Clinical Curriculum**
One of the challenges identified by the Curriculum Committee in conjunction with the OME over the interval between the last institutional self-study and the current one was insufficient preparation of students for smooth and seamless entrance into clinical training. In response to this deficiency and to the charge from the Curriculum Committee to address it, the Clerkship Orientation program, a core, required, two-week element of the curriculum for rising third year students, was designed and implemented in June 2002 for the Class of 2004. Over the prior nine-month period, all of the clerkship directors met at three to four-week intervals with the Senior Associate Dean for Education and Student Affairs, Associate Dean for Education and the Curriculum Coordinator to develop the goals, objectives, strategies and implementation plan for the required, two-week Clerkship Orientation for rising third year students. As with any other addition to the curriculum, the plan was presented to and approved by the Curriculum Committee before inauguration. Student feedback on the orientation is reviewed on an annual basis by the clerkship directors, OME and the Curriculum Committee, and modifications are made each year on an ongoing basis. The effectiveness of this iterative process is demonstrated by the positive student feedback (see 5-point scale below) and by highly favorable knowledge, skills and professionalism ratings of our third and fourth year students by their clerkship faculty preceptors and teaching residents.
Curriculum Planning Participation and Resources

The Curriculum Committee, working with the Dean, works to ensure appropriate participation in curriculum oversight and planning at the policy level. Curriculum planning requires integration both across the four years of medical school and among different, concurrent educational modules. The composition of the Curriculum Committee is designed to offer depth and breadth of expertise in curricular design, pedagogy, and evaluation methods. Horizontal and vertical curriculum development and implementation are coordinated through three monthly meetings: one each of the preclinical module directors, clerkship directors, and a joint meeting of both groups charged with achieving the School’s educational program objectives. Each working group is led by the Senior Associate Dean for Education and Student Affairs, who directly ensures implementation of changes and innovations endorsed by the Curriculum Committee. The School’s commitment of resources to curricular planning is embodied in its provision of the central resources in the OME, including those of AES’s “R&D” group and the Medical Education and Technology Program. In combination, these resources of the OME provide leadership in curricular planning, design, innovation, implementation and evaluation. Other resources directly provided by the School include those in support of curriculum coordination across all four years of the integrated curriculum. This three person group, led by Eileen Cahill, MPA, is responsible for working directly with preclinical module directors, maintaining the curriculum management system, calendaring and scheduling all preclinical curricular elements and the Advanced Science selectives, creating and maintaining a robust summative and formative database of examination materials, and supporting collection and interpretation of data on curricular evaluation. In addition, the Dean’s Office and the departments provide financial support for an administrator for each core
clerkship, and OME meets monthly with those clerkship administrators to ensure efficient and effective utilization of the web-based student assessment system and assist in creation and resource identification for each clerkship’s website.

**Providing Sufficient Time for Learning**
Three methods are used to ensure that students have sufficient time for learning:

1. Guidelines for the amount of contact time, as well as the number of conferences requiring student preparation, per week
2. Student feedback
3. Student performance

**Study Time Guidelines**
The School maintains its dedication to providing opportunities for active learning and significant quantities of unscheduled time to prepare for classes and assimilate new material. Even before the last LCME self-study, the Curriculum Committee endorsed the guidelines of no more than an average of 20 hours/week of in-class time and no more than three weekly conferences for which student preparation is required. This both limits the amount of new material presented and provides students with ample out-of-class study time. The Curriculum Committee acts through the OME and specifically the Curriculum Coordinator, who works with the module directors to design the weekly schedules and, in so doing, monitors weekly class hours. Because all proposals for additions to the curriculum require a comprehensive proposal that includes analysis of the effect of the new curriculum on contact time, the Curriculum Committee is critically involved in assuring that students have sufficient time for learning. Currently, first year students average 21 scheduled in-class hours per week, and second year students average 17 scheduled in-class hours.

Beyond the daily non-class hours available for studying, module directors also frequently incorporate supplemental study time during pre-examinations periods in their curriculum planning and scheduling.

**Student Feedback**
The Curriculum Committee also uses student feedback as a means of assuring that students have sufficient time for active learning and study. Student leaders provide direct feedback to the Curriculum Committee, module leaders and clerkship directors through representation on the Curriculum Committee, Preclinical and Clinical Student/Faculty Subcommittees of the Curriculum Committee, and through service as Student Course and Clerkship Liaisons. Student Course Liaisons are selected through an application process coordinated by Student Council at the beginning of the school year. Their responsibilities are to communicate frequently with module directors to provide in the moment feedback concerning issues of course logistics and content and to relay responses back to students in a timely fashion. In some modules, the directors meet monthly for lunch with an even broader group of interested students; this forum provides an additional mechanism for concurrent feedback regarding “in progress” curriculum.

**Student Performance**
Student performance is another marker of the sufficiency of time dedicated to learning. Unit and module directors meet regularly to review aggregate student performance on exams and other assessments. Data on aggregate student performance are used to identify areas of the curriculum which require more attention and learning time; the data also provide an overall indication of whether students have sufficient time allotted for learning the material assessed. The consistently high performance of students on unit and module examinations, OSCEs, and standardized assessments such as the clinical shelf examinations and the USMLE comprehensive examinations supports the conclusion that students have sufficient time for learning.

**Workload and Balance Between Education and Service in the Clinical Years**
Clerkship directors design the structures and schedules of the individual clerkships to maximize the balance between patient-based and formal teaching. The clerkship directors also specifically define the type (actual, virtual or vignette-based) and quantity of patient encounters (actual, virtual, or vignette-based) necessary to fulfill the stated objectives of each clerkship; students keep a log of these encounters.
Workload and the balance between education and service in the clinical years are monitored through the clerkship evaluations completed by the students, direct feedback to the clerkship directors through the Clinical Science Student and Faculty Subcommittee of the Curriculum Committee, and direct feedback obtained at “end-of-clerkship,” debriefing luncheons in many clerkships. On the formal clerkship evaluations coordinated by the OME, students are asked specifically if they are “required to perform inappropriate/disproportionate ancillary services.” These evaluations are reviewed by the OME and the clerkship directors. The School applies the following guideline for assessing whether ancillary services performed during clerkship activities are acceptable or not. Although it acknowledges that service to the medical team improves the learning environment, the School considers a pattern of activities which are non-educational or assignment of a disproportionate share of the non-educational clinical activities to students as not acceptable.

**Formal Teaching During the Clinical Clerkships**

Each of the clerkships has a defined core curriculum and a program of core lectures and preceptor or tutorial small group conference and bedside teaching rounds that form the structural framework upon which continual, in-the-moment teaching and learning also occur. Formal teaching ranges from 5-8 hours/week in clerkships such as Psychiatry, Ambulatory Care, and Surgery, and averages between 10-15 hours/week in the other core clerkships. Because of the nature of the Advanced Medicine clerkship and its direct relationship with the residency training program in Medicine, a student’s formal, didactic educational experience may vary according to both clerkship site and clerkship timing. In the Critical Care clerkship, in which students gain clinical experience in acute medical care in the Medical, Neonatal, Pediatric, Surgical or Coronary Care units or in the Emergency Department, this issue is addressed by a shared core curriculum across sites; most recently, the leadership of the Critical Care clerkship has been working under the guidance of OME to develop core “simulation exercises” to ensure equivalent experience and attainment of clerkship goals and objectives. Whether such an innovative approach would enhance the educational experience still further in the highly successful Advanced Medicine clerkship should be fully explored.

**E. Evaluation of Program Effectiveness**

**Evidence for Achievement of Institutional Objectives**

The School of Medicine believes that its institutional educational objectives are achieved by its medical students. Evidence supporting that conclusion includes:

1) Performance on USMLE Step I and II licensing examinations
2) Performance on internal NYUSoM evaluations and examinations
3) Graduation rates
4) Acceptance into national highly-ranked residency programs
5) Evaluation of NYUSoM graduates during the first year of their postgraduate training by residency program directors

**USMLE Step I and II Examinations**

Review of student performance on the USMLE Part I and Part II exams shows that on Part I, our students have averaged a mean score of 228.3 ± 18.0 over the last seven years (1999-2005) as compared to a national mean score of 215.9 ± 23.4, or about 13 points higher for the School cohort. In some years the performance of the School cohort of students exceeded that of the U.S. mean by nearly one-half of a standard deviation. Over the seven years, the passing rate for the School of Medicine was 98.3% vs. 91.9% for the national cohort, a difference of about 6 percentage points. The performance on Step II is comparable, with a School, seven-year student average of 220.4 ± 22.4 compared to the national average of 215.4 ± 23.3. The passing rate for Step II for our students over that time period was 97.4%, whereas the national passing rate was 95%.

Analysis of these data shows that while our student performance is better than that of the national cohort, the difference is less significant for Step II than for Step I, and the passing percentages are less divergent for Step II than for I. Of note is that while the national scores remain stable at 215, the mean Step I score for the...
School of 228.3 falls to a mean of 220.4 on Step II. One possible explanation for the lower relative performance on Step II than on Step I by our students is that taking or passing the USLME exams had never been a requirement for promotion or graduation at the School of Medicine. Although students, with rare exceptions, did take Step I at the end of the second medical school year and before the third year clerkships, many did not take Part II in as timely a manner. Between the time of the last LCME visit and prior to the 2004-2005 academic year, students could complete what are now required third year clerkships up until December of their fourth year of medical school. Since 2004 (with the Class of 2006), all medical students complete their core rotations in Medicine, Surgery, Pediatrics, Ob/Gyn, Psychiatry and Neurology during their third year. Review of the Step II examination dates of the 30 students who failed the exam over the last seven years reveals that 8 of them sat for the exam after graduation, of the other 22, 20 took the exam in the spring semester of their fourth year. Thus, of the 30 failing students, only 2 of them sat for the Step II exam in what might be considered a timely manner, (i.e., shortly after the end of the core clerkship-intensive third year). The School now strongly expects students to take Step I before beginning their clerkships and advises them to take Step II early in the beginning of the 4th Year. Students are required to take both Step I and Step II of the USMLE Licensing Examinations prior to graduation; at the present time, passing grades are not required for promotion and graduation.

Evaluation, Examinations and Graduation Rate
Review of students’ academic performances on evaluations and examinations during the clinical clerkships shows that over the last seven years (Classes of 2001 to 2007) no more than 10% of our students experienced some academic difficulty in any one year. The range was from 5 to 17 students in a class of about 160 students each year. About half of these students also had had some degree of academic difficulty in the preclinical years, and this may represent concordant information that identifies the students at the bottom of the class. These students’ performances were consistently below average across clerkships. The other half of the students demonstrated difficulties during their first clerkships.

Remediation when necessary has taken the form of repetition of part or all of a clerkship under closer supervision by a senior faculty member or in a specialized setting that lends itself to better observation and guidance. Over the last five years at NYUSoM, only two students have not graduated as a result of academic difficulties in the clinical years.

Residency Program Acceptance
Students over the years have generally matched very well in high-quality training programs of their specialty choice. Such outstanding matches have been particularly common in the last five years, with NYU students matching into the top-rated programs (as determined by the ranking of their affiliated medical schools in U.S. News and World Report) with the following percentages: 61% (Class of 2003), 80% (Class of 2004), 67% (Class of 2005), and 79% (Class of 2006).

Residency Program Director Evaluations
Review of evaluations of our graduates by the directors of their residency programs shows that our graduates exceed the performance of their fellow, non-NYU graduates by every measured and reported criterion – the smallest difference being in the area of “factual knowledge.” Such minor discrepancy in just one area may not merit further consideration, but their observation will be considered by the Curriculum Committee as it addresses one of its prime agenda items this year – a formal, deep assessment of how our medical students learn and how we would like them to learn in an era of rapid, pervasive, technological advancement.

Recommendations
- The expectations that students take Step I and Step II of the USMLE should be strengthened and continually reinforced. The School of Medicine should study whether or not to institute a formal policy requiring students to take Step I before beginning their third year clerkships and Step II before application for residency.
Patient Resources and Clinical Settings

The clinical learning objectives of the School of Medicine are abundantly met by the clinical settings and patient resources available to its medical students during their clinical years. NYU’s main teaching hospital for both inpatient and outpatient experiences is Bellevue Hospital Center. Bellevue, the flagship hospital of the New York City Health and Hospitals Corporation, is internationally renowned for its clinical excellence, as well as for the diversity of its patients measured by several criteria, including their race, ethnicity, and the great variety of their presenting illnesses. Bellevue is the oldest hospital in the United States and, at present, the largest, single-building hospital in the country. Each of Bellevue’s inpatient floors has adequate space for the teaching and learning of clinical medicine, with a large conference room and four smaller seminar rooms per floor. A library, which offers mainly current issues of clinical journals, supplements the materials available at the main library of the School. A new, five-story, I.M. Pei-designed, outpatient services facility has greatly enhanced the clinical experience of the School of Medicine students. The new building will increase the number of annual outpatient visits, which have exceeded one half million over the last decade and, in 2005, totaled approximately 550,000. There also are about 65,000 emergency room visits per year, or about 180 individual visits per day. Attesting to the diversity of the emergency department patients is the fact that on any given month about 80 different languages are spoken by those seeking emergency medical aid. Bellevue also has a large inpatient population available to School of Medicine students during their clinical years. A total of 827 beds have an average occupancy rate of 85%, with a total number of annual admissions of about 27,000 patients, who then have an average length of stay of seven days.

The university hospital is Tisch Hospital, where the clinical year students also rotate. In quantitative terms, its inpatient resources are similar to those of Bellevue with about 800 beds, an average occupancy rate of 85%, and an average length of stay approaching seven days. There are approximately 30,000 emergency room visits per year. Tisch Hospital has one large conference room and two smaller conference rooms on almost every floor which are available to clinical students and faculty for meetings and discussion of inpatient cases. Adjacent and readily available to the students are the learning and teaching facilities of the medical school itself. The conference and seminar rooms of the Skirball Institute are just a short walk and a quick elevator ride from Tisch Hospital.

Also available to the 3rd Year clerks and to the 4th Year students on electives are the VA Hospital on the NYU campus, as well as North Shore-LIJ on Long Island and Lenox Hill Hospital, forty city blocks from the campus and easily accessible by public transportation. On average, NYU medical students spend 60% of their overall clerkship time at Bellevue, 30% at Tisch and about 10% at affiliated institutions. The patient populations differ at each of these institutions, resulting in an extremely wide array of clinical experiences for the students. Of great value to the students’ appreciation of varied health systems is the presence within one campus of private (Tisch), public (Bellevue) and federal (VA) hospital centers.

In addition to the abundant patient resources and clinical settings there is a wealth of clinical faculty available to teach our students during their clinical years. The cadre of full-time and voluntary clinical faculty of the School is nearly 5,000. The clinical faculty teaches in formal daily attending rounds, special weekly conferences such as Grand Rounds and Journal Club meetings, as well as in specialty rounds, conferences, and in one-on-one preceptor or mentor sessions. Faculty members also teach in formal monthly electives in subspecialty areas and in structured, individual preceptorships with explicit learning goals and objectives. In addition, students avail themselves of the many opportunities for direct learning alongside faculty members through clinical research electives, as well as through less formal, mentored observerships throughout the four years of their training.

Utilization of Information in the Evaluation and Educational Quality Improvement Process

Information about NYU students and graduates is extensively and continually used to evaluate and improve the educational program. Some of this information is described in prior sections of this report, particularly those that address the evidence that institutional educational objectives are being achieved by our students. USMLE and shelf examination subject scores, academic progress, graduation rates, residency program acceptance patterns, and evaluation of our graduates by their residency program directors are regularly and
robustly analyzed by the OME. The results of and conclusions derived from these analyses are continuously and systematically shared with the Curriculum Committee, module and clerkship directors, relevant departments chairs and the Dean, and they are used to improve the educational program.

Evaluation Program
Moreover, the School of Medicine uses information from its students and graduates to evaluate and improve the educational program. Over the last six years, the OME has developed and centralized a valid and reproducible evaluation program of both the preclinical basic science modules and the clinical clerkships. Overall satisfaction scores and student evaluation (both quantitative and qualitative) of specific educational and skill generating items for each clerkship are assessed. Comparisons are made between the clerkships and also across sites within clerkships in a longitudinal fashion over the years. This internal feedback from the School of Medicine students is used to constantly improve the educational program.

AAMC Graduation Questionnaire (GQ)
OME also uses the results of the individual school report of the annual AAMC GQ to evaluate and improve the educational program. The AAMC GQ compares our students’ educational program evaluation responses to those of students in the other U.S. medical schools. The statistical validity of the NYU data is particularly notable because over 90% of each of our graduating class fills out the questionnaire, one of the highest percentages of any medical student body in the country. In general, the School of Medicine’s students’ responses are “better” than that of the national cohort responses in any given year. Also, in general, over a three-year intra-School comparison, there has been an improvement in most items and in most clerkships. The OME carefully analyzes the patterns of responses and acts accordingly to improve the educational program; as always, this process involves direct participation of the module and unit faculty, creation of a strategic implementation plan, and presentation to and endorsement of that plan by the Curriculum Committee. Specific examples of how information derived from the AAMC GQ has driven successful curricular change are provided elsewhere in this report.

III. Report of the Medical Students Committee
The Medical Students Committee first met in November 2005 and was charged by Veronica Catanese, MD, LCME Institutional Study Task Force Chair, with the task of assessing student life at the School of Medicine. Specifically, the Committee was directed to analyze the admissions process including financial aid, diversity within the School of Medicine community, student services, student well-being, and the learning environment, including infrastructure and the mechanisms in place to ensure that students receive an outstanding education. In addition to addressing these charges, the Medical Students Committee decided to work closely with the Student Caucus (described below) to ensure that student opinions were accurately represented throughout the LCME process.

The Committee met monthly from November 2005 until June 2006, generally meeting for one hour each time. The Committee divided into pairs comprised of a student and a faculty member or administrator to research and evaluate how the School fulfills the standards of the Medical Student charges of the LCME. These pairs met independently of the Committee and presented their research and findings to the group as a whole for lively discussion and debate of the issues. The information each pair utilized in analyzing their respective charges varied; however, each pair used information in the LCME database, the report of the 2000 LCME self-study (and, when necessary, the report of the 1993 LCME self-study), the 2006 LCME Student Survey, AAMC GQ from 2000 to 2005, discussions with students who were part of the LCME Student Caucus, and other information as noted in the report.

The Medical Students Committee worked closely with the LCME Student Caucus, a group of students that organized and oversaw the execution of the LCME Student Survey. The Caucus was comprised of all student members of all LCME committees and other interested students. All meetings of the Student Caucus were publicized to the school via e-mail and via the Student Portal and were open to the entire student body.
The results of the LCME Student Survey and the discussions of the LCME Student Caucus were shared with the Medical Students Committee and with all other LCME committees, both in a formal analysis of the Survey and through student representation on the committees in an attempt to ensure that the student voice was heard throughout the LCME self-study.

A. Admissions
The Admissions Process
In the 2004-2005 admissions cycle, the School of Medicine switched from an independent application system to the AMCAS program. The requirements for admission have not changed and are fully available to applicants and matriculants. The number of applicants has more than doubled since the introduction of AMCAS (see database), and the percentage of applicants accepted has decreased proportionately. The ratio of accepted applicants to matriculants has remained steady at 34% and the quality of matriculants, as reflected in GPA and MCAT scores, has remained exceptionally strong (average GPA 3.73; average MCAT 33Q).

In assessing student satisfaction with the application and admissions process, the Committee utilized information from the 2006 LCME Student Survey. Looking retrospectively, the following graphs derived from the LCME Student Survey show that the overwhelming majority of students reported having a positive interaction with their admissions interviewer.

It is worth noting that students, by a margin of 60% to 40%, felt that they should play a larger role in the Admissions process. When asked what role students envisioned themselves playing in the admissions process, the following responses were generated.

According to the Associate Dean for Admissions and Financial Aid, students in the past did play a larger role in the admissions process (i.e., interviewing applicants); however, due to inevitable scheduling conflicts student interviewers found it difficult to participate consistently in the admissions process. The Associate Dean for Admissions and Financial Aid was excited to hear that students wanted to be more involved and is willing to work with the student body to find new ways to incorporate students into the admissions process.
In addition, the Committee reviewed all publications created and disseminated by the Admissions Office, including the technical standards for admission of applicants with disabilities, the catalog and all materials available to prospective students. The information is available online and in the School of Medicine Applicant Information Booklet. The Committee found that all LCME standards are upheld by the admissions publications.

Recommendations

- Form a working group to examine ways to expand the current role of medical students in the admissions process.
- Ensure that the newly-created technical standards for admission of handicapped applicants are published in all admissions literature and are available on the Admissions website.

Students and Available Resources

Before analyzing whether or not resources were adequate, the Committee examined the trends regarding the number of students in the 1st Year class, the entire medical student body, the masters and doctoral program candidates, the number of residents and fellows and the number of visiting students taking courses at NYU. The Committee found that, while the number of 1st Year students has remained relatively constant at about 160, the total number of students, the number of doctoral candidates and the number of residents and fellows have all increased slightly in the past several years. The number of visiting students has fluctuated, but not significantly.

Faculty

The data on the number of faculty members in each department provided in the database were reviewed. In total, the NYUSoM employs 1030 full-time, 265 part-time faculty and 3222 voluntary faculty, representing a variety of academic fields. With a faculty:student ratio of approximately 2:1, there appears to be a sufficiently large number of faculty members to provide instruction to medical students throughout the four years. However, the difficulty in assessing whether or not there is sufficient faculty instruction stems from the fact that it is extremely difficult to ascertain how many hours are devoted to medical student education by each member of the faculty. It is important to note, however, that the recently adopted Report of the Committee on Expectations Regarding Teaching requires each full-time faculty member to spend 50 hours minimum and each voluntary faculty member to spend 20 hours minimum on teaching activities annually, if so requested by the chair of his department.

Furthermore, as part of LCME Student Survey, students were asked to rank the accessibility of faculty members during the preclinical program and the clinical program. Answer options ranged from 1- Unacceptable to 5- Excellent. The mean for preclinical years was 3.95, with a standard deviation of 0.82. Of the respondents, 96% ranked faculty accessibility at “Average” or above. For the clinical years, the mean was 3.65 with a standard deviation of 0.80, with 92% of the respondents ranking faculty accessibility during clinical years at “Average” or above. While students were given an option to comment on any issue during the preclinical and clinical years, there were no comments directly addressing faculty availability. The above data suggests that students are generally satisfied with faculty availability throughout the four years of medical education at the School. With the recently adopted Report of the Committee on Expectations Regarding Teaching, it is likely that further improvement in this area will occur during the coming years.

Information Resources and Library Services

The Committee reviewed the database summary of the collections in the Ehrman Medical Library, including online materials and journal subscriptions. The number of electronic journal subscriptions has increased dramatically over the past year. Most other categories (books, audiovisuals, and databases) have remained largely unchanged. Additionally, while not listed here, the library has obtained licenses for clinical and educational PDA software. This is likely to become a particularly useful resource given the recent expansion of the wireless network on campus to include PDA devices at clinical sites. Overall, since this increase in library holdings has outpaced any change in the size of the entering class, and since the library has been
emphasizing acquisition of online resources that can be used by multiple individuals simultaneously, it is likely that this resource is adequate for the size of the student body.

Recent years have seen a large expansion in the number of online educational resources available to students. Each module in the first and second year of medical school maintains a separate website at a central site: http://education.med.nyu.edu/courses/. The amount of information available on these sites varies significantly among different modules. All module directors, as well as faculty participating in the course, are able to post relevant materials via the Course Materials Management System (CMMS), which students can download from a password-protected site. Core clinical clerkships also have individual websites which are linked from the same site although CMMS has not yet been utilized for the clinical clerkships. AES, in collaboration with the Surgery Department, has developed the Surgical Interactive Multimedia Modules (SIMMs). SIMMs are teaching tools which allow students to explore a specific surgical problem in depth, free from the constraints imposed by the clinical environment. The SIMMs utilize the strengths of digital video, 3D simulations and cross-discipline content integration. AES is currently working on additional teaching tools and modules for other clinical clerkships. In addition to all of the above educational resources, a student portal has been created with a goal of providing students with a convenient, customizable, central location from which all of the academic as well as non-academic material.

As a part of the LCME Student Survey, students were asked to evaluate the state of information technology at the School. Questions pertinent to this topic included student satisfaction with the School’s network for internet access, e-mail, CMMS, wireless access, access to 24-hour computing and printing on campus, availability of technical support for computer problems, and quantity of curricular resources available on School’s network. In addition, students were asked to comment on the status of information technology at the school. Overall, student satisfaction with the state of information technology was significantly lower than for other areas assessed by the survey. For instance, 26% of respondents ranked the School’s network for internet access at “Poor” or “Unacceptable” levels. Similarly, 56% stated that their satisfaction with e-mail is “poor” or “unacceptable,” with only 15% of students ranking e-mail reliability at “Good” or “Excellent” levels. Students were generally satisfied with CMMS, with 90% ranking it at “Average” or above. Respondents gave an average score to the wireless network on campus, with the mean of 3.03 (SD 1.05). Students found accessibility of 24-hour computing on campus to be satisfactory (Mean 3.71, SD 0.98). However, they were not as highly satisfied with access to 24-hour printing (Mean 3.18, SD 1.25) and the Coles 201 printing facility (Mean 2.59. SD 1.04). Finally, most students said that the quantity of curricular resources available on the network was “the right amount.” The comments reiterated student dissatisfaction with the state of information technology at the school, and in particular, dissatisfaction with the e-mail system, calling it “slow, unreliable and plagued by excessive spam.” Many students also commented on the lack of accessibility and helpfulness of the IT Help Desk. Most comments included a statement that IT is the area most in need of improvement at the School of Medicine. Clearly, while students are generally satisfied with certain aspects of information technology, such as CMMS and 24-hour computing, student responses suggest that a number of other IT-related resources are not adequate and require attention.

Facilities
Capacities of each of the lecture halls and seminar rooms used for teaching purposes, as well as study space capacities, are listed in the database. Five auditoriums (Farkas, Lecture Halls A, B, E and F) are sufficiently large to house a full medical school class. The laboratory space on the 2nd and 3rd floors of Coles Teaching Laboratories can be used as a small group conference facility as well, bringing the total combined small group conference capacity to 29*5 + 15*6 = 235. This combined capacity of laboratory and small group conference space is sufficiently large to house one full medical school class. However, we feel that there may be need for a space devoted to individual or group studies by students in a less formal setting. The committee supports the efforts of the School to evaluate possibilities for this type of space.

In addition to preclinical facilities, availability of teaching facilities at the clinical sites (Tisch, Bellevue) also was explored. While we were not able to obtain concrete numbers regarding the total number of teaching
spaces available at Tisch and Bellevue Hospitals, as well as other clinical sites, we are aware that the majority of departments have at least one large conference room and/or library in Bellevue Hospital.

As a part of the LCME Student Survey, students were asked to evaluate the quality of preclinical and clinical teaching facilities including lecture halls, anatomy and multipurpose laboratory facilities, small conference rooms, clinical teaching space at hospitals and transportation to off-campus teaching sites. All items were ranked from 1-Unacceptable to 5-Excellent. In general, students were more satisfied with preclinical facilities than with the clinical ones, but overall score for both was between “Average” and “Good.” A number of student comments stressed the need for additional teaching space in Tisch and Bellevue Hospitals, stating that it is difficult to find space for small group teaching in these hospitals.

Patients
Total number of hospital beds in Tisch and Bellevue Hospitals and total number of patients seen in these hospitals per year are summarized the database. With over 60,000 annual admissions between the two main teaching hospitals, as well as availability of other teaching hospitals and sites (i.e., VA, North Shore-LIJ, Lenox Hill), it appears that the number of patients is sufficiently large to accommodate the size of a current medical school entering class.

Instructional Equipment
The School has all the necessary traditional, instructional, equipment for the laboratories, such as dissection instruments, microscopes, basic laboratory supplies, etc. Moreover, necessary clinical equipment is available to all students. All Coles seminar rooms are equipped with projectors, screens and computers for presentations, and Coles laboratory rooms are equipped with large touch screens. In addition, the Coles building houses a computer lab, Coles 201, which gives students 24-hour access to both PC and Macintosh computers as well as high capacity laser printers. Finally, all the necessary audiovisual equipment is available for lectures. The majority of lectures are recorded and available to students in MP3 format. PowerPoint presentations used during first and second year lectures are available as well, via the CMMS.

In evaluating class size, the Committee considered the:

- need to share resources to educate graduate students or other students within the university
- size and variety of programs of graduate medical education
- responsibilities for continuing education, patient care, and research

As shown in the database, the total number of graduate students in the Sackler Institute of Graduate Biomedical Sciences is 249 in 2005-06. While the size of the graduate class is significantly smaller than the medical school class, it is still possible for the graduate students to have an effect on the resources available to medical students. This primarily concerns only students in the first two years of medical school, as graduate students are unlikely to compete for the resources at the clinical sites. Several resources may be considered here: facilities, such as lecture halls and libraries, faculty availability to teach lectures, labs and small group conferences, availability of basic science laboratory space for medical student research, etc. Of these, competition for facilities is probably of the least concern. Most graduate student lectures take place in smaller departmental conference rooms in MSB and Skirball Institute. Thus, there is little competition for medical school lecture halls. Furthermore, since the library has greatly expanded the list of online resources over the past several years, competition for library resources such as scientific journals has been largely addressed.

Another area in which graduate students may present a serious competition for resources is availability of laboratory space for research to medical students. PhD students in Year Two and beyond and MD/PhD students during their graduate years are nearly full-time in the laboratory, and thus may greatly reduce the research opportunities available to medical students who can only commit a few months to laboratory research. On the other hand, MD/PhD students as well as PhD students can serve as mentors to medical students in the laboratory.
As a part of LCME Student Survey, students were asked to rate the ease of finding research opportunities on campus from 1-Unacceptable to 5-Excellent. The mean was 3.64 (S.D. 0.94), which is between “Average” and “Good.” Overall, there were very few comments about the lack of research opportunities at the School, although some students did request better communication and advising regarding research opportunities on campus. There were a number of students who stated that finding research opportunities on campus was not a difficult process.

**Recommendations**
- Improve IT and related resources, including but not limited to the e-mail system, student portal, helpfulness and accessibility of IT Help Desk, reliability of 24-hour printing facilities on campus, expansion of CMMS to include all clinical clerkships, relocation and improvement of individual clinical clerkship websites.
- Renovate existing preclinical teaching facilities.
- Create a space devoted to less formal individual or group study.
- Identify more space appropriate for clinical teaching at Tisch and Bellevue Hospitals.

**Diversity**
The School of Medicine recognizes that the diversity of its students is essential to its goals of offering first class training in the provision of excellent and compassionate care to a diverse population. In 2005, Dean Glickman formed the Dean’s Council on Institutional Diversity to assess and enhance diversity in all areas of the Medical Center. Since the last LCME site visit, the School has seen a steady annual increase of matriculating underrepresented minority students to its current ratio of 13% of the incoming class of 2009. There also is an increase in the number of women matriculated from 42% in 2000 to a high of 58% in 2003. After a drop to 43% in 2005 (the first year of AMCAS program participation), the percentage of female matriculants rose again to 53% in 2006. Data on socioeconomic diversity is not readily available, but proxy data on financial aid eligibility and indebtedness show socioeconomic diversity in the student body. However, several responses to the LCME Student Survey indicated concern about the inadequacy of racial and socioeconomic diversity among students at the School of Medicine. AAMC data on average parental income, which for the School is approximately $140,000, may also indicate lack of socioeconomic diversity in the student population.

**Outreach Programs**
Several outreach and recruiting activities have been developed to achieve diversity goals:
- A recruitment program which involves over 30 visits each year to recruitment fairs and colleges by School representatives.
- Summer Undergraduate Research Program with recruitment targeting underrepresented minority and disadvantaged students.
- Visits and tours of the School for students from Historically Black Colleges and Universities and other schools with large minority student populations.
- Native American Mentoring Program, including workshops to prepare Native Americans for graduate and medical school, pre-medical workshops which include MCAT preparation, mock-interviews and exposure to the Native American community through local and academic publications.
- Program for Preparatory Education in Science and Medicine to expose K-12 students to careers in medicine and broaden opportunities for bright school children, especially those from backgrounds which are socioeconomically compromised and/or underrepresented in the medical and scientific community.
- Bridging the Gap mentoring program for underrepresented minority NYU pre-medical students.
Support Programs
Appropriate student support programs are provided. In addition to student support programs provided by the Office of Student Affairs, the Office of Diversity Affairs provides advising and support to underrepresented minority students. The Assistant Dean meets regularly with members of the Black and Latino Student Association (BALSA), and students are encouraged to visit the office individually. The Assistant Dean also meets regularly with representatives of the Student Council to inform students on diversity activities, explore support needs, and involve students in various initiatives, including participation in the Dean’s Council on Institutional Diversity. The Assistant Dean meets frequently with underrepresented minority students in the first year to monitor their progress and provide needed support. A dedicated, minority faculty advisor is also available to students on a regular basis. The faculty advisor, the Assistant Dean, and representatives of BALSA also develop and implement workshops for minority students on how to navigate the first and third year, of medical school.

Diversity Mixers are hosted by the Office of Diversity Affairs to form a supportive community for students and establish a mentoring network. Students selected from the Sophie Davis program to join the School of Medicine in their third year also participate in the mixers. The Office is further developing an orientation program for the Sophie Davis students to bring them to the NYU campus on a regular basis and to ensure a smooth transition. The office also supports various student groups such as the Lesbian, Gay, Bisexual, and Transgender People in Medicine (LGBTPM) group, the Muslim students group, and the Chinese Scientists group in planning and organizing events and seminars and creating an environment of support and inclusion at the School of Medicine.

Professional Role Models
Although strides have been made in increasing diversity among the medical student population, the racial, ethnic, and gender diversity of the faculty lags behind what the School would desire to provide appropriate professional role models for our increasingly diverse student body. A large majority of underrepresented minority students surveyed for the LCME noted inadequate diversity among preclinical and clinical faculty.
How would you rate the diversity (racial, ethnic, religious, sexual orientation) among clinical faculty?

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<th>Neutral/No opinion</th>
<th>Adequate</th>
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<td>33%</td>
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The Dean’s Council on Institutional Diversity and Dean’s Committee on Women are taking several steps to address this deficit. They have recommended clear articulation of institutional goals on diversity, clear guidelines in the search and screening for faculty positions, and adequate reporting and accountability by hiring bodies.

Several initiatives have been planned and implemented to improve racial and ethnic diversity among faculty, in part to enhance the diversity of professional role models:

- Participation by residency directors and faculty in national meetings to recruit house staff and publicize residency programs.
- Establishment of a residency program open house at the School.
- Development of a cross-institutional, New York City-wide network of minority graduate students and post-doctoral fellows.
- Establishment of formal guidelines for the recruitment and hiring of minority faculty.

Several initiatives also have been developed to improve gender diversity among faculty, in part to enhance the diversity of professional role models:

- Establishment of a women faculty-medical student mentoring program.
- Review of salary and promotional data and tenure to assess gender equity.
- Establishment of a women’s advocacy group to identify and recruit female candidates for faculty positions.
- Active recruitment of applicants to the Executive Leadership in Academic Medicine program to prepare senior women faculty to move into leadership positions.

Data on racial and gender composition of the faculty, some of which depends upon self-identification and self-reporting, are incomplete. Nevertheless, data from both Human Resources and Faculty Records reveal a lack of racial and gender diversity among faculty at the School of Medicine.

**Socioeconomic Diversity among Students**

The Office of Admissions and Financial Aid does not have longitudinal data on socioeconomic diversity. However, national AAMC data on average parental income among students place the School ($140,000 per
annum) among the top of the private medical schools. Data on educational debt accumulated by our graduates incorporates a 2004-2005 increase in tuition of fees, and therefore, cannot be used to assess trends in socioeconomic diversity among our graduates.

Average educational debt of all graduates with debt:

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<td>$83,519</td>
<td>$91,867</td>
<td>$95,935</td>
<td>$121,495</td>
<td>$112,389</td>
</tr>
<tr>
<td>%</td>
<td>-8.5%</td>
<td>8.5%</td>
<td>10.0%</td>
<td>4.4%</td>
<td>26.6%</td>
<td>-7.59%</td>
<td></td>
</tr>
</tbody>
</table>

Percentage of graduates with debt in excess of $100,000:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40%</td>
<td>31%</td>
<td>20%</td>
<td>45%</td>
<td>47%</td>
<td>68%</td>
<td>51%</td>
</tr>
</tbody>
</table>

**Expectations of the Community**

Much effort has been made since the last LCME review to improve diversity at the School of Medicine. An increase in outreach and recruitment efforts has doubled the number of underrepresented minority students. There also has been a significant increase in the number of women students despite a slight dip after the initial increase. The Office of Diversity Affairs has been expanded to address diversity in all areas of the School and Medical Center. A Dean’s Council on Institutional Diversity and a Dean’s Committee on Women have been established to improve diversity in the leadership, faculty, staff and students, and to advise on patient care and community outreach efforts. Several important improvements are underway as a result of these initiatives. Guidelines on diversity in recruitment for leadership and faculty positions and for mentoring and promotion of faculty have been developed and an Institute of Community Health and Research, recommended by the Dean’s Council on Institutional Diversity, was established in 2006.

Nevertheless, as the Student Survey indicates, ethnic, gender, and socioeconomic diversity of students remain issues to be continually addressed by the NYUSoM.

**Recommendations**

- Improve the system to make readily available reliable data on the demographics of students, faculty, and the patient population.
- Review the recruitment and admission processes of students to ensure that diversity initiatives are implemented.
- Increase efforts to recruit underrepresented and disadvantaged students and identify scholarship funds to support students.
- Continue to promote the work of the administration with the Dean's Council on Institutional Diversity to develop programs for a diverse faculty.

**Transfer and Visiting Students**

Noted below is the number of transfer students accepted into the third year of medical school:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of transfers to the 3rd Year*</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

*19 of 22 students are in the Sophie Davis Program

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Visiting students</td>
<td>462</td>
<td>441</td>
<td>480</td>
<td>433</td>
</tr>
</tbody>
</table>

Visiting medical students are offered electives/subinternships only and are not permitted to do core clerkships. In the Student Survey, students were asked to comment on the impact of visiting students on clerkships. The comment analysis of the survey revealed both positive and negative responses (n=121):
Positive responses:
27% of respondents feel that visiting students enriched their experience on clinical rotations.
18% of respondents feel that visiting students give a different perspective on the NYUSoM experience.

Negative responses:
21% of respondents feel that visiting students were frequently given priority over NYU students in choice of patients and procedures.
17% of respondents feel that visiting students take away OR time from NYU students during the Surgery and Ob/Gyn clerkships (9% of all respondents commented specifically about the Plastic Surgery elective).

Neutral responses:
15% feel that visiting students had no impact on their clinical experience.

Overall, the rotations experiencing the most impact from visiting students were Ob/Gyn (27% of students responding), Surgery (42% of students responding), and Electives (28% of students responding).

In order to ascertain whether or not the transfer students received comparable medical school education prior to entering NYU, we compared the USMLE Step 1 mean score of transfer students to the NYU mean, and to the National Mean, and found that in three of the four years the mean score was above the National Mean and close to the NYU mean.

<table>
<thead>
<tr>
<th>Matriculation Year</th>
<th>Transfer Mean USMLE Step 1</th>
<th>National Mean USMLE Step 1</th>
<th>NYU Mean USMLE Step 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>227</td>
<td>216</td>
<td>231</td>
</tr>
<tr>
<td>2003</td>
<td>212</td>
<td>216</td>
<td>227</td>
</tr>
<tr>
<td>2004</td>
<td>221</td>
<td>216</td>
<td>226</td>
</tr>
<tr>
<td>2005**</td>
<td>227</td>
<td>217</td>
<td>227</td>
</tr>
</tbody>
</table>

**preliminary scores through October 2005

In reviewing the school’s protocol for visiting medical school applicants, the committee determined that the screening, registering and maintenance of information associated with such students are in accordance with the LCME guidelines. Students from LCME schools are accepted on a routine basis provided they are in good academic standing, meet the NYU-established health immunization, malpractice and personal health insurance criteria, and provide documentation of these requirements. In addition, the students from non-LCME accredited schools must have a sponsoring NYU faculty member who is satisfied that their credentials are appropriate for our institution, and those students must obtain a letter of eligibility from the New York State Board of Medicine. The Senior Associate Dean for Education and Student Affairs reviews the application of any visiting student whose credentials are in doubt. NYU does not permit visiting students to participate in core clerkships, and we do not accept visiting students from institutions without their own clinical facilities.
Recommendations

- Review the School’s visiting student policy to ensure across host departments that visiting students do not have priority or interfere with the student experience.
- Provide information from the Student Survey to departments/services with identified problems.

B. Student Services

Career Choice and Counseling

Academic Advising

Academic advising begins in the first year with the Master Scholars Program. This program serves to provide students with paracurricular enrichment as well as formal mentorship from both basic science and clinical faculty. Students join one of five societies:

- Jonas Salk Society for Biomedical and Health Science
- Severo Ochoa Society for Medical Informatics and Biotechnology
- Walter Reed Society for Health Policy and Public Health
- May Chinn Society for Bioethics and Human Rights
- Lewis Thomas Society for Arts and Humanities in Medicine

Through this program, students gain exposure to disciplines outside of the basic sciences and clinical medicine, and are afforded access to faculty in both structured and informal meetings; these monthly faculty interactions provide intellectual guidance and mentorship for students.

At any time thought necessary, a student can arrange for an individual meeting with the Associate Dean for Student Affairs for further academic advising or direction. These meetings also can be arranged for students with academic performance issues or personal circumstances resulting in academic problems. During the end of third year, as preparation begins for the residency application process, students are provided with advisors from within departments of their choosing. These departmental advisors provide valuable guidance on residency choices.

Finally, there are a series of other methods by which students gain advice and guidance, including:

- Summer Fellowships: Between first and second year, students may choose from one of many academic activities designed to provide them with an in-depth exposure to a particular medical or scientific discipline (most provide opportunities for counseling, some include faculty mentorship)
- Clinical Clubs: The School has over 20 different student organizations which focus primarily on particular medical subspecialties and clinical activities, each of which sponsor various events (panel discussions, lectures, and workshops), and bring together students, residents, and faculty
- Clinical Correlation: 4th Year students are matched with first year students to provide peer counseling and to help integrate clinical concepts with biomedical science.

Students who may require additional counseling or tutoring in order to keep abreast and profit from the rigorous curriculum of medical school are offered many resources. Primarily, the Associate Dean for Student Affairs will meet with students requiring such counseling in order to understand the specific needs and make necessary arrangements (i.e., remediation, educational testing, study skill enrichment, special accommodations, etc.). Formal tutoring is provided without charge to students who require assistance as determined by module or clerkship director or by the Associate Dean for Student Affairs. Students also have access to mental health resources through Student Health Services (SHS).

From the AAMC GQ for the years 2003-05, student satisfaction in the following areas were:
In general, student satisfaction with the above services has decreased in the past three years. In particular, academic and personal counseling, while once on par with the national average, declined as reflected in the 2005 GQ. It should be noted that the Senior Associate Dean for Student Affairs was ill for several months during the 2004-2005 academic year. The 2006 GQ reveals some “rebound” in level of satisfaction of graduating students with academic counseling, with 48.8% reporting they were satisfied or very satisfied. Student satisfaction with tutorial help also has decreased, but this appears to be due to the fact that many students have no opinion on the issue. Finally, on average, students feel that the administration is quite responsive to student problems.

**Academic Difficulty**

In evaluating possible reasons why students experience academic difficulty, we compared MCAT scores, science vs. non-science majors in undergraduate major, and whether the undergraduate schools were private, public or Ivy League. No significant correlation existed between any of the proposed variables and academic difficulty, suggesting that no systematic variables predict academic difficulty among our students. In addition, the Preclinical and Clinical Boards on Academic Standing, after evaluating the records of students, state that the most common reasons for academic difficulty are illness and personal issues, not lack of academic capability to succeed in medical school.

In the last concluded academic year (2004-2005) no students took a leave of absence because of academic difficulty, and two students repeated first year. Between 1999 and the academic year of 2004-2005, a total of nine students withdrew or were dismissed from medical school. Five of the nine students withdrew from medical school during their first year. As gathered from the Student Survey, 72% of students at the School of Medicine do not believe they had academic difficulty as defined by their personal standards.

The School of Medicine’s Student Handbook states all the guidelines related to academic performance. It also includes the Preclinical and Clinical Boards procedures to evaluate and help students with academic difficulty. The Preclinical and Clinical Boards work together with module, unit and clerkship directors to identify students who need remediation and set up a plan. Remediation programs are designed by the
relevant module and unit directors in the first two years of medical school and by clerkship directors in the last two years of medical school. Module and clerkship directors believe that these regular meetings help them identify students who are coming under their supervision and have had previous academic difficulty, therefore allowing them to take measures to help those students.

In the preclinical years, most programs not only identify students who are having academic difficulty but also students who are “in danger” of having academic difficulty. All modules offer tutoring for students who are having academic difficulty, whether identified by the professor or by the student him/herself. Tutoring sessions are offered by second, third and fourth year students who excelled in the module or by graduate students. The tutoring sessions are run differently, depending upon module directors’ discretion. Some module and unit directors offer general review sessions to all students to help them identify problems and prevent failure in an exam. Students who had difficulty once are normally monitored and offered tutoring beforehand for other courses to prevent difficulty.

Clerkship directors individually design methods of remediation for students who are having difficulty. Most clerkship directors set up study plans with the students and are more watchful of them to help them keep up with the material and succeed in their rotation. Because some clerkships are relatively short (i.e., four weeks), directors cannot regularly identify students having academic difficulty early enough to effectively intervene in mid-clerkship. In those cases, remediation occurs during a second, full clerkship.

During the preclinical years, academic difficulty is documented through the regular Preclinical Board meetings among module and unit directors and the appropriate deans. As a group, the Board determines, on a case-by-case basis, which students are to meet with the Associate Dean for Student Affairs to discuss the academic difficulty. A similar body exists for the clinical years, but until the 2006-2007 academic year met less frequently. Because of the potentially long delay between the end of a clerkship and the assignment of a clerkship grade, a few students who had significant academic difficulties continued on to other clerkships without effectively addressing deficiencies in their cumulative performance. The improvement in the grade reporting process and the increased frequency of Clinical Board meetings instituted for the 2006-2007 academic year should facilitate more effective intervention in the clinical years.

The Associate Dean for Student Affairs, upon meeting with students who experience academic difficulty, attempts to identify specific issues to resolve. Students with emotional or personal issues are provided with appropriate counseling resources, while students with primarily academic issues are offered remediation, retesting, tutoring, or other similar resources. Other sources of academic difficulty are dealt with on a case-by-case basis at the discretion of the Associate Dean for Student Affairs.

Academic difficulty in preclinical years:

<table>
<thead>
<tr>
<th>Class</th>
<th># of students with academic difficulty in First Year</th>
<th># of students with academic difficulty in Second Year</th>
<th># of students with academic difficulty in First Year who continued to have difficulty in Second Year (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>23</td>
<td>10</td>
<td>6 (26%)</td>
</tr>
<tr>
<td>2005</td>
<td>26</td>
<td>26</td>
<td>11 (42%)</td>
</tr>
<tr>
<td>2006</td>
<td>22</td>
<td>29</td>
<td>10 (45%)</td>
</tr>
<tr>
<td>2007</td>
<td>21</td>
<td>14</td>
<td>7 (33%)</td>
</tr>
<tr>
<td>2008 *</td>
<td>42</td>
<td>13</td>
<td>7 (17%)</td>
</tr>
</tbody>
</table>

* The second year for the Class of 2008 not yet concluded at time of data collection.

On average, 16.8% and 11.5% of students have some academic difficulty during the first year and second
year, respectively. Academic difficulty is defined as having performed below minimum expectation on a single exam or multiple exams. The significant variability in difficulty from year-to-year, particularly in the second year, is likely attributed to curricular changes and development (e.g., changes in course structure or exam schedules). In some years, the proportion of students who continue to have difficulty from first to second year approaches 50%, suggesting that remediation methods did not fully prevent students from having subsequent difficulties.

Academic difficulty in clinical years:

<table>
<thead>
<tr>
<th>Class</th>
<th># of students with academic difficulty in Clinical Years</th>
<th># of students with academic difficulty in at least one Preclinical Year who continued to have difficulty in Clinical Years (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>11</td>
<td>1 (9%)</td>
</tr>
<tr>
<td>2004</td>
<td>5</td>
<td>3 (60%)</td>
</tr>
<tr>
<td>2005</td>
<td>16</td>
<td>7 (44%)</td>
</tr>
<tr>
<td>2006</td>
<td>17</td>
<td>7 (41%)</td>
</tr>
<tr>
<td>2007 *</td>
<td>11</td>
<td>5 (45%)</td>
</tr>
</tbody>
</table>

* The clinical years for the Class of 2007 were not yet concluded at time of data collection.

Approximately 7% of students have academic difficulty during their clinical years. Clinical responsibilities provide students with an entirely new set of academic challenges. The nature of grading on clerkships changes in many respects; however, again, nearly 50% of students with academic difficulties have experienced similar problems previously. These data suggest that some of the policies regarding promotion of students with academic difficulties may be too lenient. For a subset of students with repeated difficulty, it may be in their ultimate best interest to enforce stricter remediation, including repetition of all or part of a year or creation of a new “Fifth Year” curriculum with special educational opportunities to improve their performances.

The Committee analyzed the data on students who did not graduate within four years. Reasons that students do not graduate in four years included a year off for academic enrichment (i.e., research, additional advanced degree, others), MD/PhD training, repetition of a year/decelerated curriculum, or withdrawal/dismissal.

Among incoming students, the percentages of MD/PhD’s as part of the matriculating class are approximately 5.6% to 7%. (In each graduating class between 2000 and 2005, percentages of MD/PhD’s as part of the graduating class have ranged from 3.9% to 8.5%.) Among the 967 matriculated students in the six years from 1999 to 2005, only 9 students (0.9%) either withdrew or were dismissed.

Among entering classes since 2001, approximately 20 students per year (12.3%) have taken an additional year for academic or paracurricular activities (not including MD/PhD candidates). Activities have included:

<table>
<thead>
<tr>
<th>Fifth Year</th>
<th>Average # of students/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters of Public Health</td>
<td>3.4</td>
</tr>
<tr>
<td>NIH (Research Fellowship)</td>
<td>3.0</td>
</tr>
<tr>
<td>International Activity</td>
<td>1.2</td>
</tr>
<tr>
<td>Intramural Activity (i.e., research at NYUSoM)</td>
<td>7.8</td>
</tr>
<tr>
<td>Extramural Activity (i.e., research at other institution)</td>
<td>2.6</td>
</tr>
<tr>
<td>Other</td>
<td>1.6</td>
</tr>
</tbody>
</table>

A “Fifth Year” curriculum has been instituted and encouraged by administration, providing students with a leave of absence from medical school. During this time, students do not pay tuition at NYU, but do have
access to all medical school facilities. However, because of the “leave of absence” designation, students are not covered by the school’s malpractice insurance and cannot participate in any clinical activities, nor can they be certified by the Office of the Registrar to take national examinations such as USMLE Step 2 CK and CS.

National data from medical schools on extended training or a fifth year are not available. Data from other leading institutions in the nation were reviewed for the past 3 years; ranges for extending medical training beyond four years (excluding MD/PhD) ranged from 30 to 50%. Descriptions for what these students did during the extra time included research, community service, and advanced degrees.

**Career Choice and Elective Selection**

The Committee reviewed the information in the LCME database regarding intramural electives, extramural electives and international electives, and it obtained the following data on students who elect to take extramural electives and international electives.

The percentages of students who choose extramural and international electives are below:

<table>
<thead>
<tr>
<th>Class</th>
<th>% Students with at least one extramural elective</th>
<th>% Students with at least one International elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>64.4</td>
<td>16.5</td>
</tr>
<tr>
<td>2004</td>
<td>74.0</td>
<td>16.2</td>
</tr>
<tr>
<td>2003</td>
<td>61.1</td>
<td>14.6</td>
</tr>
</tbody>
</table>

In evaluating career and residency planning, the Committee found that during their preclinical years, students are advised on career opportunities and choices by the Associate Dean for Student Affairs. In addition, their Master Scholars Program mentor, with whom they interact on at least a monthly basis, is available both for informal counseling as well as for specific direction. In the early winter of the second year, the process of preparing students for the clinical years begins. By winter of the third year, students meet as a group with the Senior Associate Dean for Education and Student Affairs and, by March of that year, have submitted a list of potential residency choices. In early May, third year students receive departmental advisors in their areas of interest; those students with more than one potential career pathway receive advisors in each of their disciplines of interest. For this reason, on average, there are 1.5 advisors per student. Students may submit a request for a particular advisor; however, whether or not that advisor is appointed to the student is at the discretion of the department. Students’ experiences with their advisor(s) are largely variable and depend on the initiatives of both the student and faculty advisor. Some students develop a strong personal relationship with their advisors, while others may never contact the faculty members. In some instances, students may opt to pass on their appointed departmental advisor and use another faculty member with whom they are familiar as their unofficial advisor.

Students who have not yet "differentiated" are welcome to meet with the Associate Dean for Student Affairs to further explore possibilities to assist in the successful decision making process. Between May of their third year and August of their fourth, all students meet both in small groups and in one-on-one sessions with the Senior Associate Dean for Education and Student Affairs, who advises them specifically on application preparation and ultimately writes their Dean's letters. Further information on career and residency planning is available in the section on academic advising.
From the AAMC GQ for the years 2003-05, student opinions and satisfaction in the following areas were:

<table>
<thead>
<tr>
<th>I received appropriate faculty guidance in the selection of fourth year elective activities.</th>
<th>% agree or strongly agree</th>
<th>% no opinion</th>
<th>% disagree or strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYU 2003</td>
<td>46.9</td>
<td>20.1</td>
<td>32.8</td>
</tr>
<tr>
<td>NYU 2004</td>
<td>45.6</td>
<td>18.1</td>
<td>36.3</td>
</tr>
<tr>
<td>NYU 2005</td>
<td>32.7</td>
<td>19.1</td>
<td>48.2</td>
</tr>
<tr>
<td>NYU Avg</td>
<td>42.0</td>
<td>19.1</td>
<td>38.9</td>
</tr>
<tr>
<td>National</td>
<td>62.6</td>
<td>13.7</td>
<td>23.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Career Assessment Activities</th>
<th>% satisfied or very satisfied</th>
<th>% no opinion</th>
<th>% dissatisfied or very dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYU 2003</td>
<td>40.3</td>
<td>32.2</td>
<td>27.5</td>
</tr>
<tr>
<td>NYU 2004</td>
<td>35.0</td>
<td>40.0</td>
<td>25.0</td>
</tr>
<tr>
<td>NYU 2005</td>
<td>34.5</td>
<td>28.8</td>
<td>36.7</td>
</tr>
<tr>
<td>NYU Avg</td>
<td>36.6</td>
<td>33.9</td>
<td>29.5</td>
</tr>
<tr>
<td>National</td>
<td>53.9</td>
<td>26.4</td>
<td>19.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Availability of Personnel Providing Career Planning</th>
<th>% satisfied or very satisfied</th>
<th>% no opinion</th>
<th>% dissatisfied or very dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYU 2003</td>
<td>42.3</td>
<td>28.2</td>
<td>29.5</td>
</tr>
<tr>
<td>NYU 2004</td>
<td>35.0</td>
<td>37.5</td>
<td>27.5</td>
</tr>
<tr>
<td>NYU 2005</td>
<td>29.5</td>
<td>27.3</td>
<td>43.2</td>
</tr>
<tr>
<td>NYU Avg</td>
<td>35.7</td>
<td>31.2</td>
<td>33.0</td>
</tr>
<tr>
<td>National</td>
<td>50.8</td>
<td>26.5</td>
<td>22.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall Satisfaction with Career Planning Services</th>
<th>% satisfied or very satisfied</th>
<th>% no opinion</th>
<th>% dissatisfied or very dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYU 2003</td>
<td>40.9</td>
<td>25.5</td>
<td>33.6</td>
</tr>
<tr>
<td>NYU 2004</td>
<td>33.7</td>
<td>36.9</td>
<td>29.4</td>
</tr>
<tr>
<td>NYU 2005</td>
<td>28.1</td>
<td>29.5</td>
<td>42.5</td>
</tr>
<tr>
<td>NYU Avg</td>
<td>34.4</td>
<td>30.8</td>
<td>34.9</td>
</tr>
<tr>
<td>National</td>
<td>51.8</td>
<td>25.6</td>
<td>22.6</td>
</tr>
</tbody>
</table>

Overall, when compared to national averages, NYU students appear significantly less satisfied with career and elective counseling. Over the past three years, trends show that students perceive that they receive less faculty guidance in selecting electives. Further, students are less satisfied with activities and personnel surrounding career assessment and planning. When studying overall satisfaction with career planning, just as many students are satisfied as are dissatisfied with services.

**Residency Applications**

In examining the timeline for the application process, the Committee found that a meeting is held by the Senior Associate Dean for Education and Student Affairs and the Registrar in the late winter of the third year to review the residency application process. Students submit a preliminary curriculum vitae and a list of possible areas of residency training in early March; by early May, they receive departmental advisors in their areas of interest. During May and June, the Senior Associate Dean for Education and Student Affairs meets in small groups with all students to discuss the process of obtaining letters of recommendation, constructing a robust program list, and writing a personal statement. After that group meeting, each student meets individually with the Senior Associate Dean for Education and Student Affairs, who also offers to read and comment upon each student’s personal statement, an offer of which the vast majority of students avail themselves.

The school does not offer required, 4th Year core clerkships during December and January, thereby releasing students from academic obligations during peak residency interview season. In the winter of their third year,
students meet as a group with the Senior Associate Dean for Education and Student Affairs, who recommends that they leave one month free for interviewing; that recommended month varies in accordance with the timing of the student's particular matching program. Those rare students, notably MD/PhD trainees, who must complete core rotations over this period in order to graduate without adding another year to their program, work with the Registrar and the Senior Associate Dean for Education and Student Affairs to construct a schedule that allows a month during this period. If that is not possible and a student misses more than three days of a four-week month rotation, the clerkship directors provide additional time as needed to assure that the student meets the clerkship's expectations. All but the MD/PhD students complete two of the twenty required weeks of elective time during the Advanced Science Selective block that ushers in the fourth year; 18 additional weeks of electives are required for graduation. With the time required for the 4th Year clerkships (Advanced Medicine, Critical Care and, for some of the students, Ambulatory Care if not taken as a third year student), the total number of weeks of required work in the fourth year ranges from a minimum of 28 to a maximum of 32. There is ample time, therefore, to complete curricular requirements. Students also have enough time to schedule and take national licensing examinations.

The Medical Student Performance Evaluations of all students are prepared by the Senior Associate Dean for Education and Student Affairs. The dean employs the student's preclinical and clinical records (grades and descriptive comments), accomplishments as recorded on an academically structured curriculum vitae (the format and content of which are reviewed individually with each student), and personal knowledge of the student gained during a scheduled, one-on-one interaction prior to the start of the formal application season. Additionally, comments may be included in the Dean’s Letter from faculty and others with whom the student has worked, but has not asked for a formal letter of recommendation. These comments are reviewed and quotes/excerpts are included at the discretion of the Senior Associate Dean for Education and Student Affairs.

Students’ departmental advisors do not have a formal role in writing or contributing to the Dean’s Letter (unless asked by the student to submit comments), nor do they meet with the Senior Associate Dean for Education and Student Affairs. All students have the opportunity to read their Performance Evaluation before it is transmitted to programs.

**Recommendations**

- Move forward with the plan to convene a task force of students, faculty and administrators to evaluate the current systems of mentoring, career counseling, and academic advising.

**Financial Aid**

The Committee found that the School of Medicine provides students with effective financial aid as exemplified by the following statement found on our website: “The School of Medicine has an extensive array of low-cost educational loans available to students in need. Repayment is deferred while you are a student and interest charges do not exceed 6% in repayment. Scholarship funds are provided as part of financial aid packages to students with the greatest demonstrated need. Stafford Student Loans are available to most students, providing up to $8,500 a year at interest rates subsidized by the federal government. An additional $30,000 in Stafford Loan funds is available with unsubsidized interest. These loans are the primary source of aid to students. Those students in need of additional aid are assisted through the school’s program.” From the 2006 Student Survey, 65% of students queried felt that their satisfaction with the financial aid process was at least average or better. Furthermore, 45% felt that the amount of loans awarded met their needs, 11% were neutral and 14% responded unfavorably. Work-study funds seem to be readily available for students who qualify. Taken together, the policies in place provide students with the aid they need to pay for school.
During the spring, 4th Year students attend a group exit interview at which all student borrowers receive individual loan summary sheets indicating the sources of the loans, the holders of the loans, and pertinent contact information. General debt repayment strategies are outlined, and information about loan
consolidation, deferment and forbearance is provided. Students have the opportunity to ask questions and are redirected to the lender if necessary.

While the opportunity to discuss accrued debt is provided, the process is not individualized enough for graduates to fully understand their debt and their options for managing this debt. It is clear from student responses on the survey and School of Medicine published policies that little debt management counseling exists until the day of the exit interview. This is thought to be an inadequacy in the financial aid program and is reflected in the Student Survey, with greater than 50% of students responding to the “adequacy of debt counseling” in the neutral to negative range. Of note, the average student loan repayment period is as follows: 10-30 years for federal Stafford, 10 years for federal Perkins, and 10 years for private NYU loans.

Financial aid for 2005-2006 (including MD/PhD students):

<table>
<thead>
<tr>
<th>Class Year</th>
<th>First</th>
<th>Second</th>
<th>Third</th>
<th>Fourth</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Students with financial aid from all sources</td>
<td>83%</td>
<td>83%</td>
<td>77%</td>
<td>80%</td>
<td>81%</td>
</tr>
<tr>
<td>% Students with grants/scholarships from institutional sources</td>
<td>75%</td>
<td>71%</td>
<td>55%</td>
<td>72%</td>
<td>68%</td>
</tr>
</tbody>
</table>

The following illustrates the responses obtained from the student body and a summary of their comments from the 2006-2007 LCME Student Survey (n=172).

**Student Comments about the director of Financial Aid:**
- 44% of all students who commented wrote about their dissatisfaction with the director of Financial Aid. This includes 46% of respondents in the class of '06 and 58% of respondents in the class of '07.
- 21% of all respondents commented on the director’s lack of professional behavior.
- 23% of all respondents commented on the director’s lack of availability, specifically the absence of walk-in office hours, frequent cancellation of appointments, and slow response to e-mails and phone calls.

**Student Comments about debt counseling:**
- 48% of all respondents complained of the poor debt counseling offered by the Office of Financial Aid.
- 32% of all respondents commented on the need for individual one-to-one sessions on an annual basis for debt counseling and advising on personal budgets. This included up to 40% of respondents in the class of 2008, 38% of respondents in the class of 2009, and 33% of MD/PhD students.
- 10% of all respondents mentioned of lack of information regarding loan consolidation.
- 6% of respondents complained of the need for greater, non-need based aid such as loans and work-study, beyond the sum awarded in the financial package.

**Student Comments about the Financial Aid website:**
- 12% of all respondents complained of either lack of information contained on the website, or the need for access to a secure, online account containing personal financial aid information and current balance with the Bursar of the School of Medicine.

**Student Satisfaction (2005 AAMC Graduation Questionnaire):**

<table>
<thead>
<tr>
<th>Financial Aid Administrative Services:</th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Dissatisfied</th>
<th>Very Dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYU</td>
<td>14.2%</td>
<td>22.7%</td>
<td>15.6%</td>
<td>14.2%</td>
</tr>
<tr>
<td>All Schools</td>
<td>28.7%</td>
<td>39.6%</td>
<td>8.9%</td>
<td>5.2%</td>
</tr>
</tbody>
</table>
Debt Management Counseling:

<table>
<thead>
<tr>
<th></th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Dissatisfied</th>
<th>Very Dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYU</td>
<td>10.6%</td>
<td>15.6%</td>
<td>17.0%</td>
<td>22.0%</td>
</tr>
<tr>
<td>All Schools</td>
<td>23.3%</td>
<td>36.9%</td>
<td>11.3%</td>
<td>5.5%</td>
</tr>
</tbody>
</table>

Senior Loan Exit Interview

<table>
<thead>
<tr>
<th></th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Dissatisfied</th>
<th>Very Dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYU</td>
<td>9.3%</td>
<td>17.1%</td>
<td>14.3%</td>
<td>16.4%</td>
</tr>
<tr>
<td>All Schools</td>
<td>22.4%</td>
<td>32.6%</td>
<td>3.8%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

In summary, while the ability to obtain financial aid exists, there is little debt counseling and management provided to students after they have “signed.” Furthermore, 20-40% of students expressed dissatisfaction with the overall “functioning” of the Financial Aid Office and the senior exit interview, and these figures are further supported by the 2005 AAMC GQ. This fall, the Director of the Office of Financial Aid resigned; Phyllis Schulz, from New York University Office of Financial Aid, assumed supervision of the School of Medicine’s Office of Financial Aid on November 1, 2006, and a previously administrative position was upgraded to a Counselor of Financial Aid. Through a recently obtained endowment to support in part medical students’ awareness of and ability to manage their own financial situations, a program of group and individual counseling is planned for the spring of 2007. A major priority of the new Financial Aid Office is to redesign its services to better meet student needs.

The Committee realized that no explanation was given to students for recent annual tuition increases of greater than 7%, despite the stated goal of 3-6% as delineated in the 2003-2006 NYU School of Medicine Bulletin. As the cost of tuition increases, so does the cost of books, supplies, room/board and personal expenses increases and this is not directly taken into account. From their responses to the Student Survey, most students agree that they were not adequately informed about tuition increases.

It appears that medical educational and total educational debt is increased at a disproportionate rate compared to tuition and fees for 2005-2006, and non-educational debt also has increased. This finding may in part be explained by lack of financial advising and debt counseling as outlined above. Furthermore, students revealed a significant awareness of, and dissatisfaction with, loan repayment obligations to lenders given the relatively low medical resident salary.
The Tuition Refund Policy is clearly stated in the Bulletin of the School of Medicine:

“Refunds will be made in full for unused semesters and the following scale will apply for partial semester refunds:

After one week – 90% refund of tuition paid; After two weeks – 70% refund of tuition paid; After three weeks – 50% refund of tuition paid; After four weeks – No refund.

If, pursuant to the rules of conduct and academic regulations of the University and of the School of Medicine, withdrawal of a student is required before the end of the term for which tuition has been paid, a prorated refund will be made.” NYU School of Medicine Bulletin 2003-2006

**Recommendations**

- Improve the accessibility of, and communication by, the Office of Financial Aid.
- Restructure exit interviews to take place on an individual basis after a general information session, thus allowing students time to analyze their situations and ask informed questions specific to their needs.
- Explain and justify to the student body the reasons for annual tuition and fee increases, and discuss concordant increases in supplies and cost of living so that students will have adequate information for structuring budgets.
- Re-evaluate restrictions on deferring loan repayments until completion of postgraduate training.
- Consider one-on-one financial planning with the goal of creating an annual, individualized budget by student request.
- Continue to state tuition refund policy during first-year student orientation.

**Student Health Services**

**Personal Counseling**

The Master Scholars Program (MSP), as well as the Professional Development Program within the MSP, provides students with faculty mentors who provide regular, on-going advisement and support to the students. In group and individual sessions with their mentors, students have opportunities to share their concerns and receive guidance. However, this program initially was not designed to be a personal counseling, but rather a paracurricular program aimed at enriching students’ experience with focused discussions on a specific MSP Society area of concentration. For example, the May Chinn Society focuses their discussions on bioethical issues in medicine.

In the Student Survey, 55% of the respondents state that the availability of their Master Scholars mentor is above average. Twenty eight percent of the respondents rate their mentor’s availability as average, while 17% rate it as below average. Thirty two percent of the respondents found their relationship with their mentor to be above average, 18% neutral, while 49% ranked the relationship as below average. The MSP/Professional Development Program is selected by 43% of the Student Survey respondents as one of the
top five areas at the School in need of improvement, thus suggesting that these programs do not satisfy all of the personal counseling needs of the students.

Some students also receive personal counseling through interactions with the Associate Dean for Student Affairs. In the Student Survey, 52% of the respondents note that the accessibility of the Dean of Students was above average, 18% average, while 10% do not know. Fifty-six percent of the respondents find the Dean of Students’ responsiveness to problems to be above average, 16% average, 6% below average, and 22% of the respondents do not know. In terms of the quality of academic advising provided by the Dean of Students, 44% of the respondents rate it as above average, 19% as average, and 9% as average, and 29% don’t know. The data from the Student Survey indicates that the advising available through the Dean of Students is valuable for students, but also suggests not all students’ needs are being met, further supporting the need for improvements to personal counseling at the School.

**Health Services**

All medical students have access to the Student Health Service (SHS), which provides the following services free of charge:

- Urgent medical care
- Mental health care
- Referrals for specialists
- Required vaccinations
- Occupational injuries
- STD screening
- Annual PPD screening
- International travel vaccines and counseling

The Committee reviewed the hours and policies of SHS. In the Student Survey, 71% of the respondents rate the SHS as above average. Sixty-six percent of the respondents view the confidentiality of SHS above average. Twelve percent of the respondents rate the confidentiality as average, 6% below average, while 16% don’t know. However, 15% of the respondents to the Student Health comments section (n=86) feel that the SHS is inadequate to meet the needs of students, citing limited hours of operation, negative experiences with nursing and physician staff, and lack of confidentiality.

In the Student Survey, 40% of female respondents rate the quality of gynecological services above average, 13% as average, 8% below average, while 39% didn’t know. In a similar trend, 39% of the female respondents in the Student Survey regard the confidentiality of gynecological services as above average, 8% as average, and 5% as below average; while 48% didn’t know. However, in the Student Health comments section, 19% of the respondents (n=86) specifically complain about gynecological services at SHS. These students were concerned about lack of confidentiality, unprofessionalism, and limitation of hours. Of particular concern was that the physician who conducted the gynecological exams was an Assistant Professor with some interaction with students on the wards. Since the time of completion of the Student Survey, that physician has left the School and accepted a faculty position at another institution. This affords the opportunity to name, if possible, to the position someone who does not interact with medical students during their educational program. This will ensure that physicians who deal with sensitive issues at SHS, such as mental health and gynecology, are not involved in the academic evaluation or promotion of students.

**Mental Health Services**

Students are able to obtain mental health counseling through the SHS. The psychiatrist has no role in teaching medical students and no involvement in the academic evaluation or promotion of medical students. Records of mental health counseling are kept separately from the SHS medical records. Students are seen by the psychiatrist for 3-10 visits. If continued mental health care is necessary, students are referred to a group of psychiatrists who agree to see students at a discounted rate. These physicians also are not involved in the
academic evaluation or promotion of students. Students can contact the psychiatrist by phone in case of emergency when the SHS is closed.

The Student Survey reveals that 70% of the respondents could not rate the quality of Mental Health Services because they “didn’t know”; similarly, 70% of the respondents could not comment on the confidentiality of Mental Health Services. Meanwhile, 19% of the respondents find Mental Health Services to be above average, 7% find them to be average, and 5% find them to be below average. Twenty percent of the Student survey respondents rate the confidentiality of Mental Health Services as above average, 5% as average, and 1% as below average.

**Health Insurance**
Currently, the School of Medicine offers United Healthcare insurance coverage to all students. All students are required to have health insurance, either through United Healthcare or another source. Students must provide proof of health insurance each year if they elect to waive School coverage. Those who do not submit a coverage waiver are enrolled in the School plan.

Students also have the option of enrolling in a family plan. Students wishing to enroll in the family plan can add dependents during either of the two open enrollment periods (September or January). Students wishing to add dependents outside of the open enrollment periods can do so only upon proof of a qualifying event (i.e., copy of marriage certificate, birth certificate, etc.) within 30 days of the qualifying event.

Students are charged the full premium. The amount is included on the tuition and fee bills. Students are made aware of its availability the summer before first year, as well as during each semester by the Office of Student Affairs.

According to the Student Survey, 29% of the respondents do not know the cost of health insurance offered by the School of Medicine to students, 26% rate it as below average, 27% as average, and 18% as above average. Eighty six percent of respondents do not know the cost of health insurance offered by the School to students for dependents. Of those who rated the cost for dependents, 7% view it as below average, 4% as average, and 3% as above average. While 46% of the respondents regard the adequacy of services covered by the health insurance as above average and 22% find it to be average, 23% “don’t know” and are unable to assess its adequacy. Nine percent of the respondents view the adequacy of services covered as below average. In the comments regarding Student Health, 15% of respondents (n=86) believe that the United Health Insurance is too expensive. Five percent of respondents commented on the poor customer service provided by United Health Insurance.

Forty six percent of the Student Survey respondents report that they have dental insurance. Of these, 46% obtain dental insurance through their parents, 30% through the plan negotiated by Student Council, 11% from a private insurance, 5% from a spouse, and 9% from some other means. Thirty nine percent of the respondents have not seen a dentist in over one year, 25% of the respondents had their last dental check up in the past year, and 39% had theirs in the past 6 months. Sixty three percent of the respondents would purchase dental insurance from the School if it were made available. In the open comments section, 13% of the respondents believe that the School should provide dental insurance to students (n=86). As of in 2006-2007, the School offers dental insurance to students.

Students are covered by disability insurance through the School of Medicine until prior to graduation, when they are given the option of continuing coverage.

**Immunizations**
Students must present evidence of the following immunizations:
- Two MMR vaccines – given after twelve months of age and at least one month apart
- Diphtheria/ Tetanus vaccine within the last ten years
- Meningococcal vaccine within the last three years
• Three hepatitis B vaccines spaced at 0, 1 and 6 months
• PPD with results measured in millimeters
• Titers for rubella, rubeola, varicella and hepatitis B showing serological proof of immunity

Students who do not show immunity are revaccinated upon their arrival. All vaccines administered at SHS are free of charge, except for the meningococcal vaccine (Menomune) for which there is a $75.00 charge.

The Student Survey revealed that 65% of respondents feel that the “adequacy of immunization and screening for communicable diseases” is above average, 28% think it is average, and 7% rate it as below average. In the Student Health comments section, there was some concern that the most up-to-date vaccinations are not provided to students and that the meningococcal vaccine should be free of cost.

**Infection Control**

Students are educated on proper respirator fitting during second year of medical school. During Clinical Clerkship Orientation, students attend a 1.5 hour Infection Control Workshop covering universal precautions, proper handling of body fluids, needles, and other sharps, and what to do in case of exposure. These students receive a laminated pocket card which lists procedures to follow in case of exposure.

According to the Student Survey, 44% of the respondents feel that the “adequacy of teaching throughout medical school about prevention and occupational exposure to infectious diseases (e.g., Hepatitis B, HIV, etc)” is above average, 36% view it as average, and 20% as below average. However, in the comment section of the Student Health section, 14% of the respondents (n=86) feel that there is a “lack of education and support for students for students with needle stick injuries and other occupational hazards.”

**Recommendations**

- Increase accessibility and hours of operation of the SHS, including physician hours.
- Increase, and thereby improve awareness, of the availability of the Student Mental Health Service.
- Continue to explore additional options for comprehensive, cost-effective, healthcare plans for medical students.
- Whenever possible, ensure that physicians at SHS are not clinical faculty at the School.
- Offer all vaccinations at SHS free of charge.
- Continue to insure confidentiality and communicate scope of services offered at SHS.
- Increase awareness of student disability insurance.

**C. The Learning Environment**

**The Teacher-Learner Relationship and Student Mistreatment**

The Committee developed a Compact between Learners and their Teachers, adapted from the AAMC. This compact appears in the Appendix MS-32A. In addition, the Committee reviewed the School of Medicine’s policies on sexual harassment and student mistreatment and found that the policies were clear and in compliance with LCME standards. The Committee spent significant time discussing the effectiveness of these policies as described below.

**Evidence of Effectiveness**

A measure of the effectiveness of our system is that the students use the established mechanism to report instances of abuse. Anecdotally, there are fewer reports of mistreatment by the faculty and staff who have been counseled about their behaviors.

In addition, the results of the AAMC GQ show that overall, students complain less than or equal to their counterparts in most areas involving student mistreatment.
Have you personally been mistreated during medical school?

<table>
<thead>
<tr>
<th>Year</th>
<th>Yes NYU</th>
<th>Yes All Schools</th>
<th>No NYU</th>
<th>No All Schools</th>
<th>Count NYU</th>
<th>Count All Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>20.6%</td>
<td>20.0%</td>
<td>79.4%</td>
<td>80.0%</td>
<td>136</td>
<td>13813</td>
</tr>
<tr>
<td>2001</td>
<td>12.0%</td>
<td>17.1%</td>
<td>88.0%</td>
<td>82.9%</td>
<td>150</td>
<td>14133</td>
</tr>
<tr>
<td>2002</td>
<td>8.6%</td>
<td>16.5%</td>
<td>91.4%</td>
<td>83.5%</td>
<td>152</td>
<td>14159</td>
</tr>
<tr>
<td>2003</td>
<td>7.4%</td>
<td>15.0%</td>
<td>92.6%</td>
<td>85.0%</td>
<td>149</td>
<td>13632</td>
</tr>
<tr>
<td>2004</td>
<td>8.1%</td>
<td>13.5%</td>
<td>91.9%</td>
<td>86.5%</td>
<td>160</td>
<td>10683</td>
</tr>
<tr>
<td>2005</td>
<td>12.1%</td>
<td>12.8%</td>
<td>87.9%</td>
<td>87.2%</td>
<td>140</td>
<td>9440</td>
</tr>
</tbody>
</table>

Students who report mistreatment generally cite issues of mistreatment at similar or lower levels than the national average. In addition, those students citing instances of mistreatment usually do not feel the mistreatment to be serious enough to warrant reporting to the Dean’s Office or supervising faculty. Over the past several years, a maximum of two instances per year of student mistreatment have been reported to members of the Dean’s Office. In the past six years, only two faculty members have been removed from teaching positions due to instances of student mistreatment.

The results from the Student Survey correlate with the data from the GQs. Of the 673 students completing the Student Survey, 145 reported experiencing harassment or discrimination. Of these students, 35% reported experiencing favoritism, 26% slurs/offensive jokes, and 17% poor evaluations. However, it is difficult to draw conclusions based on these allegations of harassment or discrimination because it is not possible to determine the severity of these experiences. Of the 538 students responding to questions in the Student Experience section, 108 made comments regarding experiences of mistreatment. Most of these comments were made by clinical students, and the vast majority of cases of reported student mistreatment occurred in the clinical setting. Twenty-five students discussed incidents involving discrimination including racism, sexism and favoritism. These incidents ranged from offensive jokes or slurs made by clinical faculty members to favoritism toward female students by male faculty members. In addition, other students and other medical center employees also were cited as responsible for harassing comments or discrimination. Sixty-one students commented on incidents involving shouting, yelling, or other means of humiliation. Although some of the reported incidents were preclinical and involved preclinical faculty and administration, most involved clinical faculty and house staff, with incidents occurring most frequently in Surgery and Ob/Gyn. These two departments also garnered the most comments in regards to the assignment of tasks, work, or responsibilities for purposes other than the student’s education (“scut work”). The majority of responses to this question specified residents as the people assigning this type of work most often. Few students (8) reported incidents of persons taking inappropriate credit for work they have done. These situations most frequently involved clinical faculty, including both residents and attendings.

The Clinical Clerkship Evaluations completed by students at the end of each clerkship also provide information regarding the effectiveness of the School’s policies on student mistreatment. The data and comments provided by these evaluations parallel the data and comments received in the Student Survey and in the AAMC GQ. Ob/Gyn and Surgery were the clerkships with the most instances of student mistreatment, also as indicated in the Student Survey.

<table>
<thead>
<tr>
<th>Total Mistreated</th>
<th>Belittled/Humiliated</th>
<th>Physical Harm</th>
<th>Personal Service</th>
<th>Scut</th>
<th>Sexual Harassment</th>
<th>Bias</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2002 – June 2003</td>
<td>57</td>
<td>21</td>
<td>1</td>
<td>12</td>
<td>29</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>July 2003 – June 2004</td>
<td>77</td>
<td>32</td>
<td>0</td>
<td>9</td>
<td>37</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>July 2004 – June 2005</td>
<td>60</td>
<td>22</td>
<td>5</td>
<td>7</td>
<td>24</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>
Overall, the results of the AAMC GQ, Student Survey, and Clinical Clerkship Evaluations show that while incidents of student mistreatment do occur at the School, they generally occur at a frequency equal to or below those of the national average. Therefore, the policies that the School of Medicine has in place regarding student mistreatment seem to be effective in preventing student mistreatment and in handling allegations of it.

**Programs to Prevent Student Mistreatment**

The dissemination of the policies and procedures above and the creation of the feedback loop to clerkship directors and department chairs have set a standard of institutional non-tolerance of inappropriate behavior towards students. Other relevant policies (i.e., sexual harassment, anti-discrimination) also have been disseminated to the faculty and staff of the School.

The results of the Student Survey show that student awareness of school policies, including the policies on sexual harassment and student mistreatment, should be improved. Of all students, 39% rated their awareness of the School policies as “Average” and 33% rated their awareness as “Poor.” Only 23% rated their awareness as “Good” or “Excellent.” When asked to rate the appropriateness of policies and procedures for student mistreatment, 73% of students replied, “Don’t Know.” However, the vast majority (19% of total students) of those able to respond to this question rated the student mistreatment policies as “Average” or “Good.” In addition, in the AAMC GQ, the 2005 results show that only 45% of graduating students were aware of the School’s policy on student mistreatment:

<table>
<thead>
<tr>
<th>Year</th>
<th>NYU Yes</th>
<th>NYU No</th>
<th>All Schools Yes</th>
<th>All Schools No</th>
<th>Count</th>
<th>All Schools Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>50.4%</td>
<td>49.6%</td>
<td>49.6%</td>
<td>50.2%</td>
<td>135</td>
<td>13706</td>
</tr>
<tr>
<td>2001</td>
<td>72.0%</td>
<td>28.0%</td>
<td>67.3%</td>
<td>32.7%</td>
<td>150</td>
<td>14133</td>
</tr>
<tr>
<td>2002</td>
<td>74.3%</td>
<td>25.7%</td>
<td>70.3%</td>
<td>29.7%</td>
<td>152</td>
<td>14160</td>
</tr>
<tr>
<td>2003</td>
<td>71.1%</td>
<td>28.9%</td>
<td>69.6%</td>
<td>30.4%</td>
<td>149</td>
<td>13630</td>
</tr>
<tr>
<td>2004</td>
<td>63.8%</td>
<td>36.3%</td>
<td>69.5%</td>
<td>30.5%</td>
<td>160</td>
<td>10693</td>
</tr>
<tr>
<td>2005</td>
<td>45.0%</td>
<td>55.0%</td>
<td>57.4%</td>
<td>42.6%</td>
<td>140</td>
<td>9443</td>
</tr>
</tbody>
</table>

Therefore, it seems that while these policies may be appropriate and effective, the majority of the student body is unaware of them. These policies are included in the Student Handbook, which all students receive during New Student Orientation. Also during Orientation, it is mentioned where all of these policies may be found. Nevertheless, it appears that students remain unaware of many of the school’s policies regarding mistreatment. Therefore, it is recommended that students be reminded during New Student Orientation and again during Clerkship Orientation that these policies exist and where they can be located. These steps may help increase student awareness of these policies. Also, it is recommended that clinical faculty, especially house staff, be reminded of these policies on a regular basis in order to prevent student mistreatment from occurring.

**Recommendations**

- Adopt the Compact between Teachers and their Learners; ask students, house staff and faculty to formally agree to, and abide, by the Compact.
- Send the Student Handbook and a cover letter to matriculating students during the summer before their first year.
- Review and improve as needed the procedures for informing house staff and faculty of the student mistreatment policies.
Academic Policies

Standards and Policies
The School administration was able to provide the Committee with copies of the School’s policies from either University policy or the School of Medicine Student Handbook. Included in these policies are the presence of and the make-up of many committees including, but not limited to: the Preclinical and Clinical Boards on Academic Standing, the Standing Committee on Student Abuse, and the Disciplinary Committee of the School of Medicine.

However, the crux of this charge is assessing student familiarity with the listed policies. In the Student Survey there were multiple questions addressing this issue. One question stated: “Please rate your awareness of NYU School of Medicine policies (i.e., student advancement, disciplinary action, appeal, dismissal, sexual harassment, and student abuse).” The results were as follows:

Of note, more than 1/3 of students rated their awareness as “poor” or “unacceptable.” Students also were asked to “Please rate the appropriateness of the policies and procedures for disciplinary action.” Of note, 68% of the 633 students responding said, “Don’t know.” Similarly, more than 2/3 of the students responding answered, “Don’t Know” to the question “Please rate the appropriateness of policies and procedures for student mistreatment.” Overall, it appears that a majority of the students are not familiar with the current policies, despite their posting on the School’s website and their distribution at the beginning of the first year. In the comments section of the Student Survey, 25% of respondents (n=122) requested more clear and consistent administrative policies, including the need for an honor code.

Familiarity with the Alpha Omega Alpha (AOA) Selection Policy
In the Student Survey, students were asked to, “Please rate the extent to which you agree with the following statements:

- "I think it is clear how much the first two years of medical school are weighted toward acceptance into the AOA Honor Society"

- "Please rate the extent which you agree with the following statement: "I think it’s clear how much the final 2 yrs of medical school are weighted towards acceptance to AOA Honor Society""

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Of note, almost 3/4 of students disagreed with the statement when concerning the first two years of medical school, and nearly 2/3 disagreed when concerning the final two years of medical school. It appears from this survey that students are not familiar with the policies and procedures of acceptance into the AOA Honor Society. The explicit detailed description of the process by which students are confirmed for and elected to AOA was included for the first time in the 2006-2007 edition of the Student Handbook.

Access and Confidentiality of Student Records
The school has provided adequate information to assure both access to and confidentiality of student records, in compliance with the FERPA guidelines. Questions in regards to this were included in the Student Survey. Results of the question “Please rate the confidentiality of student records,” were as follows:

Notably, half of the students responding replied, “Don’t Know.” Familiarity seemed to increase among students in the upper classes.

Similarly, when asked to rate the availability of student records (e.g., grades, evaluations, etc.) for review and challenge, 43% responded, “Don’t know.” Again, familiarity seemed to increase with upper classes, although the overall trends stayed the same.

In the comments sections of the Student Survey, some students expressed discontent with the access to exams and grading strategies (n=122):

- Seven percent of respondents feel there is great difficulty in viewing exams, learning from mistakes on exams and challenging these grades.
- Eleven percent of respondents believe that there need to be more clearly stated policies for determining clerkship grades, consistency of these policies across all clerkships and better access to evaluations, including the ability to challenge grades.

Appeals of Academic Recommendation
A student who objects to a recommendation of the Board may petition the Dean for a review of its action.
This appeal must be in writing, state the basis for the student's objection, and be received by the Dean within two weeks of the date the Board notified the student of its recommendation. The basis for an appeal would be discovery of new information that was not available to the Board or evidence that the School of Medicine Academic Guidelines were applied unfairly.

The appeal will be heard by an Appeals Committee consisting of three senior faculty appointed by the Dean. The Appeals Committee shall act upon the appeal as soon as is practical after appointment by the Dean. The Appeals Committee shall review the Board's recommendations and, in so doing, it shall hear the student in person if the student wishes to make a personal appearance before it; shall review such records as it deems pertinent, including a personal written statement submitted by the student; and shall, if it deems necessary, review any report by, or consult with representatives of, the Board. The Appeals Committee shall submit a written report of its review, including a recommendation to the Dean. The Dean shall convey a written decision on the appeal to the student. The Dean's decision will be final and binding.

Clerkship Grading Policy

The grading policy algorithm for each clerkship is provided in hard copy and/or on the clerkship website in most clerkships and addressed directly by the clerkship director on the first day of each new rotation. Students with questions/issues with grades have a three-week window after receipt of their grade in which to meet with the respective clerkship director and review all of the data that contributed to the grade. Beginning in 2006, a formal second step was added to the grade clarification process. If, at the conclusion of his/her meeting with the clerkship director, the student still questions the grade obtained, he or she can request a formal grade review by a panel of three other clerkship directors convened by the Senior Associate Dean of Education and Student Affairs at the conclusion of a full academic year. All of the information that contributed to the student’s grade will be reviewed against the grading algorithm used for the entire class. The panel may recommend no change, an increase, or a decrease in grade. The decision of the panel is binding. If re-grading is warranted based upon that analysis, explanation of the process that led to the re-grade will be sent by the clerkship director to the Senior Associate Dean for Education and Student Affairs for approval prior to submission of any grade change to the Registrar.

Recommendations

- Convene a task force to revisit whether the School of Medicine should implement an honor code.
- Publicize policy and procedure for determination of AOA status, now included in the Student Handbook.
- Delineate clear policies for the appeal of clerkship grades and have them easily accessible via the curriculum webpage; provide this information verbally at the beginning of every clerkship.

Student Study and Recreational Spaces

Student Study Space

The Coles building was opened in 1971 and, with the renovation of its 2nd and 3rd floors in 1998, it was renamed the Martin L. Kahn Teaching and Learning Center. This facility is one of the primary teaching sites for the first two years of our medical school curriculum.

While the 1998 renovation of the 2nd and 3rd floors added six small group teaching rooms and six new laboratories (five of which can be divided in half to provide ten additional small group teaching/study rooms), the amount of space in the Coles building is barely adequate to meet the study space needs of the student body. Additionally, the fact that the conference rooms on the 1st floor (with the exception of Coles 105) are in poor condition further limits the study space options of the student body. The renovation of Alumni Hall C partially addressed the lack of study space available to students; it accommodates roughly 59 students. It should be noted that although the medical library provides a limited amount of study space, students from the other NYU graduate schools (especially the School of Dentistry) and general medical center community compete with the School of Medicine students for this space. The library is open 24 hours a day from Sunday at noon until Friday at 9:00 p.m. Hours on Saturday are 10:00 a.m. to 8:00 p.m.
The Faculty Dining Room, Cafeteria Annex, and Student Cafeteria are also utilized by a limited number of students after operating hours (i.e., after 2pm, Monday-Friday) to study. However, these areas are not very conducive to studying because they are often times noisy and have poor lighting. The lecture auditoriums (Schwartz E and F) and smaller Schwartz classrooms also can be utilized after hours as a study space. Coles 201 offers slide and transcript printing to students free of charge and also provides 29 seats which can be utilized for individual or group studying.

In regards to accessibility, the Faculty Dining Room, Coles laboratories and small group seminar rooms are only accessible with medical student ID after 5pm and on weekends; Alumni Hall C is accessible only by medical student ID at all times.

In the previous LCME self-study, two recommendations regarding study space were proposed:
- Restrict access to study space facilities by increasing the use of card access.
- A new study space facility, equal in quality to Alumni Hall C, should be identified and renovated.

The first recommendation has been addressed and potential sites for additional study space are being evaluated. The current LCME Student Survey once again points to the lack of quality study space at the School of Medicine. Forty-five percent of the respondents (n=138) commented on this issue. The Committee concluded that the size of the student body necessitates that the School provide more places for students to study.

**Lounge and Recreation Areas**

The student lounge, located in Rubin Hall, was recently renovated and provides students with a variety of entertainment options. The lounge features three, big screen, entertainment centers, a piano room, poker table, pool table and a dark room. Additionally, there are a variety of other games available, including an air hockey table.

Greenberg Hall does not provide students with a lounge area, but it does provide students with a courtyard in which to host events or enjoy some fresh air.

There is a basketball court located on the roof of the Dean’s offices that is heavily utilized by students for a variety of activities ranging from basketball to soccer. The Rubin Gym was recently renovated and several new pieces of equipment were installed. Students are provided with a bike storage facility.

The preponderance of comments on the current LCME Student Survey regarding recreational facilities were directed toward the Rubin Gym. Many students felt that the gym was unacceptable on many fronts, including its size, aesthetics and general maintenance of the facility. While there were many positive comments in the Student Survey regarding the basketball court, a significant number of students pointed out that the adjacent space, currently covered with rocks, is underutilized.

**Personal Storage Facilities**

Student lockers currently exist on the ground floor of the Medical Science building and on the second and third floor of the Teaching and Learning Center. Students are able to utilize the resident/physician lounge or locker room at most clinical sites to store personal belongings.

**Recommendations**
- Continue to reevaluate the current usage of space in efforts to establish additional study space.
- Evaluate the possibility of relocating Rubin Gym and/or obtaining corporate rates for an off-campus gym.
- Provide students access to the Skirball and Smilow conference rooms in the evenings when they are not utilized.
• Cover the large expanse of underutilized space by the basketball court with grass or artificial turf. Purchase benches and other types of seating so students can enjoy this recreational area.

Student Survey
In addition to addressing the charges put to the Committee, the Medical Students Committee reviewed the results of the Student Survey as a whole with the goal of ensuring that both the strengths and weaknesses of the school as demonstrated in the survey were adequately represented in final LCME report. While the final survey analysis details the depth and breadth of student thoughts and concerns about NYU School of Medicine, it is appropriate to excerpt several paragraphs of the Executive Summary that encapsulate the results of the Student Survey.

First, the survey was designed and explained to students as a way “to make their opinions heard” and as a chance “to improve those areas of the school that need improvement while enhancing the strengths of the school.” As a result, the comments provided by students contain much constructive criticism. Prior to the comment analysis, therefore, it is important to contextualize student thoughts on the School with the raw numbers from the student survey.

Overall student satisfaction in the survey was extraordinarily high – the published numbers speak loudly for themselves. A few highlights, however, demonstrate these facts. In Questions 24-7, more than 80 percent of all respondents rate their overall experience at the School as either “good” or “excellent,” with fewer than 5 percent of the responding members of the student body rating their experience as anything less than average. Students consistently rate the educational experience to be above average, with 66 percent of clinical students describing their interactions with clinical faculty as “good” or “excellent” and only 7 percent of students rating those interactions as less than average (questions 6-36). Similarly, more than half of the clinical students describe their experiences on all clinical rotations as above average and 86 percent of students describe rotations at Bellevue Hospital (where the majority of rotations are completed) as either “good” or “excellent” (questions 6-12). In aggregate, 70 percent of students rate their interactions with faculty during the pre-clinical years as “good” or “excellent,” while only 6 percent of students rate those experiences as less than average (questions 5-15). Satisfaction with issues related to student life was equally well-represented in the survey. More than 87% of responding students rated their overall satisfaction with the Office of Student Affairs as better than average (questions 16-2).

The high marks described above were not evident in all 24 sections of the student survey. Certain sections, including those on information technology and housing as it relates to Rubin Hall, received poor approval ratings from a majority of students. However, the clearest indications of student thoughts on which aspects of the school require improvement come from the final section of the survey in which students were asked to select the five areas they felt were most in need of improvement. Topping the list were housing and information technology, followed by the Master Scholars Program, the Professionalism Portfolio, eating facilities, financial aid, study spaces and certain aspects of the academic program. Specific student thoughts on improving these areas are detailed below in the comment analysis.

As might be expected in a survey of this magnitude, the tone of student comments varied dramatically. A number of students corroborated the trend from the numeric data in the survey, expressing sentiments that the NYU School of Medicine has provided them with an exceptional medical education and has been a wonderful experience. The majority of the students who made comments in the survey, however, clearly stated that they wanted to use the survey to highlight the exemplary areas of school functioning while identifying those areas in need of improvement in an effort to enhance the quality of education and the quality of life available to NYU medical students now and in the future. Three general areas for improvement were identified in reviewing the comments:

1. Better dissemination of information to students
2. Improved infrastructure at the medical school, both physical and technological
3. More consistency in the overall educational program
When working well, each of these themes was highlighted by students as models for how the other areas of the school could be improved; when inadequate, these themes were repeatedly mentioned by students as the sources of the greatest frustration during medical school.

IV. Report of the Faculty Committee

The Faculty Committee formed as part of the LCME self-study had representation from various faculty constituencies, including department chairs, senior and junior faculty, basic science and clinical departments, and part-time and full-time faculty. The Committee reviewed the School’s progress in the faculty realm since the last LCME self-study and overall, was very pleased with the results.

In order to effectively reflect upon and answer the self-study charges, many of which were relevant to a broader swath of faculty, the Committee chose to form multiple subcommittees. An Information Technology Subcommittee, chaired by Ruth Lehmann, PhD, invited Information Technology leadership to a Committee meeting and, based upon the discussion, formulated several recommendations. Due to the overlap of the Information Technology Subcommittee’s recommendations with those concurrently generated in other working self-study committees, the specific recommendations from Dr. Lehmann’s subcommittee were then forwarded to the Information Resources and Library Services Subcommittee of the Educational Resources Committee for consolidation and inclusion in their report.

A Junior Faculty Subcommittee, chaired by Deborah Yelon, PhD, generated and distributed electronically a survey to all junior faculty. The purpose of the survey was to evaluate the effectiveness of the current mentoring and feedback systems which were instituted since the last self-study. The response rate was 52%.

A Clinical Educational Environment Subcommittee, chaired by Harold Weinberg, MD, PhD, developed a survey of all voluntary clinical faculty which was distributed electronically. Given the very large number of individuals in the potential set of respondents, the response rate was low. Nevertheless, a large number of physicians participated in the survey and, therefore, the Committee believes that there were issues brought to light which deserve further discovery and discussion.

A General Faculty Subcommittee, chaired by Bruce Bogart, PhD, designed a survey that was distributed electronically to all full-time faculty of the School. The purpose of this survey was to determine how informed the faculty was about school issues of faculty participation in education and school governance. It also included issues that were of general interest to the faculty. The response rate was 43% of our full-time faculty.

A. Number, Qualifications, and Functions

The period since the last self-study in support of re-accreditation by the LCME has included the largest expansion of the faculty in decades. Since the arrival of Dean Glickman in September 1998, new chairs have been recruited to lead 16 of the 28 academic departments; of these, nine were recruited from outside of the New York metropolitan area. Table 1 shows recruitment of faculty into the full-time academic tracks between September 1, 1998 and August 2006.

<table>
<thead>
<tr>
<th>Category</th>
<th>Total Recruited</th>
<th>On Faculty as of August 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate tenure</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Tenure track</td>
<td>239</td>
<td>157</td>
</tr>
<tr>
<td>Full-time non-tenure track</td>
<td>511</td>
<td>391</td>
</tr>
<tr>
<td>Total</td>
<td>792</td>
<td>590</td>
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On average, 90 new, full-time faculty members have been recruited in each of these eight years, and there has been a loss of only 3.1% of new recruits per year.
A portion of these recruits – initially 77 and now an expectation of 120 – were identified as part of the plan of faculty expansion and renewal referred to as the “Growth Agenda” for the Glickman administration. The totals and departmental distributions of those hired in this category are shown in Table FA-2. Of the 792 faculty members in Table FA-1, 61 were identified as needed additions to the standing faculty and considered part of the Growth Agenda. This number is projected to double with the opening of the Smilow Research Building and the completion of the Growth Agenda expansion.

Table FA-2. Growth Agenda Recruitments

<table>
<thead>
<tr>
<th>Department</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>Totals</th>
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<tr>
<td>Anesthesiology</td>
<td></td>
<td></td>
<td></td>
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<td>1</td>
<td></td>
<td></td>
<td>1</td>
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<td>Biochemistry</td>
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<td></td>
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<td>2</td>
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<tr>
<td>Cancer Center</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
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<tr>
<td>Cell Biology</td>
<td></td>
<td></td>
<td></td>
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<td>1</td>
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<td>1</td>
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<tr>
<td>Dermatology</td>
<td>1</td>
<td>1</td>
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<td>2</td>
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<tr>
<td>Medicine</td>
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<td>1</td>
<td>5</td>
<td>6</td>
<td>3</td>
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<td></td>
<td>16</td>
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<td>Microbiology</td>
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<td>1</td>
<td></td>
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<td>3</td>
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<tr>
<td>Ob/Gyn</td>
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<td>3</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Parasitology</td>
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<tr>
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<tr>
<td>Pediatrics</td>
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<td>2</td>
</tr>
<tr>
<td>Pharmacology</td>
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<td>1</td>
<td></td>
<td></td>
<td></td>
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<td>3</td>
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<tr>
<td>Psychiatry</td>
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<td></td>
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<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Radiation-Oncology</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Radiology</td>
<td></td>
<td></td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Skirball Institute</td>
<td>1</td>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

| Grand Total     | 4    | 7    | 11   | 13   | 11   | 3    | 12   | 61     |

While Skirball Institute is listed as a separate department, all faculty recruited to the Institute have primary faculty appointments in one of the traditional departments.

Recruitment and Retention

We interpret these data to indicate that there are no insurmountable barriers to recruitment to the School. Chairs and their laboratories have been relocated from as far away as California and Great Britain. The recruitments have followed extensive academic searches which have identified excellent rosters of candidates.

To determine the key factors which facilitate or hinder recruitment and retention, we asked the deans, institute directors, recruiting chairs and the chairs of the Recruitment Advisory Committee, a group charged with the coordination and oversight of recruitment to the new Smilow Research Building, to list the most important positive and negative factors they have encountered.

The factors which have facilitated recruitment and retention include: 1) the location of the School in New York City; 2) the review and annual approval by the Trustees of a rolling 10-year budget plan which incorporated the Growth Agenda recruitments from the outset; 3) the inclusion of the necessary recruitment funds in the annual budgets; 4) a large and diverse faculty with expertise in many areas; 5) the new ambulatory cancer center; 6) a re-funded cancer center grant from the NIH; 7) a packed, linear array of

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primary, teaching, affiliated hospitals along First Avenue that represent archetypes of the federal, municipal and private health care systems with the resulting diversity of patient populations; 8) the standing of the entire University; 9) the outstanding medical, graduate, and postgraduate students at the School; 10) a top ten e-resource library; 11) the ability to support a two-career family in the New York area; and 12) a spirit of renewal that accompanied the first new administration of the medical center in several decades.

The factors which have hindered recruitment and retention include: 1) the high cost of housing and living in New York City and a lack of university-subsidized housing for faculty, graduate students and postdoctoral students; 2) the lack of some “core” facilities for research and the inability to define what cores ought to be present in the Smilow building; 3) scarcity of office and laboratory space for clinical faculty; 4) an aging research infrastructure in many sites, including the Medical Science Building (MSB), Tisch Hospital and Bellevue, which has now been partially alleviated by the opening of the Smilow Research Building; 5) despite the new facilities of the last eight years, lack of space for expansion; 6) an IT service that was split after the merger of NYU Hospitals Center with Mount Sinai Hospital, with separate units servicing the School and clinical facilities (just now being reunited under a single administration) and which is deemed under-resourced for modern research; 7) the absence of portable tuition benefits; 8) lack of adequate assistance in school placement for faculty children; 9) inadequate child care provisions; and 10) lack of funded, protected time for clinical faculty.

Faculty Diversity
The School of Medicine has made considerable efforts in the area of diversity. The Dean’s Council on Institutional Diversity and the Dean’s Committee on Women were established since the last LCME self-study by Dean Glickman to assess and improve diversity in all areas of the Medical Center. Two subcommittees of the Council on Institutional Diversity, the Leadership and the Faculty subcommittees, shared the charge of assessing and recommending on faculty recruitment and retention policies and practices. After conducting evaluations which included interviews with department chairs and underrepresented minority faculty, the two subcommittees drafted and submitted recommendations to enhance recruitment and mentoring activities which are already in place. The findings by the Council and the LCME Student Survey indicate the need to improve recruitment and retention practices in order to provide role models for students and a workforce that more adequately reflects the patient population. The Leadership and Faculty Committees are currently working on development of guidelines for search and screening for faculty and a diversity-focused faculty mentoring program, respectively.

Recommendations
• Develop a formal mechanism for the responsible recruiter to inform the administration of the reasons for failure to recruit any leading candidate, with the ultimate goal of tracking and identifying centrally the common reason for any failed recruitments so that they can be remedied in the future.
• Develop a formal mechanism for exit interviews of established faculty who leave the institution to pursue other career opportunities in an effort to identify weakness in our faculty infrastructure.

Development of Faculty Teaching and Evaluation Skills
There are a number of opportunities for faculty members to improve their teaching and evaluation skills. OME is a central resource available to faculty for curriculum planning and development, assessment of the effectiveness of course objectives, and design and implementation of teaching and assessment modalities.

Curriculum Development
The OME collaborates and provides guidance to faculty in development of curriculum, assessment of curricular and student needs, design of course organization and structure, creation of goals, objectives, and syllabi, and assessment of students. In these areas, OME assists the faculty in incorporating sound educational practices and theories and provides the relevant faculty development. A recent example of new curriculum development was the Disabilities Curriculum introduced in academic year 2005-2006. OME orchestrated the development of this curriculum with key faculty members from the Department of
Rehabilitation Medicine, the Skills and Science of Doctoring module, and United Cerebral Palsy of New York. Evaluations of the curriculum by students, faculty and patients with disabilities were overwhelmingly positive (see Appendix). Another recent example is the development of a Pain Curriculum in 2004. OME worked with individuals from the Skills and Science of Doctoring and the Mechanisms of Disease: Nervous System modules to integrate pain management into the first two years of the curriculum. In addition to the two examples above, other specific interventions developed in concert with OME and the module/clerkship directors (i.e., OSCE’s, cyber classrooms) have been rated very highly by the students. The OME fosters faculty awareness of the elements of teaching that drive learning (i.e., “assessment drives curriculum,” student-centered teaching).

Module/Clerkship Evaluation
All courses and clerkships are evaluated by students using a web-based evaluation system. This system allows for timely feedback to module directors and departmental chairs for the continuous improvement of courses. The OME provides guidance to faculty in effectively evaluating modules and units (i.e., developing questions and creating effective reports from the evaluation data). This evaluation data can be used for targeted faculty development sessions, either at the individual or at the course level. Issues with an overall module or unit may be identified via this mechanism, and OME will then intervene with appropriate faculty development activities. In the clerkships, additional focus has been on the comparison of educational experiences at the various sites, in order to identify sites which may need assistance with their teaching efforts.

Teaching Skills and Methods
OME conducts individual consultation and departmental sessions directed at giving guidance in analyzing and enhancing teaching skills. These sessions are directed at the improvement of small-group teaching skills, lecture skills, techniques for conducting bedside teaching, and the use of innovative technology during lectures, among other topics. Faculty members may ask OME for assistance, or they may be identified via the course evaluation system or module directors. For example, over the past few years, OME has worked with the module directors in the first two years to institute evaluations of individual lectures, conferences, and labs. Department chairs and module directors receive detailed reports on these evaluations and may request interventions with faculty members to improve their teaching skills. We also have piloted detailed evaluations of clinical and teaching skills of the attending physicians and residents in the Surgery Clerkship. Expansion of this system into other clerkships is anticipated.

OME has worked with key faculty in our academic departments to develop a number of web-based resources for faculty development and has plans to develop more. In addition, OME provides links to useful educational resources developed by outside organizations and institutions, and is the focal point for collaborative faculty development programs with the Graduate Medical Education Committee and the NYU Office of Organizational Development and Learning (ODL).

Student Assessment
OME assists module directors with creating higher-order cognitive assessments with which to assess students. In conjunction with module and clerkship directors, OME developed high fidelity exams, such as OSCEs, which are used throughout the curriculum. OME guides module and clerkship directors in the development of both formative and summative assessments appropriate to the course or clerkship objectives. In addition, OME confers with basic science faculty, guiding them on how to construct written test questions and do item analyses of exams in the preclinical curriculum.

On a systems level, StudEval (our web-based student assessment system) was developed by OME and the clerkship directors and was targeted at consistency of grading, with a goal of more accurate reflection of student skills. As part of the development of StudEval, OME led an effort to determine the overarching assessment criteria used throughout the clerkships.
Topics in Medical Education and Technology Seminar Series
A new seminar series, “Topics in Medical Education and Technology,” jointly sponsored by OME, the Frederick M. Ehrman Medical Library, the Section of Medical Informatics of the Division of General Internal Medicine, and Advanced Educational Systems was introduced in the Fall of 2005. Topics have included pedagogical as well as practical technology and educational innovations for teaching across the continuum of medical education. This seminar series for faculty is a forum through which to highlight new ideas in medical education and technology, and to foster discussion of and engender innovative approaches to utilizing technology to enhance teaching and learning of medicine.

Departmental Activities
In addition to OME, there is a cadre of School of Medicine faculty with a strong grasp of educational theory and best practices in many departments. These faculty often run faculty development activities within many of the academic departments. For example, the Division of Primary Care developed an Observation and Feedback web-based module, which was piloted within the Department of Medicine and is now available to all clerkships as well as residency and fellowship training programs. There are some departmentally-based activities which focus on the residency and fellowship programs. For example, the Division of Pulmonary and Critical Care and the Division of Cardiology in the Department of Medicine recently hosted a joint dinner session for their faculty that focused on enhanced teaching and evaluation skills. The format of this event was presented to the Graduate Medical Education Committee for use by other departments and training programs.

On the General Faculty Survey, 60% of respondents were neutral or agreed with the statement, “The School provides adequate assistance to improve my teaching, including departmental mentors, training sessions and educational specialists.” The Committee believes that the 40% of faculty who disagree with this statement may do so because of: 1) the lack of awareness of those faculty not integrally involved in teaching of the available resources; and 2) the supply of faculty development activities not meeting the demands of faculty. The clinical faculty often needs only rudimentary resources (i.e., clinical space) to teach, and with the relative scarcity of these resources, the Committee believes that many of the negative responders may be referring to this impediment. In addition, the structure of the question does not allow us to separate with which of the three elements the faculty was dissatisfied.

Future Activities
OME is currently working with ODL to develop a systems-based model of faculty development by leveraging OME and departmental faculty development sessions to reach a broader audience. The proposal is to develop and offer a series of broadly-based faculty development activities to enhance teaching skills, in collaboration with ODL and a growing group of faculty with enhanced teaching skills. The system would utilize multiple approaches, including train-the-trainer and workshops led by experts.

Recommendations
- Enhance the system for delivery of faculty development activities.
- Create a website to serve as a faculty development clearinghouse, which would include creation and enhancement of web-based modules and web-based resources.
- Develop a mechanism by which to recognize the quality of teaching.
- Increase awareness of current teaching and evaluation activities (i.e., Topics in Medical Education and Technology seminar, other central and departmentally-based efforts).

B. Personnel Policies
The written appointment and promotion guidelines are distributed in hard copy at the time of employment, and are contained in Faculty Handbook of New York University and the Revision to the Policies and Procedures for Appointment, Promotion and Tenure at the School of Medicine (both located on the Education, Faculty & Academic Affairs website: [http://www.med.nyu.edu/faa/resources](http://www.med.nyu.edu/faa/resources)). They were revised in April 2002. Several discrete events led to this revision. First, Dean Glickman was appointed and felt that
a review of our titles and system of appointment and promotion was necessary. Second, the self-study conducted by the faculty in preparation for the LCME’s 2000 site visit called for improvements in the system, including clarity in and dissemination of the requirements for promotion and tenure. The accreditation report of the LCME 2000 Site Visit Team highlighted this point and the need to create a system of tracks that were comprehensible to all. In the summer of 1999, the Dean appointed a Committee on Appointments, Promotion and Tenure. The resulting proposal was refined during academic year 2000-2001 through a series of discussions with broad faculty representation. The final proposal was approved unanimously by the Faculty Council and the Council of Departmental Chairmen in 2001.

There are now six academic tracks in the School of Medicine:

- Investigator/Educator Track: A full-time, tenure track for those faculty members in any department whose primary career is in independent, investigator-initiated research and who devote some time to education and service.
- Investigator Clinical/Educator Track: A full-time, tenure track for those faculty in the clinical departments whose primary career combines independent research with clinical activities and who devote some time to education and service.
- Clinical Investigator/Educator Track: A full-time, non-tenure track for those faculty members in clinical departments whose primary career is in the provision of clinical care and who devote a substantial portion of their efforts to teaching, research, and service.
- Research/Educator Track: A full-time, non-tenure track for those faculty in any department whose primary career is in research, but who devote a portion of their efforts to education and service.
- Clinical Track: A part-time, non-tenure track for those faculty members in clinical departments whose primary career is in the provision of clinical care and who devote some time to teaching, research, and/or service.
- Research Track: A part-time, non-tenure track for those faculty involved in part-time or time-limited research in other’s laboratories and who devote limited time to teaching and service.

In terms of communication of these policies, every new faculty member at the time of his or her initial appointment receives a link to the Faculty Affairs website, which contains links to the Faculty Handbook, Revision to the Policies and Procedures for Appointment, Promotion and Tenure at the School of Medicine and the Report of the Committee on Expectations Regarding Teaching. In addition, the Vice Dean for Education, Faculty & Academic Affairs meets annually with the non-tenured faculty to reiterate these policies. The presentation is distributed electronically for those who are unable to attend this meeting. There are mandated meetings of each department’s Appointments and Promotions Committee, which the Committee believes leads to increased awareness of these policies. The clarity and dissemination of the revised guidelines have been well-received, and policies have been followed consistently since the revisions went into effect. Faculty awareness of the guidelines is very good; for example, in the Junior Faculty Survey, 75% of respondents were aware that promotion to tenure requires periodic assessments at years three and six, which is a key facet of the revised policies.

**Recommendation**

- Post the rosters of members of the School and departmental Appointments and Promotion Committees on the Faculty Affairs website to increase faculty awareness.

**Institutional and Departmental Conflict of Interest Policies**

The School of Medicine has multiple levels of scrutiny of faculty member conflict of interest. At the individual, personal level, all faculty members at the School must abide by the Conflict of Interest policy, which is published in the NYU Faculty Handbook (www.med.nyu.edu/faa/resources). In accordance with this policy, on an annual basis, faculty members must complete a form disclosing any potential conflicts, which is then returned to the Dean’s Office. Any conflicts must be resolved to the satisfaction of the Dean, and this information is reported to the University.
For those faculty members engaging in research activities, there is a School of Medicine addendum to this aforementioned policy, which can be found on the Sponsored Programs Administration website (http://www.med.nyu.edu/spa/policies/nyusom/conflictofinterest.html). With each grant submission, all key personnel must submit a financial disclosure form that identifies any potential conflicts of interest.

The Conflict of Interest Committee, composed of faculty members, reviews research protocols in which an investigator discloses a conflict of interest. Working with the investigators, the Committee members devise a plan for managing the conflict of interest where necessary. Management plans have included: disclosure, inclusion of other faculty members to evaluate or oversee research and on occasion, exclusion of faculty members from the research.

Any faculty members participating in a Continuing Medical Education activity must abide by the CME Conflict of Interest policy, which ensures compliance with School and ACCME regulations.

At the corporate level, there is the Conflict of Private Interest policy: (http://www.med.nyu.edu/compliance/audit/conflicts.html).

The Committee believes that the School appropriately scrutinizes faculty member conflict of interest. However, the current procedures may require a faculty member to disclose multiple times per year.

**Recommendation**
- Review the School’s Conflict of Interest policies to determine if they could be better integrated.

**Feedback on Academic Performance**
There are several mechanisms by which faculty members at the School receive feedback from their departmental leaders about their performance and progress toward promotion. An improvement since the last LCME site visit was the introduction of a standard offer letter template for new faculty or for those who are changing responsibilities. This offer letter clearly indicates the job responsibilities and expectations of the faculty member. During their probationary period, faculty members are informed annually by the Chair or his/her designee of their prospects of being recommended by the Department for promotion or the granting of tenure. A formalized review on promotion and/or tenure prospects by the Chair and the Departmental Appointments and Promotions Committee is completed in the third and sixth year of service for all assistant professors, assistant curators, and associate professors in full-time tracks. The Dean notifies the Department Chair when these two formal reviews are due. When each of these reviews is completed, the Chair notifies the Dean and the faculty member of the outcome. If the likelihood of being recommended for promotion and/or tenure is low, the Chair advises the faculty member of his/her options. This notification includes the names of the members of the Departmental Appointments and Promotions Committee who reviewed the candidate’s credentials.

Additionally, each full-time junior faculty member has a mentoring committee, the goal of which is to provide the faculty member with a critical assessment of his/her progress. The committee is a resource through which the faculty member can seek advice regarding general and specific questions concerning her/his roles in the Department and the School and the Departmental expectations for her/his academic career, including clinical activities, teaching, research, and scholarly achievements. The mentors may serve as a source of practical advice regarding preparation of manuscripts, grant applications, and presentations in teaching or research seminar venues. The mentoring committee consists of at least two senior faculty members selected by the junior faculty member in consultation with his/her Chair, and this requirement is written in the standard offer letter for all new faculty members. This mentoring committee meets once per year to discuss the following: clinical activities (where appropriate), current research directions, current and planned funding sources, publications, teaching activities and performance, invited lectures, other achievements, and committee and service contributions. A yearly written report by the mentoring committee is provided to the faculty member, as well as to the Department Chair.
The current review and mentoring mechanisms are relatively new initiatives, put into place in 2002. To assess the level of understanding, utilization, and effectiveness of these mechanisms among the junior faculty, the LCME Faculty Committee conducted a survey during the month of April 2006. The survey was distributed to all current junior faculty, and the overall response rate was 52%. The survey indicated a high level of awareness regarding review and mentoring policies. Sixty-three percent of respondents were aware of the requirement for a mentoring committee for junior faculty. Members of basic science departments were more aware than members of clinical departments (76% vs. 59%), and tenure-track faculty were more aware than non-tenure-track faculty (79% vs. 41%). Mentoring committees, where utilized, are proving to be worthwhile. Forty-six percent of respondents reported that they have a mentoring committee. Of those who do not have a mentoring committee, the most common reasons cited were the lack of awareness of the concept and the lack of awareness of the requirement. Of those who did have a mentoring committee, 53% were satisfied or strongly satisfied with their experience, and an additional 34% were neutral. A variety of positive outcomes were reported to result from the mentoring committee process, including advice regarding research directions (51%), clinical activities (27%), teaching responsibilities (28%) and funding opportunities (28%), assessment of promotion/tenure readiness (39%) and general positive reinforcement (57%). However, only 29% of respondents received a written report after their mentoring committee meetings, indicating a need to improve the consistency of reporting procedures. Overall, 83% of respondents believe that mentoring committees should be required. Of the suggestions for improvement, the most common were to publicize the requirements and to clarify aspects of the process.

It is clear that the recent changes in faculty review and mentoring procedures have had a profound effect on the academic culture at the School, leading to significant changes in the faculty development process. This cultural shift is still in progress and is expected to move toward broader enhancement of feedback and mentoring throughout the faculty environment. The faculty response to the feedback and mentoring policies has been overwhelmingly positive in the cases of departments and individuals who have embraced the procedures. However, there are problems in permeating all departments evenly and in getting a wide array of senior faculty involved. Senior faculty participation in mentoring committees should be encouraged and, where possible, administrative support for organizing committee meetings should be considered, especially in the clinical departments where administrative support for junior faculty is less common. The Committee believes that overall there has been much progress in this area since the last LCME self-study, but that there still remain issues with communication of the policies.

**Recommendations**

- Verify that mentoring meetings are being held.
- Continue to publicize the mentoring committee requirements and processes both through the Office of Education, Faculty & Academic Affairs and the academic departments.

**Value Placed Upon Education by the Institution**

Education has been one of three major elements of the School’s mission since its founding and, in the last several years, has been elevated in value to the institution through a series of specific activities. Today, the School offers education to diverse learners in multiple programs including:

- The Salk School of Science: A magnet middle school of science, jointly founded by the School and the Board of Education of the City of New York.
- The Summer High School Fellows Program: Founded over 15 years ago, this program brings underserved city youth to discover careers in biomedical science.
- The Summer Undergraduate Research Program: Directed at under-represented minority college students, this highly competitive program produces a very high yield of undergraduates entering medical and graduate studies.
- Undergraduate Medical Education: One-hundred sixty students per year are admitted to the School.
- Graduate Biomedical and Postdoctoral Programs: Two hundred forty-nine graduate students and 350 postdoctoral fellows are enrolled in the Sackler School of Graduate Biomedical Education,
administered and offered by the School, with its degrees granted by the Graduate School of Arts and Sciences of New York University.

- Medical Scientist Training Program: One of the oldest MD/PhD programs in the country; 76 students are enrolled.
- Graduate Medical Education: Some 1100 residents are enrolled in over 70 programs sponsored by the School at a network of some twelve affiliated hospitals.
- Continuing Medical Education: Approximately 175 programs of the Postgraduate Medical School are offered annually to international audiences who study using media from podcasting to interactive, real-time Web- and video-casting.

The valuation of teaching and its role in appointment, promotion, retention and tenure has been the topic of two, major, faculty-driven reviews colloquially referred to as Artman I and Artman II after the chairman of both. Artman I produced the Revision to the Policies and Procedures for Appointment, Promotion and Tenure at the School of Medicine. This revision specifically recognized both the responsibility of the faculty to teach and the requirement and opportunity for advancement through teaching. The report describes the responsibilities: “In addition to research and scholarly activities, all tenure track faculty members are required to participate and demonstrate a high level of effectiveness in teaching. In basic science departments this usually occurs in lecture rooms, small discussion groups, seminars and laboratories, and in the supervision of medical and graduate students and postdoctoral trainees. Teaching activities in clinical departments also involve the supervision of students as well as residents, fellows and other professionals and may occur in ambulatory facilities, at the bedside or during clinical rounds (in addition to the venues described for basic science departments). Every faculty member should maintain a teaching portfolio that contains information regarding this aspect of his/her career, as well as documented participation in extramural teaching activities at regional, national, and international levels.”

The traditional criteria were further modified to allow the awarding of tenure on the two tenure tracks, and the awarding of promotion on the two non-tenure tracks as described with each track, “Faculty members in this track who have achieved extraordinary distinction as educators and scholars in pedagogical topics may be promoted and awarded tenure on the basis of their superior teaching accomplishments.” Since the adoption of the Revision in April 2002, five faculty members were awarded tenure or promoted to associate professor because of their achievements in teaching. In addition, the departmental appointments and promotions committees of each department and the School’s Appointments and Promotions Committee consider teaching quantity and quality specifically in their deliberations about appointment, promotion and/or tenure.

Artman II produced a new Report on Expectations Regarding Teaching. Two relevant portions from the Introduction which further define the School’s valuation of teaching follow.

We, the faculty and administration of the NYU School of Medicine, honor, value and support teaching in all NYU programs: those programs extend to middle school, high school, undergraduate, medical, graduate, and post-graduate students, including interns, residents, fellows, physicians and scientists. However, one of our important missions is teaching medical students, and we must ensure that this is supported by the faculty to the highest level possible.

In brief, the committee affirms that an appointment at the School of Medicine requires teaching as part of one’s career and advancement requires a dedication to excellent, effective teaching in the context of a research university. This principle is entirely in keeping with the policy, history and culture of the University and School of Medicine.

Excellence in teaching is also recognized through: 1) the University-wide competition for the Distinguished Teaching Award, for which the School of Medicine nominates a candidate annually; 2) the awarding annually of great teacher status to two faculty members who teach in the first and second year of the educational program; 3) the awarding by the graduating class of two best teacher awards, one to a preclinical and the other to a clinical faculty member; 4) the awarding of similar recognition annually by the many
departments and divisions, and 5) the recognition of these achievements at the newly created, annual Dean’s Honors Day which celebrates the extraordinary achievements of our faculty before their colleagues and the Trustees and Officers of the University.

The section of the LCME self-study on the Educational Program also highlights a number of innovations in education that have been supported by the School and its affiliated teaching hospitals. These include: 1) an expansion of faculty development offerings by the Office of Medical Education under the Associate Dean for Education; 2) the creation of a University-wide Committee on Education and Technology, organized by the Vice Dean for Education, Faculty & Academic Affairs, including members from NYU’s Courant Institute of Mathematical Sciences, Stern School of Business, Steinhardt School of Education, Center for Advanced Digital Art of the Tisch School of the Arts, Digital Library and the offices of the Chief Information Officer and the Provost which has invented the Advanced Learning Exchange (ALEX), a new, student-centered, Web-enhanced ecology of learning; 3) the creation of the Surgery Interactive Multimedia Modules (SIMMS), case-based, rich-media teaching exercises which have been adopted for expansion by the American College of Surgeons and the American Society of Surgical Educators as a national, surgical clerkship curriculum; 4) the development of a Curriculum Committee of the Graduate Medical Education Committee which has created Objective Structured Teaching Examinations (OSTEs) for faculty and residents, courses on residents-as-teachers and other development exercises to enhance teaching and attainment of the ACGME competencies.

We believe that the recent modifications, in particular, to our policies and culture around teaching demonstrate that the School highly values teaching.

On the General Faculty Survey, 69% of respondents were neutral or agreed with the statement, “Participating in educational programs has impact on decision-making concerning retention and promotion.” Despite the above-described modifications, there are members of the faculty who have devoted their careers to education and are recognized as excellent teachers, but who have not delved into pedagogical scholarship. The Committee agrees with the Artman differentiation of faculty tracks in that excellence in teaching alone, with its attendant mentoring, assessment and guidance, should not be a qualification for the awarding of tenure.

The Committee believes that the differentiation of faculty tracks that occurred in part as a result of the 2000 LCME self-study has been a great success within the School and has offered greater clarity in the promotions and tenure processes.

C. Governance

To address this question robustly, the Committee must describe in brief a bit of history. In the last LCME self-study, the Committee on Governance noted, “A series of events began in June 1996 that could be characterized as the most turbulent period in the history of the School.” That sentence referred to a series of dislocations, now in the public record and the LCME archives, that began with a decision to merge both the schools and hospital systems of NYU and Mount Sinai, the failure of that attempt, the decision to merge only the hospital systems, a suit by our faculty to block that merger, the ultimate merger on July 16, 1998 and the syncopated dissolution of the merger over the ensuing eight years, which was completed in August 2006.

The last self-study looked to the appointment on September 1, 1998 of Robert M. Glickman as the 14th Dean of the School with expectations of renewed growth and vigor and a return to more tranquil times. The former expectations have been met, the latter not entirely. Until January 1998, the School of Medicine, Tisch Hospital (the University Hospital of New York University), and the Rusk Institute of Rehabilitation Medicine were known as the NYU Medical Center and were organized as an administrative unit of the University. All assets of this Medical Center campus were owned by NYU. After the merger, the clinical assets were owned by Mount Sinai-NYU Health. The merger called for the decline over five years and then cessation of the traditional cash support of the medical school by the hospital, and the new Dean was hired to reinvent the School’s administration after losing the joint Medical Center administration which had managed both School and Hospital for many years.
That new administration was built, but the merger was never successful. Within three years, all attempts at merging the activities of the several campuses had ceased, the President of Mount Sinai/NYU Health had resigned, and Dean Glickman had been appointed the CEO of NYU Hospitals Center to complement his role as Dean and, ironically, to reunite the campus. Since that time, the Boards of Trustees of the School and the NYU Hospitals Center always have met jointly, and Mr. Ken Langone has served as Chairman of both Boards, allowing for maximal cross-fertilization despite the two entities residing in separate corporations. The achievements in the School during this period of continued, rapid change have been remarkable and are cited in other sections of this report and the database. Having achieved what he felt was possible in almost a decade at the helm, Dean Glickman announced in March 2006 his intention to step down at the end of June 2007, providing adequate time for an orderly transition.

Effectiveness of Mechanisms for Organizational Decision-Making
With that as preamble and despite the epic events, the Committee can report that the mechanisms for organizational decision making are effective. The School of Medicine and University are much closer now than at any time in our history. The Dean and other officers of the School meet regularly with their counterparts at the University. Officers of the School of Medicine’s Faculty Council and our Senators to the University hold positions of leadership in the University Senate; indeed, the Secretary of our Council was elected President of the University’s Faculty Senate.

The primary committees that participate in the decision-making process at the School of Medicine are the four Councils of governance, specifically the Council of Departmental Chairs, the Faculty Council, the Student Council and the relatively recently convened House Staff Council; the Academic Medical Center Operations Committee, consisting of the leadership of both the school and the hospital; the Senior Staff Committee that consists of the Vice Deans and Finance officers; the Curriculum Committee; and the Graduate Medical Education Committee. The standing committees of the School listed elsewhere also are important contributors to decision-making. All of these are advisory to the dean. The deans’ consistent and informative representation at the Faculty Council meetings is welcomed by that council as a strength of the current administration. To ensure that the faculty at large was satisfied with their role in decision-making, the Committee included survey questions on this topic in the General Faculty Survey. Approximately 60% of faculty respondents were neutral or satisfied with both the participation and the effectiveness of the faculty in institutional decision-making.

Timeliness of, Efficiency of and Appropriateness of Input into Decision-Making
Decisions are made with a speed and efficiency appropriate to the topic. Broad participation characterizes the process most of the time. The most complex and difficult issues are often sent to ad hoc committees or task forces. These include the changes to the policies for appointment, promotion and tenure discussed elsewhere in this Committee’s report. As illustration, the issue was first presented by the deans to the Faculty Council and the Council of Chairmen. A committee was appointed and produced a detailed report. The Vice Dean for Education, Faculty & Academic Affairs then conducted shuttle diplomacy to achieve local consensus, and the two Councils voted unanimously in favor of the revised proposal. With the support of the Faculty Council and our senators to the University, the various authorizing boards and the Provost then endorsed the changes.

Overall, and as described above, there is balance within the committees of the faculty, department heads, and medical school administrators in decision-making. A major area of improvement since the last LCME self-study was the activation of Departmental Appointments and Promotions Committees that make recommendations on appointment, promotion and tenure independent of the Chairmen. From time to time, various groups express concern about their perceived lack of knowledge of, or contributions to, decisions at the school. Despite many electronic and print vehicles published to all constituencies on a regular basis, some feel uninformed. The issue of communications is discussed elsewhere and will be a topic of focus for the School of Medicine.
**Recommendations**

Despite the improvements since the last LCME site visit, the Committee felt that the decision-making processes of the School could continue to be improved in two main areas.

- Continue, in the upcoming leadership transition, to promote a high level of consultation and involvement of the faculty when important strategic decisions are made.
- Improve communication between the faculty and the Board of Trustees, perhaps through joint faculty-trustee committees and other like initiatives.

**Effectiveness of Faculty Communication**

There are many communication methods used to inform and gather input from the faculty. The official representative body of the faculty, the Faculty Council, has representation from each academic department, and representation from both voluntary and full-time faculty. The Council meets every other week during the academic year. The minutes of these meetings are both electronically sent to the entire faculty and posted on the Faculty Council website. As described in the Preamble of the Faculty Council, “The purpose of the Council is to provide for an organizational structure and procedures that will promote informed discussion and decision-making on all issues related to the operation of the Medical Center.”

The Council of Chairmen meets weekly with the Dean and the Vice Deans and serves as an effective means of communication to the Chairs of each academic department. Minutes from these meetings are also posted online. Relevant information from these meetings and from other sources is disseminated through a variety of mechanisms, including departmental and divisional meetings which occur at variable frequency.

Approximately 2-3 times per year, the Dean holds Town Hall Meetings, which are open to the Medical Center community. At these meetings, the Dean and others present information on issues pertaining to both the School and the Hospital. At the end of each Town Hall, there is time for open discussion with the Dean and other presenters.

In this age of technology, the School has increasingly relied on electronic means for communication to our faculty. Monthly, the Dean sends a Medical Center Newsbriefs e-mail to the Medical Center community, which includes highlights of recent events, notable accomplishments, and other relevant information. In addition to this scheduled communication, the Dean, Vice-Dean, and others in administration distribute information via ad hoc e-mail communications to the faculty.

In our survey of the general faculty, faculty members were overwhelmingly positive about the methods of communication of information. Faculty were queried on a variety of methods and reported satisfaction with all: Faculty Council (89% satisfied or highly satisfied); NYUMC broadcast e-mails (86%); and Departmental/Divisional meetings (86%). Additionally, the faculty reported overall satisfaction with the Dean, the Vice Deans, and the Department Chairs in terms of providing clear and useful information.

**Recommendations**

- Develop a central faculty electronic portal where resources relevant to faculty can be housed. In the interim, enhance and publicize by e-mail the resources and links located on the Faculty Affairs webpage.
- Mandate and enforce the usage of an active, NYU-domain, e-mail address by every faculty member in order to enhance and ensure communication.

**Clinical Educational Environment**

In response to a concern expressed during the 2000 LCME site visit and our last self-study, a survey of our voluntary clinical faculty was undertaken in the spring of 2006. The goal of the survey was to assess whether the spirit of volunteerism of our voluntary clinical faculty had remained constant during the period since the last self-study. While the response rate varied by department, the Committee noted several themes. In the years since the last LCME self-study, voluntary clinical faculty have continued to play a critical role in the education of our medical students and house staff, and members of this group of faculty view their roles...
in education as important. Approximately two-thirds of respondents indicated that they are involved in teaching of medical students and/or house staff, and the most common reason cited for their involvement was because of its importance to these groups.

The definition of teaching expectations of voluntary faculty members (20 hours per year, if asked by their chair, specified in the Report of the Committee on Expectations Regarding Teaching), has met with mixed results. Forty-one percent of the survey respondents did not believe that this requirement should be in effect. Despite this, two-thirds of respondents indicated that the variety of policy changes during the last decade did not alter the amount of teaching time or their view of their teaching responsibilities. One item of concern was that 75% of respondents indicated that they did not receive adequate feedback from the NYUSoM about their teaching.

Recommendation
- Constitute a task force to determine appropriate recognition and feedback mechanisms for the teaching responsibilities of the voluntary clinical faculty.

Discrimination and Harassment
In order to ensure that we are meeting our goals of a discrimination-free, sexual harassment-free workplace, the General Faculty Survey included a number of questions on these topics. A summary of results from this survey is included as an appendix to the database.

V. Report of the Educational Resources Committee

A. Finances
The magnitude of the School of Medicine enterprise has changed dramatically since 1999. The revenues, projected in 1999 to be $392 million, doubled to $787 million in 2005 and will be over $800 million in 2006. The Faculty Group Practice (FGP) has tripled in size. Philanthropy has almost doubled, with much of the growth attributable to Campaign pledge payments for the Smilow Research Building, and for over 100 faculty recruits for that building and throughout the campus. Research grants have already grown by 76%. Tuition revenue has grown by 28%.

A royalty revenue stream from Remicade particularly advantages the School of Medicine. In 2005, $78.3 million of royalties were received. In 2006, approximately $90 million will be received. $60M is being used for current operations, recruitments and capital enhancements. $30 million is being reserved.

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The audited financial statements of the School of Medicine for FY2005 show a $17.4 million operating profit. This compares favorably to the $28 million operating loss projected for FY 1999 at the time of the last review.

Schedule A of the LCME Annual Questionnaire for FY2005 shows the School with a $46.1 million shortfall. The difference between the audited financials and Schedule A is that Schedule A excludes $28.3 million of depreciation and adds in $91.8 million of Capital Expense. $66.4 million of the capital expenditures was for the recently completed Smilow Research Building. The net cash flow for FY2005 was ($421k) compared to ($9 million) projected for FY1999. As of August 31st, 2005, the School had $55.9 million in cash and short term investments. All financial metrics (the operating margin, capital spending and net cash flow) indicate that the School of Medicine is in a much better operating position than it was six years ago, and that it is investing in its future.

For each of the last six years, there has been a revision of the Ten Year Strategic Plan. While the underlying strategy (the Dean’s Growth Agenda) hasn’t changed, the annual update has provided a discipline to ensure that we stay ahead of adaptations of the strategy (i.e., growth in the number of recruits), accommodate for unforeseen events (break up of the hospital merger) and are current in inflation factors. The projections have stayed balanced. In some years, the additional revenue and additional expense have balanced easily. In other years, institutional efforts have been needed to realign expenses.

Pressures to Generate Revenue
The level of balance in the activities of the faculty to ensure revenue generation and provide the time for scholarly pursuit is reviewed annually during the budgeting process. The School provides support to the academic departments to cover salary of faculty engaged in required teaching activities. In addition basic science faculty are not expected to cover 100% of their own salary through extramural funding; rather they receive support for uncovered salary to ensure the availability of faculty for meeting the educational mission of the school.

The Clinical Enterprise
The School of Medicine has a FGP which now consists of over 550 physicians with total revenue of approximately $225 million per year. This enterprise generates approximately $18 million per year for the Dean’s Academic Fund, overhead coverage for the School, and academic funds for various Department Chairs. The magnitude of this enterprise has more than tripled since the last LCME site visit. The reason the FGP has increased in size is the dramatic increase in programmatic initiatives, the latest of which is an ambulatory cancer center in which over 50 physicians participate and are now in the practice plan. With multi-disciplinary programs becoming more prominent, an employment vehicle such as the practice plan is of greater interest to physicians. Further, as it becomes more difficult for voluntary physicians to bring on new partners, the availability of the practice plan has been helpful for new recruits.

There has been significant planning related to the clinical enterprise. In addition to the faculty practice, there is also a substantial contract with the flagship hospital of our municipal hospital system in New York, Bellevue Hospital, which employs close to 500 faculty. Additionally, our affiliation with the VA employs over 100 additional faculty. The strategy of the FGP is to partner with physician groups throughout the metropolitan area and to provide onsite specialty care to them that complements what they already provide, with referrals coming to NYU. Further, we are planning to build a new ambulatory care center. All of these ambulatory activities are amenable to medical student clerkships and electives.

Future Capital Needs
The present and future capital needs of the School of Medicine are reviewed annually and incorporated into the NYUMC strategic planning process. Included in the plan are the needs of the clinical enterprise, including major construction and renovations to the hospital, a new ambulatory care center and the renovation and upgrading of current academic and research facilities.
B. General Facilities

Teaching Facilities

Alumni Hall and Schwartz Lecture Hall
Alumni Hall includes the 500-seat Farkas Auditorium as well as two smaller auditoriums for lectures, symposia, and conferences. The 3rd Floor also includes a large study space available to students 24 hours a day with large windows and comfortable chairs for study and relaxation.

Completed in 1973, the Schwartz Lecture Hall provides two auditoria, including the Pfizer Foundation Hall for Humanism in Medicine, each with a capacity of 305 as well as two lecture rooms, each of which accommodates 85 students. Equipped with audio-visual systems, these facilities serve as a focal point of the first two years. Schwartz Lecture Hall is very convenient to Rubin Hall and the rest of the Medical Center.

The Geraldine H. Coles Medical Science Laboratory
The Geraldine H. Coles Medical Science Laboratory Building houses the Advanced Educational Systems facility, gross anatomy dissecting suites, the Printing Lab, and the Dr. Martin L. Kahn Teaching and Learning Center on the 2nd and 3rd Floors. The entire facility includes over 16,000 useable square feet of classroom and classroom laboratory space dedicated to small group teaching.

The Kahn Center, completed in 1998, contains six, multi-purpose, teaching labs with movable tables to maximize flexibility as well as computers and audio-visual equipment to facilitate discussion and integrative teaching. The design of this multi-purpose facility fosters student-faculty interchange and also provides medical students with study spaces during the off-hours. While this renovation addressed space requirements, the six laboratories now require more advanced multimedia capabilities. In addition, the computers in the laboratories and small group teaching rooms are outdated and need to be replaced.

The first floor of the building, containing small- and medium-sized conference rooms, and the ground floor, encompassing the Anatomy dissection laboratories, are in need of updating. These two floors are heavily used for teaching our Morphological & Developmental Basis of Medicine module. While Coles 105 was renovated three years ago, other renovations are needed. The ground floor – specifically Coles GO6, GO7, GO8, and G10, currently occupied by the Anatomy Dissection Laboratories and support space – also needs substantial renovation. While adequate, it is over 35 years old and is straining to support the educational mission of the NYU School of Medicine.

Simulation Learning Space
Simulation is growing in importance as a component of the medical curriculum, and its growth has an impact on teaching facilities. Simulation value is enhanced as apprentice-based medical education wanes. The types of simulation currently in use at the School includes virtual patients, OSCEs, partial task training, and human patient simulation.

Computer-Based Simulations
Virtual patients are computer-based simulations which bring patient cases to life. The Surgical Interactive Multimedia Modules (SIMMs) are case-based enactments of interactions with a hypothetical patient. They deliver a core curriculum in a way that reduces variability in exposure and integrates basic science with surgical skills through animation/video of surgical techniques and anatomy. The impact on teaching facilities for SIMMs, however, is not significant.

Clinical Simulations
Clinical simulations, such as the OSCEs, are more widely used than virtual patients. In the first two years, students take a 12-station OSCE on areas such as pain, domestic violence, and nutrition. In the second year, they also take a 3-station OSCE focused on medical interviewing and physical exams. At the conclusion of their third year, all students take an 8-station exam on clinical skills, the CCSE. This exam became a formal requirement of the curriculum in the 2005-2006 academic year. In the clerkships, there are also...
departmentally-based OSCEs.

Clinical simulations are demanding in terms of facilities and personnel. The preclinical OSCEs and CCSEs have been performed at the VA and at Bellevue Hospital in borrowed spaces. Similarly, the clerkships utilize makeshift and borrowed space. The School is planning a new Clinical Skills Center which will include exam rooms, simulation rooms, conference rooms, and a computer lab. One of the goals of the center is for students to learn and practice new technologies and skills before seeing real patients.

**Partial Task Training (PTT)**
Many schools also employ PTT in medical education and have labs devoted to this. PTT involves dividing complex tasks into small components followed by intensive concentrated training on each individual component. The aim of PTT is to reduce the magnitude of processing demands when performing multiple complex tasks simultaneously by making certain tasks routine or automatic. NYU’s 3,000-square-foot Surgical Skills Lab, located at Bellevue Hospital, utilizes PTT and was dedicated in June 2005. This facility employs three-dimensional models of organ systems and simple task-focused exercises. The main lab has raised flooring, enabling the use of gases, suction, etc. An overhead camera on the instructor’s table films the action for display on screens in front of the room. There also is a computer lab where eight computers have connections to SIMMs and patient care systems. The conference room has smart board technology. Live feeds from Tisch and Bellevue ORs are in the planning stage. Medical students on the Surgery Clerkship participate in four training sessions in the Surgical Skills Lab.

**Human Patient Simulation (HPS)**
The use of HPS in medical education is growing rapidly. It is being used in clinical training for development of basic skills, anesthesia and airway skills, procedural and team communication skills, as well as for learning how to deal with emergency situations (such as codes and electrical shutdowns). HPS helps develop critical thinking, teamwork, and leadership skills. Currently, the Emergency Care Institute at Bellevue has an HPS for resident and fellow training. Nursing has an HPS for running codes. The Department of Surgery has obtained funding to purchase an adult HPS for use in the Surgical Skills Lab, although the space is suboptimal for authenticity, storage and data tracking. The Department of Pediatrics is planning to purchase a pediatric HPS and is considering using it in the Pediatric ICU for “just in time” training.

Changes in health care delivery and the learning environment have driven these curricular reforms. With more care administered outside of the hospital and patients being discharged more quickly, the concept of a “teaching hospital” is in transition. There is decreased proximity of patients, faculty, and students and less time for learning. The facilities will need to be flexible to adapt.

**The Medical Science Building (MSB)**
MSB houses most of the medical school’s laboratories, conference rooms, and administrative offices, including nearly 6,800 square feet of departmental classroom and conference room space. The ground floor of MSB also houses the student and faculty dining rooms.

**The Skirball Institute for Biomolecular Medicine**
The Skirball Institute for Biomolecular Medicine, which opened in 1993, features two seminar rooms (one with multi-media equipment) which seat 75 people, three conference rooms that seat 25 people, and one smaller conference room that seats 15 people. These rooms are used primarily for clinical teaching and other educational meetings. The Skirball conference room and seminar facilities are accessible directly from Tisch Hospital, Floors 4 and 5.

**The Joan and Joel Smilow Research Center**
The Joan and Joel Smilow Research Center is NYU’s new, 13-story, state-of-the-art biomedical research center that opened on the medical center campus in April 2006. The 110,000-square-foot facility is primarily dedicated to research laboratories, but more than 11,500 square feet is allocated to conference, meeting, and break-out space. The facility specifically includes a new high-tech lecture hall as well as a large multi-
purpose room that is adjacent to the lecture room and suitable for meetings and other large gatherings.

**Study Space**
The Coles Building was opened in 1971 and, with the renovation of its 2nd and 3rd floors in 1998, it was renovated and renamed the Martin L. Kahn Teaching and Learning Center. The renovation added six small group teaching rooms and six laboratories (five of which can be divided in half to provide 10 additional small group teaching/study rooms). The total amount of space in the Coles Building, however, remains inadequate to meet the study space needs of the student body.

The renovation of Alumni Hall C, by creating seats for approximately 59 students, partially addressed the lack of available student study space. Although the medical library provides a limited amount of study space, students from the other NYU graduate schools (especially the nearby School of Dentistry) and the general medical center community compete with our students for available study space during normal library hours.

The Faculty Dining Room, Student Cafeteria, and Annex also are utilized by a limited number of students after operating hours to study. The large auditoria (Schwartz Lecture Halls E and F) and smaller Schwartz classrooms (Lecture Halls C and D) can also be utilized after hours as study space. The Faculty Dining Room, Coles laboratories, and small group seminar rooms are accessible with medical student ID after 5 p.m. and on weekends. Alumni Hall C is accessible at all times by medical student ID.

Based on the results of the LCME Student Survey, 46% of student respondents identified their dormitory room as the place where they spend the most time studying; a total of 77% identified their dormitory room as one of the three locations where they spend the most time studying. The Library and Coles were identified with the second and third greatest frequency. The quality of study space in Coles and Alumni Hall C received very satisfactory marks with 89% and 79% of students, respectively, indicating that the quality of space in these two areas was average or better.

The Library also received relatively good marks for quality, with 70% of students rating the space average or better. Marks for quantity of space were noticeably lower, with 39% rating the space poor or unacceptable. While the survey did not ask students in what setting they would prefer to study, the results from the other questions seem to suggest that the Library would be the preferred study location for many students, if there were more study space available there.

Even though they are by nature not confined to a specific location, the growing use in medical education of mobile computing equipment such as laptop computers and personal digital assistants has implications for facilities as well as for information technology. It is very likely that the continuing synergy between an increasingly electronic curriculum and the increasing abundance of the portable devices on which it is conveyed will transform the practice and physical environment of medical education. The School recognizes the need to guide this transformation rather than simply accommodate it after the fact.

**Frederick M. Ehrman Medical Library**
The Frederick L. Ehrman Medical Library has nearly 25,000 square feet of space on three floors. The basement houses periodicals, journals, book stacks, and copy machines, with desks lined up individually along the wall. On the ground level, there are two rooms equipped with study carrels and access to the most recent reference material and periodicals, as well as access to computers. The reading rooms are quiet, while the computer area offers more peer interaction. The upper level, or mezzanine, consists of more computers and carrels. Ehrman Library is open 24 hours a day from Sunday at noon until Friday at 9:00 p.m. Hours on Saturday are 10:00 a.m. to 8:00 p.m. These hours vary on holidays and school breaks.

At the time of the 2000 LCME self-study, the library had proposed certain modifications to improve security, enlarge the circulation/help desk, and combine the open computer area with the reading room. The bulk of
these improvements were made and others are planned.

The library connects MSB to Smilow at the first floor as well as mezzanine levels. At the first floor, the Periodicals Room gained new study seats as a result of the construction and restoration. At the mezzanine level, a new glass partition wall was installed that improved the quality of the pre-existing study space by increasing visual privacy and attenuating noise. The mezzanine level corridor space also received new furniture further improving the quality and comfort of the space for study.

The prior LCME self-study projected that a new library would be built in connection with development of the East River Science Park (ERSP) by NYU. At the time, NYU had been designated developer of the project by the City of New York and had planned, among other things, to build a new health sciences library as part of the project. Unfortunately, for reasons relating primarily to a change in the economic development objectives of the City, NYU no longer has a lead role in the project, and its ability to lease space at the site is in question. The School of Medicine is in steady contact with the newly designated developer. As the developer finalizes its negotiations with the City, the School of Medicine will engage the developer in new set of discussions about opportunities in the ERSP project.

The School, however, remains committed to the vision of a new health sciences library to fulfill the campus needs for health information resources and services in the new century. That vision is one of a library that supports a range of scholarly activities, with communal spaces for group learning, teaching labs for information courses, small group study rooms, quiet study areas, dedicated faculty study rooms, and, of course, immediate access to the library’s total collection of print and electronic resources. The library is now expected to be a center for increased collaboration and remote learning of working among those on this campus and colleagues at other institutions. In addition, the School recognizes the interdisciplinary nature of medicine and acknowledges the importance of integrating collections and services for the entire NYU Medical Center health sciences community.

Ease of access to the knowledge of the past contained in print resources and archives are important to our community. All journals published before 1985 are now in storage, but better access to these resources is essential. At the same time, new scholarly and patient care resources, as well as new types of scientific information systems, are being developed in electronic-format only. These materials need to be integrated with electronic searching tools, easily available for downloading, copying, and printing, and viewable on equipment that provides speed, clarity, and convenience. The new library must not only be able to provide substantial print resources on-site, but also provide state-of-the-art technology for access to these resources on-site and remotely.

The School of Medicine will continue to make incremental investments in the existing facility to demonstrate its commitment to the medical library. Recently, the School received a five-year contract from the National Library of Medicine to establish a Regional Medical Library for the Middle-Atlantic Region at NYU. In support of that contract, the School of Medicine will immediately lease nearly 1,000 square feet of administrative space at the VA and invest in its renovation. The receipt of this very competitive grant makes an impressive statement about the strength of the library and its programs despite its facility and space constraints.

Audio-Visual (AV) and Facility Technology
Like many other institutions, NYUHC and the School of Medicine have traditionally approached AV facilities planning on a per-project basis as was appropriate to a time when AV was largely an in-room, service-based function. Consequently, its classrooms, meeting rooms, and lecture halls have all been designed to function as freestanding facilities dependent on in-room technical support for projection, audio reinforcement, and recording.

However, like almost every other mode of communication, AV has transformed itself over the past decade into a set of digital applications and devices residing on the generic data network. AV is now largely a facilities-based function resting on an institutional infrastructure of routers, cables, display screens, servers,
identity management services, etc. Given this, we recognize that it is anachronistic to persist in addressing AV requirements on a per-project, rather than an information system-wide, basis. In response, the offices of Education, Faculty & Academic Affairs, and Real Estate & Strategic Capital Initiatives employed a consultant to assist in determining the School’s requirements for the development of an enterprise-wide “electronic commons.” The document extensively surveys existing facilities and services.

**Research Facilities**

Medical research and scientific investigation are critical components of the mission of the School of Medicine. From *The Mission of a Medical School*, a prospectus written by the Faculty of this School in the middle of the last century, articulates that “Progress in medicine, which is medical research, must look constantly to the School for its investigators and to the patient for its problems, whereas the whole future of medical care rests upon a continuing supply of physicians and upon the promise of new discovery.” Medical research, therefore, is inextricably woven into the educational fabric of the institution.

**The Brookdale Laboratories for Research in Kidney Disease**

As noted above, MSB is the largest of the medical school’s laboratory facilities. The Brookdale Laboratories for Research in Kidney Disease occupy the 1st Floor on the south wing of the building. Completed in 1975, this wing includes 10 laboratories, cold rooms, offices, and a conference room.

**The Skirball Institute for Biomolecular Medicine**

The Skirball Institute opened its doors in the fall of 1993, with its first recruits joining the institute during 1994. The institute, encompassing 60,000 square feet of laboratory space divided over four floors, focuses on basic research but provides both core facilities and interaction between the clinical disciplines and the activities in basic science at the Medical Center. With a strong awareness that most medical breakthroughs originate in basic research, the Medical Center has allocated considerable resources in developing a state-of-the-art, modern, interdisciplinary research unit right in the center of the medical school environment.

The state-of-the-art laboratories attract many of the highest caliber physicians and scientists in the world. Researchers study cancer, genetics, AIDS, malaria prevention, and Alzheimer’s disease. The most obvious benefit to students is that they learn to integrate the basic sciences with a multiplicity of clinical specialties to improve patient care.

**Medical Science Building (MSB)**

The basic science departments occupy 120,000 square feet of space in MSB. This building has undergone major renovations during the last decade and is a modern facility which includes biological containment laboratories, protein chemistry, and nucleic acid synthesis facilities, a fluorescent activated cell sorting core service, electron and light microscopes, image processing equipment, and microinjection instrumentation for the production of transgenic mice. All of the departments are equipped for state-of-the-art chemical and biochemical work and have independent conference rooms, specialized libraries, photography services, and central offices.

**Additional Research Space**

The School also leases nearly 40,000 square feet of space for research activities and support at the VA, approximately 26,000 square feet at Bellevue Hospital Center, and another 20,000 square feet at the City of New York’s Public Health Building. The School of Medicine also conducts certain research at the Hospital for Joint Diseases on the 15th and 16th floors in about 11,000 square feet of space. The space consists primarily of wet labs and support facilities for research in bioengineering and molecular immunology.

**Department of Environmental Medicine**

Founded in 1947, the NYU Department of Environmental Medicine is one of the nation's oldest and foremost centers for research into the health effects of environmental pollution. Environmental Medicine is both a department within the School of Medicine and an institute within NYU Medical Center. It has two major research and teaching facilities: one on the Medical Center's Manhattan campus and the other in Sterling
Forest, New York. The Sterling Forest facilities encompass about 72,000 square feet of lab, teaching, and office space. Its in-house research equipment includes one of the largest inhalation facilities in the country, a whole-body radiation counter, and many other state-of-the-art instruments.

**The Nathan S. Kline Institute for Psychiatric Research (NKI)**

NKI is a facility of the New York State Office of Mental Health that since 1952 has focused on psychiatric research, especially in the areas of psychopharmacological treatments for schizophrenia and major mood disorders, and in the application of computer technology to mental health services. Located on the grounds of Rockland Psychiatric Center in Orangeburg, New York, NKI has a strong academic collaboration with the NYU Department of Psychiatry.

A broad range of studies are conducted at NKI, including basic, clinical, and health services research. With an emphasis on improving clinical and long-term care, research at NKI focuses primarily on three areas: 1) patient-oriented programs emphasizing the causes, diagnosis, treatment, prevention, and care of severe and long-term mental disorders; 2) clinically-relevant, basic research on physiological and biochemical aspects of mental disease; and 3) the cost, quality, and effectiveness of services for patients in mental health programs certified, operated, and/or funded by New York State.

With the recent completion of a four-year, $40 million construction and renovation effort, the NKI research infrastructure has been greatly enhanced for the foreseeable future. The new research complex includes 200,000 square feet of modern laboratory, clinical research, and office space – the first in the region to be exclusively devoted to mental health research. The opening of this complex has resulted in the creation of new laboratory facilities for an Alzheimer's Disease and Dementia Research Program and the establishment of a Center for Advanced Brain Imaging (with world-class magnetic resonance imaging capabilities) allowing the detailed study of brain functioning.

NKI also has opened a new inpatient clinical research and evaluation ward. This unit provides a unique setting to discover new treatments for people who do not respond to currently available medications, but who are afflicted by some of the most common mental disorders. NKI’s future work is focused on the search for the causes and cure of some of the most costly and disabling disorders including schizophrenia, Alzheimer's disease, and manic-depressive illness.

**Growth Agenda**

The School unveiled its Growth Agenda in June 2000. The Growth Agenda, the strategic vision of Dr. Robert Glickman, currently calls for the recruitment of 117 new, research-focused faculty within a nine-year time period, FY2000 through FY2009. Since his tenure began, Dean Glickman has been preparing the School to take full advantage of the scientific opportunities in biology and challenges in medicine projected for the new century. Implicit in the Growth Agenda is the recognition of the need for constant innovation and a pledge to the advancement of medicine. The School of Medicine views growth and change as opportunities for further distinction and maintains a deep sense of commitment that has been translated into an action agenda.

To that end, the School is fulfilling its strategic Growth Agenda, a program that will have profound and beneficial effects on the School of Medicine's progressive future. It emphasizes molecular medicine and “bench to bedside research,” focusing on the following research program priorities: Cancer, Cardiovascular Biology, Dermatology, Microbial Pathogenesis, Infectious Diseases, Neuroscience and Genetics. The enhancement and increase in physical resources and recruitment of the next generation of research leadership ensures the School’s growth in the future, enlarging and enriching its biomedical campus.

Among the 117 targeted recruits, a total of 13 chair positions have been filled in the Cancer Center and the departments of Biochemistry, Dermatology, Anesthesiology, Medicine, Ob/Gyn, Ophthalmology, Otolaryngology, Parasitology, Pediatrics, Pharmacology, Psychiatry, Radiation Oncology, and Radiology. A total of 50 recruits have already been hired, and for the remaining years of the initiative, the School of
Medicine plans to hire another 67 faculty. The planned recruits will be varying levels and will fortify the following programmatic and departmental areas: Cardiovascular Biology, Microbial Pathogenesis, Molecular Neuroscience, Genetics/Genomics/Proteomics, Dermatology, Medicine, Parasitology, Pathology, Pediatrics, and Radiology.

The Growth Agenda originally forecast demand for at least 200,000 square feet of additional research facilities to support the new faculty. The most obvious manifestation of this growth is the construction of the Joan and Joel Smilow Research Center, a new 13-story, state-of-the-art biomedical research center with 110,000 net square feet of space for laboratories, conference rooms, and classrooms. Facing the East River adjacent to the FDR Drive, the Smilow Research Center abuts and is entered via MSB, NYU’s original research facility. This proximity will foster interaction between researchers, facilitate the integration of new programs with existing ones, and enable sharing of equipment and other resources. Ground-breaking for the Smilow Research Center occurred in October 2002, and the facility began accepting its new occupants in April 2006. It will add to the research laboratories arranged in flexible, open spaces to accommodate close to 50 new recruits.

As stated above, NYU is no longer playing a lead role in the development of the ERSP. Our ability to lease any space at the site, however, is still open for future discussion and the newly designated developer has reached out to the School of Medicine and expressed interest in pursuing any opportunities that are consistent with its obligations to the City and to the objectives of the project. Specifically, the developer is interested in the development of certain core facilities which would benefit the School as well as the private tenants of the ERSP. A medical library is another facility that might meet these parameters and be viewed favorably by other tenants as well as by the City.

**Service Activities**

**Animal Facilities**

The Division of Laboratory Animal Resources (DLAR) provides veterinary services to the medical school’s Central Animal Facilities (CAF). Administration of the facilities, with the exception of the Department of Environmental Medicine Satellite Animal Facility (DEMSAF) in Sterling Forest, is centralized under DLAR.

The CAF comprises of those animal facilities for which DLAR has direct oversight of the care and maintenance of the animals. These include the Berg Institute Central Animal Facility (BCAF), the Skirball Institute Central Animal Facility (SCAF), the Department of Medical and Molecular Parasitology Central Animal Facility, and the Kriser Dental Center Animal Facility. The Satellite Animal Facilities include the DEMSAF plus nine (9) small satellite facilities: Physiology Rat Room, MSB Rm. 449B; Physiology Frog and Fish Room, MSB Rm. 441; Zebrafish Ground Floor Room; Zebrafish Fifth Floor Room; Millhauser 5th Floor, Rm. N509, Environmental Medicine Fish Room SF Rm. 127; Environmental Medicine Fish Room SF Rm. 119 & 131; Biochemistry Frog Room MSB 348; and Neurology Rodent Room OBV AB 532.

Accommodations are available at the DLAR animal facilities for the housing and maintenance of all common laboratory animals. DLAR technicians also will assist investigators with routine technical procedures, including phlebotomy, inoculations, necropsies, euthanasia, or monitoring breeding colonies. An aseptic survival surgery suite is available in the Central Animal Facilities. A veterinary diagnostics laboratory is available for assistance in microbiology, immunoserology, chemistry, hematology, and pathology.

The DLAR administrative offices are located in MSB 182. This area houses the reception/business office (where animal orders and requests for services may be submitted) and the operations manager and director. The clinical veterinarian's office is located in MSB 685. The veterinary services office is located in MSB 185. The Institutional Animal Care and Use Committee (IACUC), a committee that provides oversight of the program of animal care and use and is responsible for review of all proposals to use animals in research, is located in Greenberg Hall, SC-2, Room 137.
BCAF is located in MSB and includes 18,468 net usable square feet. Access from MSB can be gained from each of the floors of the animal facility. The ground floor of the facility includes access to a dedicated loading dock on East 30 Street for the receipt of animals and houses the cage wash and autoclave area, as well as the necropsy and cold rooms. Animals are housed on the 4th, 5th, and 8th floors. Individual animal rooms house a single species, although multiple investigators may house their animals in the same room. Other facilities within the BCAF include work areas, cold room, necropsy room, diagnostic laboratory, clean equipment room, quarantine rooms and isolation areas, and survival surgery suite, including an animal prep room and surgeon prep room.

SCAF is located on the ground floor of the Mixed-Use Building at 530 First Avenue and includes 9,723 net usable square feet. Research staff may gain access to the facility through the entrance on the Northwest side. Animal facility staff gains access through a separate entrance off the corridor on the east side of the facility. Both the Kriser Dental School and Parasitology Animal Facilities are within a few minutes’ walk of the medical school. Access to these facilities can only be granted through the Operations Manager after participation in the DLAR animal facilities training program.

In order to access any of the CAF, investigators and their staff must participate in the animal care and use training program, and arrange, through the training coordinator, to have their identification badges coded by the Security Department. A coded identification badge is required to gain access to the facility. An individual may be permitted access to only one of the animal facilities.

Housing
The housing portfolio of the medical center consists of 810 owned units and approximately 160 leased units. These units accommodate the needs of the School as well as of the hospital, and they house medical students, graduate students, post-doctoral fellows, faculty, administrators, nurses, and house staff.

Rubin Hall
Built in 1957, Rubin Hall is a medical student dormitory with 14 residential stories that includes 267 single rooms and nine two-room suites. About half of all medical students in campus-owned housing live in Rubin Hall. The singles range in size from 140 to 170 square feet. The suites join two singles through a shared bathroom. The rest of the rooms share a common kitchen, bathroom, and shower facilities on each floor. Each room comes furnished with a desk, chair, bookshelf, wardrobe, bed, and sink. The basement of Rubin Hall contains a 24-hour gym and laundry facilities. Washer and dryers are also located on 12th, 13th and 14th Floors.

The Rubin Lounge has large screen televisions and ample leather seating; pool, ping pong, and foosball tables; a piano; and pantry/vending area. The main space can be divided flexibly for multiple uses and functions. Following up on a significant renovation that was completed in the late-1990s, additional work was done in 2004 that included new floors, window treatments, fresh paint, and seating. Due to its age, as well as the high turnover rate and intensive use of the facility, Rubin Hall is in regular need of steady upgrade and investment. All of the public areas of the dormitory were repainted in 2005. The bathroom partitions also were refurbished last year, and the kitchens received new chairs and freezers as well. A flood in the basement this year necessitated a $20,000 replacement of the gym floor and other work to remediate mold growth. Finally, all of the residential properties received new laundry facilities this winter. Investment priorities for Rubin Hall include complete renovation of bathrooms and kitchens, new plumbing systems and risers, new heating plant, and replacement of the roof.

Rubin Hall is managed by the Real Estate Department, which hired a tenant coordinator in 2006 to assist in the management of the building. The tenant coordinator is available more directly at the building to assist in repair and maintenance issues and to improve coordination with in-house maintenance personnel and contract vendors.
Greenberg Hall
Greenberg Hall, opened in 1986, accommodates students, post-docs, faculty, nurses, and other staff. This 10-story building contains 215 studio and three-person suites. Each apartment includes a private bathroom and kitchen. About 37% of medical students in the school’s housing portfolio live in Greenberg Hall.

The School is in the midst of significant renovation work in the public areas of Greenberg Hall; this will renovate the elevator interiors, restore the bronze lobby elevator surrounds, and resurface certain areas of the main lobby walls. The School of Medicine already has replaced the floors on the upper floor elevator landings, repaired the damaged lobby floor, and will repaint the elevator surrounds on each upper-floor as well. The building also received a new water heater this year. Interior room renovations are ongoing to upgrade the flooring in the apartments. The current schedule addresses about 20% of the building floors each year. This year is the second year of the estimated five-year program.

The School of Medicine also is in the process of developing plans to increase the functionality of the substantial rear courtyard, which is an important student resource for formal gatherings as well as private functions, and improving the appearance of landscape elements in the front of the building as well. Priority infrastructure investments for Greenberg Hall, as funding permits, include replacement of the roof and new windows throughout the building.

Skirball Residential Tower
Skirball Residential Tower contains 289 residential apartments on 13 floors for faculty, nurses, house staff, and students. Skirball accommodates about 13% of the medical students housed in the School’s owned portfolio.

Although it is the newest building in the portfolio, the building is now almost 15 years old and is in need of certain upgrades. Since last year, the School has been overseeing renovations of the public corridors – replacing carpet, removing wallpaper, painting walls, and upgrading lighting – at a cost of about $40,000 per floor. Seven floors are complete and the remaining six are planned to be done by the end of this calendar year.

The housing portfolio includes 160 units of housing leased at negotiated market rates and subleased to the Medical Center community at subsidized rents. A majority of these units are located at Waterside Plaza, where NYU leases a total of 90 studio, one, and two bedroom apartments. At present, medical students occupy only two units in the entire leased portfolio. Graduate students occupy another 32 units within the leased portfolio. Since the last LCME self-study, the leased portfolio has doubled in size, from just 80 units in 2000. The School is moving forward to net-lease another 30 units in a condominium building on First Avenue. The studio, one, and two bedroom units will be renovated by the School and leased to post-docs, graduate students, medical students, and faculty. The Housing office also provides certain assistance in finding housing off-campus for anyone in the Medical Center community. This assistance is primarily in the form of the Off-Campus Housing Assistance Program website information and broker referrals.

Construction at the Smilow Research Center had a dramatic effect on quality of life and occupancy rates at Rubin Hall. In recognition of the impact of noise, dust, and disruption, students residing in north-facing rooms were allowed to break their housing contracts for the 2003-2004 year. A significant number of students accepted this offer and moved off-campus. This may be largely responsible for the reduction in the number of students housed within the portfolio. Since 2002, the number of students in the portfolio has declined from 576 to 512. It is fair to say, however, that in the past two years, the modest improvements made in Rubin Hall along with completion of the Smilow construction have improved the quality of life for Rubin residents. In last year’s housing lottery, 51 students who had lived in medical center housing elected to move off-campus. This year, however, that number fell to 24 students, suggesting that the flow of students away from campus housing may be reversing or at least abating.
The Smilow construction, however, also brought some positive benefits for Rubin Hall occupants and other students, some of which will only be evident in the coming months. First, in order to make way for the new building, a basketball court had to be relocated to the rooftop of Schwartz Hall. As part of that work, a large bike shed also was constructed near the entrance to the Lower Dean’s Office. As part of the work on the Alumni Courtyard, the School installed a new, heated, double-glass door entrance vestibule from the Rubin Hall lobby with a new card swipe and proximity card readers. Certain other lobby work was done as well, including marble and metal cleaning, reinstallation and repair of radiator covers, repair of damaged terrazzo floor, installation of new window shades, and general repainting.

The Smilow project would have provided significant new landscaping elements on the Schwartz rooftop, but initial cost estimates forced the landscaping elements to be eliminated from the scope of the work plan. The proposal, however, is getting a second look and being reengineered to reduce the overall cost. Smilow is only funding the design review, but the goal is now to develop a scheme that can be installed in phases as funds are made available. The focal point of the project would be an artificial turf lawn with deck, bench seating, and partial-shade canopy.

A current trend that may affect the portfolio includes the rising popularity of the five-year medical school program. It is not clear, however, what impact an extended program will have on housing demand, as many of the students opting for the extra year elect to spend it away from the medical school altogether, doing research at another institution or abroad.

Recommendations

- Replace carpeting, seating and lighting in the Schwartz and Alumni Hall rooms and upgrade the multimedia projection facilities.
- Consider establishment of a committee to examine the current use of all of the teaching spaces in the School of Medicine.
- Renovate the first two floors of Coles to support the educational effort going forward.
- Upgrade multimedia capabilities and information technology throughout the Kahn Center.
- Continue to plan for a Clinical Skills Center to keep the School in a competitive position in the utilization of simulated environments.
- Study the quantity of, quality of, and demand for student study space; consider renovating at least one of the following spaces to provide additional student study space: Alumni Hall A, Schwartz Lecture Halls C/D, or the Student Cafeteria Annex; consider increased student access to other spaces and conference rooms in Skirball and Smilow in the evenings and off-hours when such spaces are not being utilized.
- Continue to explore opportunities to meet the library’s needs and expand its space.
- Continue to foster a relationship with the ERSP to explore and exploit whatever opportunities may arise to economically and efficiently alleviate space and facility constraints on campus.
- Continue to make reasonable and necessary investments in Rubin Hall, while strongly considering construction of a new dormitory.
- Develop a plan to respond to student housing demand through additions to the portfolio, both owned and leased.

Security

The primary function of the Security Department is to provide the safest possible environment for all members of the medical school community. Security officers are trained in first aid, CPR, patrol procedures, knowledge of the campus, information about the alarm systems, and building evacuation. They are also trained to use citizen arrest procedures if necessary.

The Security Department is aided in its tasks by a computerized, card access, CCTV-alarm system. All entrances and exits, many high security doors and the perimeter of the medical school campus are monitored by closed-circuit television equipment with recorder capability. The card access system is integrated with the existing identification program.
All NYU-owned residential buildings, including Skirball Residential Tower, Greenberg Hall, and Rubin Hall, provide 24-hour security personnel presence and surveillance cameras in lobbies and lounges. Magnetic card-swipe access has been installed in the three NYU-owned residential properties, and upgrades to proximity readers are planned. No one is allowed access into a residential facility unless he or she is a current student, resident guest, or otherwise authorized visitor. All entrants, including staff and faculty, are checked for proper identification.

The School also has made other recent security improvements, including the installation of new security window gates at the first floor of Rubin Hall and other improvements along the 30th Street corridor, including new lighting and cameras. The 30th Street entrance is closed after hours to limit traffic at that location.

**Transportation Services**
NYU operates a free campus transportation service that is available year-round with modified summer and holiday schedules. The service runs along five fixed routes connecting the various campuses from 7:00 a.m. to midnight weekdays and from 10:00 a.m. to midnight on weekends. A free, on-call van service is provided for overnight transportation to and from NYU facilities as needed.

In addition, there is a free Intracampus Shuttle that runs every 20 minutes between 9:00 a.m. and 3:00 p.m. from the Medical Center to the Cancer Center and One Park Avenue. A Commuter Shuttle between the Medical Center and the major commuter terminals, including Pennsylvania Station and Port Authority Bus Terminal is available, with pick-up offered at four scheduled times between 6:00 a.m. and 8:00 a.m. and drop-off between 3:00 p.m. and 5:00 p.m. for $1.00 per ride.

**Recommendation**
- Undertake an outside assessment of student security in conjunction with an evaluation of overall security at the Medical Center.

**C. Clinical Teaching Facilities**

**Bellevue Hospital**
The clinical resources available to the medical school are extraordinarily rich. First, Bellevue Hospital is an 800-bed hospital with just under 30,000 discharges a year and over 500,000 out-patient visits. Medical students are able to do clerkships, sub-internships, ambulatory rotations, in-patient rotations, and clinical research electives at this site. The patient mix is extraordinarily diverse from demographic and pathophysiological perspectives. Bellevue’s in-patient unit is in excellent condition, and a state-of-the-art intensive care unit was recently opened. Equipment is generally excellent and support services, always a concern in a municipal hospital, are continually improving. Phlebotomy is provided on a regular basis, IV teams are present and transport is much improved. Bellevue recently opened a 208,000 square foot ambulatory care facility to which medical students are assigned. There are close to 500 NYU faculty on site at Bellevue through a professional services contract that provides patient care and trainee supervision.

**VA New York Harbor Healthcare System (VA)**
The New York Campus of the VA provides another rich clinical resource. The VA has inpatient services in acute medicine, surgery, acute psychiatry, neurology, and rehabilitation medicine. The New York Campus is affiliated with many schools of higher education, but its primary clinical affiliation is with the School of Medicine. Medical students routinely rotate on these services, and the VA residency programs are fully integrated with those at NYU and Bellevue Medical Centers.

Additionally, the VA New York Campus provides just under 400,000 annual outpatient visits. In total, therefore, there are approximately one million ambulatory visits between Bellevue and the VA New York Campus, with another 400,000 ambulatory visits at Gouverneur Diagnostic and Treatment Center, which is also an ambulatory site for teaching. The VA also has an ample supply of NYU faculty members who are on site and full-time through an affiliation. Over the past year, the federal CARES Commission studied its
allocation of capital assets, including the VA. Although the School undertook planning efforts to determine its course of action should the VA close, the decision to keep the New York campus fully funded and operational was made in September 2006.

**Tisch Hospital**

Tisch Hospital is a primary teaching hospital which also abounds in extraordinary opportunities for medical students. There are 37,000 discharges per year with an excellent mix of patients. Recently, through the addition of hospitalists and full-time chiefs of service, the teaching activities have been enhanced to supplement the excellent work of voluntary attending physicians. One limitation of the Tisch Hospital clinical teaching resource base is its relative lack of small group teaching conference space. Tisch Hospital recently opened a clinical cancer center, a 100,000 square foot ambulatory cancer care facility building which is free standing and will provide further opportunity for ambulatory care activity for medical students. Other affiliates, including Lenox Hill Hospital and North Shore-LIJ, provide clerkships in selected areas for medical students.

**Recommendation**

- Continue to advocate for teaching space in all clinical facilities.

**Administrative Cooperation and Communication**

The interactions between the medical school administration and the hospitals or clinics used for teaching are extensive. One of the Vice Deans of the School of Medicine has responsibility for managing these affiliations. On a weekly basis there is a joint operating committee meeting between the School of Medicine and Bellevue Hospital; on a monthly basis there is an affiliations meeting with the Veteran’s Administration. There are virtually daily meetings with the Tisch Hospital administration. Above and beyond these meetings, there are multi-site committees under the auspices of GME which frequently discuss medical student education. The level of cooperation between the School and its affiliates is extraordinarily positive and interactive. Conflict negotiation and resolution, when needed, are undertaken between the Dean of the School of Medicine and the appropriate Chief Executive Officer of a particular hospital or clinic.

**Faculty and Staff-Level Cooperation and Communication**

We are fortunate that most of our clinical sites are staffed by NYU faculty members. In two sites, namely Lenox Hill Hospital and North Shore-LIJ, clinical staff may not be core faculty members, but members of the voluntary faculty. Representatives from these institutions participate on the Curriculum Committee, and site directors communicate regularly with their respective clerkship directors.

In summary, the primary affiliations at Tisch Hospital, NYU Hospitals Center, Bellevue Hospital/Gouverneur, and the VA, supplemented by relationships at Lenox Hill Hospital, North Shore-LIJ and others, provide a rich, well-integrated opportunity for medical education.

**D. Information Resources and Library Services (IRLS)**

The IRLS Subcommittee reviewed the charge to the Educational Resources Committee and laid out a paradigm for evaluation of the adequacy of resources devoted to the educational mission of the School. As a group, the subcommittee updated the status of the findings of the 2000 Committee with respect to Library and IT issues. As a mode of focusing and stimulating discussion, the subcommittee reviewed about a dozen questions posed to it by the Senior Associate Dean for Education and Student Affairs. The written response to these questions was then cast in the format of strengths and challenges with respect to the resources, both personnel and infrastructure, in support of education.

Not surprisingly, the subcommittee identified a broad array of strengths and challenges. All of the faculty, staff and management involved in supporting the educational mission are motivated and effective. There have been an impressive number of significant improvements and accomplishments since the 2000 LCME review. However, the bar continues to rise, along with expectations of faculty, staff, and students. In balance with the notable accomplishments, there are a few areas for targeted improvement. The subcommittee
believes that there are adequate resources in information technology; however, the subcommittee also believes that these resources may not be used in the most efficient and effective manner.

There were several confounding variables: the distribution of technical resources across various departments in a decentralized model, and most notably, the lack of a central strategic plan for the Medical Center and of an oversight body to direct and coordinate efforts in the support of the education, research, and patient care missions of the School of Medicine. For these reasons, the subcommittee stressed the importance of having a coordinated approach to information technology resources and felt that the recent consolidation of various IT groups into Medical Center Information Technology (MCIT) begins to address these issues. With respect to the Library, the major issue remains an insufficient amount of space, next to which any other shortcomings pale. Despite that, the Library has accomplished a number of innovative projects to make its resources available to students, faculty, practicing clinicians, and staff. The AES group has built ground-breaking software to simulate various clinical situations and, therefore, to significantly transform the educational experience. Their challenge is striking the correct mix between research and development on one hand and production on the other.

Advanced Educational Systems (AES)
The School of Medicine was one of the pioneers among medical schools in the application of personal computers, the Internet, and the World-Wide Web to medical education. In 1987, an interactive multimedia development unit of the Dean's area, the Hippocrates Project (HP), was established. Its charge was to identify and develop ways in which information and communication technologies (ICT) could be applied to medical education. Headed by Martin Nachbar, MD, the unit worked closely with the course directors from several of the visually intense basic science disciplines. The HP soon created a series of multimedia programs that became essential resources for the basic science curriculum. In 1989, following this “proof of concept” period, a budget for a small, permanent staff was provided by the School of Medicine.

In addition to the production of multimedia modules for medical education, in the period from 1989-1997, the HP collaborated with the Research Computing Resource (RCR) to introduce the new e-mail systems and to provide access to the Internet and World-Wide Web. In 1997, recognition of the growing importance of technology in all aspects of undergraduate medical education led to the expansion of the HP to a division of the Dean’s Office called Educational Computing (EC). In addition to continuing to develop educational multimedia projects and materials, EC expanded to include interactive physiologic simulations and began to provide service components such as elements of a computing infrastructure for administrative aspects of medical education, computerized grading for undergraduate medical school courses, tailored statistical reports of examinations, and automated course survey results. EC and the RCR soon combined resources to form Academic Computing (AC). AC expanded activities to include the development of databases for clinical research and began development for mobile platforms.

With the splitting off of Tisch Hospital from the School of Medicine in 1997 and as the requirements for the planning, construction, and maintenance of a modern ICT infrastructure for the School of Medicine assumed greater importance, a new IT department (School of Medicine Information Technology – SoMIT) within the School of Medicine was formed. Organizationally, this new unit was housed under Administration, and the new Chief Information Officer (CIO) reported to the Vice Dean for Administration. SoMIT took over many of the service tasks which had previously been provided by AC (e.g., e-mail, the School of Medicine website, and building of new applications and databases to support administrative functions, including certain administrative aspects of education of the School).

In 2001, coincident with a new effort to design and develop a surgical electronic core curriculum consisting of rich-media (i.e., video, audio, 3D animation) modules, AC was separated into two independent units: AES, a division of the Deans’ Office, and the RCR, a molecular biology research resource. AES’s focus was exclusively on education and, as such, AES was responsible to the Vice Dean of Education, Faculty & Academic Affairs but now reported directly to a new position, the Assistant Dean for Advanced Applications. AES assumed responsibilities for the creation and initial maintenance of innovative,
educational, IT applications which included both educational learning resources (i.e., learning modules) and service and administrative applications for undergraduate medical education (i.e., curriculum website, test score reporting, online course evaluations, etc.).

The year 2001 represented a watershed in educational development for AES and the School of Medicine. Prior to 2001, AES projects were almost exclusively rooted in the preclinical curriculum and involved either the creation of some interactive learning modules which sought to make particular, difficult concepts within a single discipline more understandable (i.e., how the stomach secretes gastric acid for the physiology course), or sought to facilitate the learning of biologic structures from image archives for the histology, pathology, and microbiology units of the curriculum. Beginning in 2001, the collaboration among the Department of Surgery, numerous faculty members from other departments, and AES produced a set of new learning tools, the SIMMs. SIMMs are rich-media applications; that is, they rely heavily on information-intense media such as video, 3D modeling, animation and audio. Thus, SIMMs were, and still are, expensive in terms of financial costs, man-hours to produce a finished product and the bandwidth necessary to use them.

It was recognized from the outset that a project of this magnitude needed to be guided by continuous assessment of the educational impact of the SIMMs. Moreover, to support the construction, distribution, and assessment of SIMMs, a new infrastructure was required. These two new elements dictated that AES move in two new directions. First, there was a need to tightly couple educational research to technological development and to bring additional informatics and educational research expertise into AES. This was accomplished by creating two part-time faculty positions within AES and filling these positions with Marc Triola, MD, who became the Director of Research for AES, and Adina Kalet, MD, MPH who became the Director of Education for AES. AES also moved to develop a robust infrastructure to handle the complexities of rich-media – in essence, AES moved to create a new electronic learning environment for medical education.

Most significantly, all of these changes accelerated a shift of emphasis of AES activities from service functions to research activities and resulted in a decision, in 2004, to shift responsibility for all service for undergraduate medical education from AES to SoMIT with the exception of legacy survey instruments that AES had created and maintained for the OME. Commensurate with its focus on research and the development of innovative educational ICT applications and in parallel with the divestiture of service, AES sought to reduce its reliance on the School of Medicine's budget for personnel. In the year 2005, three grants in which AES was a participant were awarded to the School of Medicine (two awards from the National Science Foundation and an award from the Health Resources and Services Administration). These grants reduced AES’s dependence for funds for “development/production” personnel derived from the School by approximately 15% in the current budget year (2006) as compared to 2005 - with the expectation of further reductions in future years through additional grants.

**Medical Center IT**

Until approximately 1997, the School of Medicine and Tisch Hospital were one administrative entity. While the School received some IT services from Hospital IT, the School and its components were generally independent. Several centers of excellence stepped up, but with limited resources and mission:

- Skirball built a small, well-managed, desktop support function, along with a central server to store and access files, and some support of research computing. These resources were not routinely made available in other physical locations.
- A Web group also formed in the Skirball environment, providing significant web presence for the School, although this did not evolve in pace with changes in the Internet.
- There was essentially no help desk.
- The Library provided some software training services administered their Library Management Systems and provided online electronic resources through its proxy server.
- There were a small number of people doing custom software development, but their efforts were not linked to any central strategy.
• Limited network services were provided by the Hospital organization. This meant limited service on campus, and none at Bellevue or the VA.

This led to a high degree of fragmentation of IT providers within the School, with the Library and AC providing some services and many departments hiring “jack of all trades” staff to serve local needs. There were no central direction and no standards.

In 2000, a consulting engagement led to the creation of a CIO role and the rudiments of a School of Medicine IT department (SoMIT). Since then and during the period encompassed by this self-study, this group grew and made great progress in a number of infrastructure areas as detailed below.

In order to more efficiently provide IT services across the Medical Center, SoMIT and Hospital IT departments were consolidated, creating a Medical Center IT (MCIT) in January of 2006, with the appointment of Paul Conocenti as Medical Center CIO. This has opened the door to unprecedented levels of cooperation and information flow across the Medical Center. The IT groups have been reorganized to more seamlessly support infrastructure and support the School of Medicine and Hospital along the lines of mission, rather than along corporate boundaries. There are initiatives under way to make hospital clinical data more available to both teaching and research activities, and AES, Library IT, and University IT are collaborating to develop an architecture capable of integrating didactic and clinical software at the object level to form an Advanced Learning Exchange (ALEX) platform. IT infrastructure must catalyze the fusion of the education, research and clinical care portions of the tripartite mission of the Medical Center.

Recent consolidation of School and Hospital IT into one MCIT group is beginning to demonstrate economies of scale and the development of a collaborative systems strategy that closer aligns, leverages, and integrates the many systems across the medical center. The ALEX collaboration project and the introduction of data warehousing and executive dashboard technology are just a few of the many opportunities being made available.

Accomplishments Since 2000

AES

• The group achieved national recognition for the quality of the instructional and educational resources it produces.
• AES made significant contributions to this effort, and the School of Medicine has twice received citations of excellence from the LCME (1992, 2000) for the development and the use of educational IT.
• The SIMMs (see http://simms.med.nyu.edu) have gained a national reputation for excellence. They have received the highest award from a peer-reviewed database (MedEdPortal of the AAMC) of electronic resources for medical education, led to at least ten peer-reviewed publications, and facilitated the formation of a national surgical education consortium created by the School.
• AES has also teamed with Felice Aull, PhD of the Department of Physiology and Neuroscience, to create a leading resource in the medical humanities, the Literature, Arts, and Medicine Database (see http://endeavor.med.nyu.edu/lit-med/lit-med-db/index.html). The site receives more than 30,000 “hits” per day and is the leading website at the School.

MCIT

• A strong, central Help Desk. This provides dial-in and e-mail accounts, assistance in desktop computing (i.e., purchasing, setup, repair, and establishment of standards for computers), support for office software functions and custom-built applications and desktop services to both School and Hospital Macs. Equally important, it provides hiring, screening, and co-management to departments that have local IT staff.
• Central Network and Server Group. This group provides e-mail, network project and support across physical environments and numerous organizations. They liaison with no fewer than three other IT
organizations: Bellevue, the VA, and the NYU Washington Square campus. They have established connectivity to all desired locations in the School, Bellevue, the VA, and numerous off-site locations. This group also has established wireless access to curriculum materials and are expanding the infrastructure capacity along the 1st Avenue corridor. In addition, they provide a secure, managed, backed-up server room as a utility to numerous departments and support several critical applications.

- Applications Group. Although small compared to the demands placed upon it, the group has made significant gains in developing and supporting systems to support the residency programs, online recruitment of faculty, management access to HR information, high-impact management reporting such as Time and Effort, and Research Dollar Density. The Professional Development Portfolio, built by SoMIT, has achieved national recognition and has been presented at numerous conferences.
- A team to support the administrative computing needs for clinical research. Through a set of jointly-selected packages and custom programming, the Research in Medical Science subgroup has been rolling out system support to the Sponsored Programs Administration department, Cancer Institute, Office of Clinical Trials, and the IRB. Much work is yet to be done and there is as yet little coordinated support for research computing.
- The web group was consolidated with the Hospital IT web group in 2003 and has done an outstanding job in more than tripling the number of visitors to the School web site (from 300,000/month to over 1 million/month). They have formed a network of internal webmasters across the organization and coordinate on standard look-and-feel, navigation, and content. Much of this is database-driven, so that web pages are generated dynamically, and current information displayed. This group has been very successful and develops and supports the web sites for the entire Medical Center.

Library Resources

The Ehrman Medical Library

With a holdings list of 12,000 electronic journal titles and over 10,000 electronic books, we rank in the top 10% of U. S. medical libraries in e-holdings. The Ehrman Medical Library retains 197,000 print volumes and subscribes to 1500 print titles, of which one third are available only in print. In addition, we continue to purchase books every year at a higher than average level, and list 187 electronic databases and clinical and research support resources, i.e., UpToDate, MD Consult, Biomedical Protocols. We are able to continue to purchase at this level (top 20%) because we share purchasing power with the main university library and a partner medical school.

The 2006 LCME Student Survey shows that the students perceive the collection to be adequate, with only 6% rating the books collection poor or unacceptable, 3% rating the journal collection poor or unacceptable, and 2% rating the electronic journals in those categories. Based on a survey of all library users conducted in 2005, the rating for the e-journal collection was at 94% good to excellent on a 5-point Likert scale.

The primary complaint about our library holdings, from students, faculty and residents, is that, due to space shortage, the entire journal collection dating before 1985 is in remote storage, and accessible within 48 hours only by request. Shortly, we will have to put all titles published before 1990 in remote storage. Although we make every attempt to purchase electronic back-files when we can, budget limitations do not allow us to purchase everything that is available. Materials from 1970-1985 are still in demand for teaching, clinical care, and research. Although remote storage is increasingly common for many libraries, it is usually for materials published before 1950. This is a weakness in library support.

Recommendation

- Develop a strategic plan for the Medical Center, a major component of which should address the library and information technology.
Adequacy of Information Technology

Strengths
The three main groups supporting the educational mission are AES, Library IT, and MCIT. These groups are rich in technological knowledge and ability, and they have generated some extremely innovative solutions and products.

AES
This is an extremely innovative R&D group. There is rich technology talent in unusual depth for educational applications in multiple technology areas. Their premier achievement is the creation of the SIMMS (see above). This team has significantly advanced the possibilities of computer-based instruction.

The Ehrman Medical Library
The Library is a repository of advanced digital resources and expertise. Over the past seven years, the Library has made great strides in the amount of curricular and clinical reference material available on-line. It has greatly expanded its scope and now manages the medical libraries at Bellevue, the VA, and the NYU Dental School. This has allowed for a breadth and consistency of content that would otherwise not have been possible. The advent of the Web proxy server has allowed access to Library materials from virtually anywhere with an Internet connection.

MCIT
This group has made significant advances in the realms of stable infrastructure, custom applications, web and general technology support since the last LCME evaluation. Some representative accomplishments (see Appendix ER-12A), are:

- A professional Help Desk, including trained staff and featuring a ticketing system to track all requests for assistance, has been built.
- Dozens of applications have been written to support the educational functions and mission. These range from student assessment and instructor evaluation system to a Student Portal to a curriculum management system tied to the master calendar.
- The Clerkship Evaluation System, an extremely powerful tool for use in student assessment is fully operational.
- Dozens of web sites have been created to support curricular needs and student life.

The Education Committee
Because of significant competition for IT resources, most notably for custom software development, the Education Committee was formed in 2004. Among its other tasks, the Education Committee assesses and prioritizes the large number of projects that are requested of IT. A process was created to evaluate each request from the many groups involved in the undergraduate, graduate and post-graduate educational missions, estimate the scope of effort required, and put forth the qualitative and quantitative benefits to be realized from the project. The group votes on the ranking of projects, and IT then maps the top projects out into a project plan with timeline. This serves as the mechanism for periodic review by the Education Committee of the efforts and progress of the projects. This process has alleviated much of the tension around unmet needs and has made strides toward assuring that IT’s efforts are aligned with the priorities of the senior Education leadership.

Integrated Advanced Information Management Systems Grant (IAIMS)
A two-year IAIMS planning grant was funded in April 2006 to develop a systematic approach to implementing technologies developed at NYUMC in the domain of cancer. This will involve training
medical students, residents, nurses, allied health and physicians in point of care and point of need education.

**The Campus Network**
The network, which covers the School and the Tisch/Rusk complex, is robust and stable. Substantial improvement has been made to the network infrastructure. Since 2001, all on-campus housing has been wired and connected to the NYU network. A faster and more dependable fiber-optic connection to the University was brought on line in 2005, thereby enhancing access to the specialized resources of Internet I and II. Hundreds of network connections have been added to Bellevue and a smaller number to the VA. This increases the accessibility by faculty and students to all online curricular material, evaluations, and reference materials. Wireless network access has been deployed in dozens of locations throughout the School, as prioritized by the students.

Access to network resources from off-campus is well-established. Access to the network is through e-mail ID and password. An integrated identity management system (PIMS) for the entire campus is well established and supports library, e-mail and curricular web sites. A robust modem pool for dial-in access has been established and maintained. This technology is aging out, and while still in place, it is being supplanted by secure Web access to online curricular and reference materials. MCIT is in the process of implementing Virtual Private Network (VPN) access, which should eliminate the need for dial-in and provide high speed web-based connection to virtually all electronic resources and systems.

**Educational and Classroom Technology**
Computers are available in most classrooms in the Coles facility. This, along with numerous units in the Library, gives students many access/work points to study using a rich complement of online resources.

The Library is developing an archive of electronic materials for teaching. It continues to add to its digital collections, making education and clinical reference materials deeper, broader, and more easily available.

AES has a national reputation for innovation in digital educational materials. SIMMs are multimedia teaching software that create a virtual clinical experience.

MCIT has custom-developed the Curriculum Materials Management System, which provides easy upload of and access to lecture materials.

**HELP Desk**
There are multiple entities providing this function:
- Library help lines are well used, and Library staff are highly available to support students and faculty. Feedback shows that the users are satisfied.
- Project faculty and students have direct access to the AES staff and director for support in electronic teaching tools and methods.
- The MCIT Help Desk is staffed Monday through Friday, from 8 a.m. to 6 p.m., and provides professional technical support services.

In addition to developing the applications enumerated in the database, MCIT staff are constantly enhancing and furthering the functionality of these systems.

**Media Services**
Designed to foster the rapid and cost-effective dissemination of scientific research information, the School’s Media Services Department is tightly integrated with data storage systems of the Skirball Institute. Media Services supports a wide range of activities related to the production of both quantitative and presentation imagery. The center's facilities are generally user-operated and are supported by an extensive set of web-based instructional and administrative resources.
Media Services began operations as the Digital Media Center in February 1995 and currently includes the following facilities:

- A public area providing around-the-clock access to scanners, printers, CD-ROM burners, imaging software, and other tools used in digital image and document production. The center can quickly and inexpensively generate digital photo prints, color or large high-resolution B&W laser prints, overhead transparencies, posters or slides from computer files.
- A separate area equipped with a non-linear video editing system and an array of videotape recorders and support equipment permitting footage in any major format or standard to be edited, annotated, format-converted and duplicated.
- The Jacob Bleibtrau seminar room on the third floor of the Skirball Institute, which has been equipped with a sophisticated but user-friendly electronic presentation system controlled by simple, touch-screen commands.

**Challenges**

**Governance**

The principal shortcoming found by this Committee is the lack of a clearly articulated vision for the NYUMC, and consequently an IT strategy to support that vision. Thus, there is not:

- an effective, over-arching body or individual to articulate and be responsible for adherence to a general or particular IT mission;
- a set of well-defined comprehensive charges to the various IT units;
- robust mechanisms for coordinated planning.

It is therefore difficult to efficiently and adequately harness our talents. This leads to a perception of a lack of formal planning and communication at both the highest administrative level and at the primary constituency level. Efforts are perceived as occurring on an ad hoc basis.

The current governance system for educational IT, as embodied in the Education Committee, is a significant improvement over the prior lack of structure and process. However, each of the three units covered in the committee’s deliberations reports to a different arm of the organization, and the Education Committee only reviews and prioritizes the efforts of MCIT.

Due to the lack of central vision and oversight, the three main IT providers (i.e., MCIT, Library IT, AES) operate cooperatively, but independently. There is no mechanism to assure that efforts are transparent to all, synchronized across groups, and serve the same agreed-upon set of priorities.

While significant progress has been made in centralizing “commodity” IT services (i.e., network), there is still some redundancy of such services within IT groups supporting the educational mission. For example, local e-mail servers abound throughout the organization. As School and Hospital IT groups are consolidated into MCIT, such infrastructure also should be centralized across all IT groups at the Medical Center, thereby allowing each group to concentrate on its subject matter expertise.

In the absence of a common vision and plan, many efforts are undertaken in reaction to requests by various constituents. While much good work has been done to meet such needs, this process occurs in response to “pain points”, and prioritization often occurs via the “squeaky wheel” method. This does not always work efficiently, especially with respect to capital funding.

It is clear to the constituents in the education arena that insufficient resources are dedicated to the central service providers (SoMIT, now MCIT). Software development projects are backlogged, and several systems problems have occurred due to the lack of resources to properly deploy and support both systems and...
utilities. There also are varying degrees of risk in having numerous critical School systems or infrastructure supported by single individuals. The consolidation of School and Hospital IT will alleviate some, but not all, of this.

Benchmark data available from AAMC is difficult to use to determine adequacy of IT resources, as almost every medical school is configured differently in terms of IT. The largest confounding variable is that while there is a central MCIT group, there are as many FTE’s outside the central group as there are within it. This raises the question of whether these resources are deployed in the most efficient model.

While the AES group is innovative and productive, the production of SIMMS modules and other educational software is extremely labor-intensive for both technical staff and faculty. The proposed strategic plan would govern the extent of these efforts, but all projects moved into production must identify the ongoing operating needs to support the system.

Network and Infrastructure
There has been a diversity of IT service providers, including certain network and related services provided by Tisch Hospital IT (initially Mount Sinai/NYU Health, then NYU Hospital IT). In the course of the dissolution of Mount Sinai/NYU Health, many basic services were outsourced to IBM. Having yet another service provider in the mix added to the complexity and confusion. IBM’s execution of service in the Network, Exchange E-mail, and Help Desk/Desktop Support areas has been a source of frustration. The recent consolidation of School and Hospital IT, and the proposed “insourcing” (take-back) of many of these services from IBM, holds the promise of improvement.

Wireless Coverage
There has been an initial deployment of wireless access in Coles, Farkas Auditorium, Alumni Lecture Halls, Schwartz Lecture Halls, Lower Deans’ Offices, Student Cafeteria, Student Lounge, Faculty Dining Room, and all areas of the Library. The new Smilow Research building will have wireless access points in most public areas. More pervasive access is needed, driven by the increased availability of online curricular materials.

Unifying Identification
There has been a historical problem with unifying identification between the School and the University. Much progress has been made in making the Kerberos ID and the NetID congruent to about 95%. There are efforts under way to unify identity across the School and Tisch Hospital through the use of LDAP and Active Directory.

File Storage
There is a pressing need for online file storage for individuals. The lack of such a utility has led to many problems and significant risks, such as the informal use of e-mail as a “storage” facility (leading to ballooning of the e-mail database).

Popmail
The main e-mail system for the School is known as Popmail. Statistically, it has been reliable, with better than 99% up-time over its 10-year life. However, the size of its database has grown substantially as e-mail has become a common communication medium and also used as storage (see above). In 2005, there were two lengthy outages due to file corruption in the disk drives. This imposed a great inconvenience on faculty, students, and staff as the restoration of data took several days. This has been addressed with deployment of a large SAN to house the Popmail database in a high-availability storage medium and installation of a high-capacity tape backup system. There are still some lingering issues of sporadic slowness of performance, especially in the web access to Popmail. The School has invested in an anti-Spam gateway that filters over 80,000 high-confidence Spam messages per day. The next phase is to deploy filtering and quarantine of moderate-confidence Spam, for user review and disposition.
The current data center housing critical servers for the School is not up to standards of best practice. It has experienced intermittent cooling problems, necessitating some shutdowns. Also, there are no redundant offsite servers for critical School systems. There are reasonable data backups in place, but a significant problem with the data center could result in protracted loss of use of systems.

**Educational and Classroom Technology**
Technology in classrooms is in need of improvement and the responsibility for it, specifically in the Coles Building, is distributed. There is a need for a holistic view of the deployment and support of technology and multi-media in the teaching spaces. Specifically, technology must be integrated into facilities planning, so that it is not an afterthought, but part of the conceptual whole.

With a single network and no gradations of security into zones, videoconferencing requires much planning and specialized resources. Through segmentation of the network, this can be achieved more easily with low-security “zones.” There also is an inability to systematically record standardized patient encounters. This will be addressed in Clinical Skills Center planning.

Use of and experimentation with new educational technologies (i.e., PDA, applications developed at other medical schools) are difficult. We lack some of the basic network and server infrastructure to make these applications easy to test and deploy.

There is a lack of a true curriculum database, but we have made numerous advances in this area. Virtually all of the course transcripts are available online as PowerPoint files and other documents. This past year, we made a great stride forward in building a custom application to manage the curriculum (CMMS) which greatly facilitates the uploading of new material by the faculty and ties the material to the course calendar. However, this is not a full “industrial strength” application, able to interoperate with other schools’ curriculum systems and incorporated into the strategic architecture.

The Student Printing lab has been problematic and a major source of dissatisfaction for the medical students. A lab with PC and Mac access and medium-capacity printers is maintained in the Coles teaching facility. However, the volume of printing generated by the students now overwhelms the capacity of the facility. Also, the service provided by IT has been below acceptable levels. There has been a recent effort to clarify and meet needs, and to smooth out the “seams” between support groups.

The School lacks a concerted effort to educate and support the faculty in the use of technology in teaching. An organized plan to assist the faculty in the use and incorporation of technology into courses must be developed.

While historically researchers have been very independent in their computing efforts, there now is a much greater need for central services to eliminate redundancy and take advantage of economies of scale. Moreover, as scientist/teachers become more dependent on technology for their work, a coherent approach to basic through advanced services is needed to remove barriers to doing research. Much progress has been made in administrative areas such as submitting proposals and tracking grant funds, and many useful software packages are available via a central “library” (keyserver, RCR GeneTraffic Server). However, fundamental support services are organized in only a few areas, and have led to equal access not afforded to all faculty.

Numerous systems have been developed to facilitate admissions, teaching, evaluation and other activities in the education area. They share a common technical platform, but work must continue to make the administrative systems interoperable and facilitate the aggregation of data across systems. There is a project in the “concept” phase to build an education Data Warehouse with appropriate analytic software to meet these needs.

Great strides have been made across the Medical Center in developing hundreds of web sites which did not exist before are rich in function and content. However, the paradigm is that content upkeep is distributed
outside of IT. This works for most, but not all, of the content managers. A central content management system with features for use by completely non-technical staff would be helpful in keeping information current.

There are several calendaring systems in use across the organization, which do not integrate (WebEvent, MeetingMaker, Exchange). As a result, there is not a systematic way to schedule/calendar resources, such as classrooms, meeting rooms, or other resources.

**Recommendations**

- Appoint a formal IT Steering Committee to direct efforts and allocate resources across the medical center, and to forge technological integration of education with research and clinical care.
- Establish an Education IT Subcommittee with appropriate representation and subcommittees to address its major constituencies.
- Carefully review IT requests during the capital budgeting process.
- Review the decentralized IT resources and consider centralizing some of these resources under common IT management.
- Make wireless network access pervasive throughout the Medical Center physical space.
- Deploy full Web access on all public Tisch/Rusk workstations and make selected Web access to education sites available on clinical patient desktops.
- Provide a robust, external access method for easy access to all server-based files and applications.
- Establish unity of identity across the Medical School, Tisch Hospital, and to the extent possible, the clinical and teaching affiliates such as Bellevue.
- Allocate space to faculty and staff on a recently-acquired mass-storage device known as a SAN and work out details of sharing and managing that space.
- Continue to work on improving the availability and performance of Popmail, while looking at the feasibility of unifying e-mail systems across the Medical Center.
- In concert with the Hospital, utilize a professional outsourcer’s data center capability, with appropriate disaster recovery services; to the extent possible, upgrade the current data center to professional standards.
- Evaluate and obtain technology that makes videoconferencing, webcasting, etc. simple for the lay person.
- Move to a searchable, shareable, “industrial strength” curriculum database.
- Streamline service of the Student Printing Facility.
- Develop, through the IT Steering Committee, a strategy for evaluation of computer-based exams and for “teaching the teachers” how to integrate developing technology into standard and novel curriculum.
- Evaluate the feasibility of an Enterprise Agreement for Windows Operating System and Office applications, as well as for analogous offerings for Apple equipment.
- Pursue an integrated architecture strategy of data collection and warehousing.
- Continue to improve the appeal, ease of navigation, and search-ability of the Medical Center’s web sites.
- Pursue a strategy of integrated calendaring that addresses personal, facility, and course calendaring.

**Library Usability and Functional Convenience**

The 2005 questionnaire of the School of Medicine community indicated a high satisfaction level with all service measures: circulation staff, interlibrary loans, reference, literature searching, etc. by a rating of good to excellent (Likert 4-5) by 82-90% of respondents. In the 2006 LCME Student Survey, the rating for the library overall was 12% poor or unacceptable; 25% average; and 57% good or excellent. Sixty-eight percent rated the helpfulness of the library staff as good or excellent. The library is open 24 hours, Sunday noon
through Friday 9:00 p.m., and open Saturday from 10:00 a.m. to 8:00 p.m.. There is a 24 hour study area with 6 computers and 16 study seats that is open 24 hours a day every day. During major exam sessions the student representatives and library staff work out an extended set of hours for Friday and Saturday evenings and Sunday morning coverage. Assistance is available during these hours for 96 hours a week.

The library contains a graphics area which includes audiovisual equipment for the few resources not on the web. There are no queues for these resources. In addition, a sophisticated set of graphics software including scanners, video-editing, digital cameras and color printing is available in the library graphics area. Starting September 2006, this equipment will be jointly managed by the School of Medicine’s Media Services Department and the library.

The public access computers are used at capacity. Related to the shortage of study space, there are not enough to fulfill the need. However, there also is need for quiet study space without computers; and the balance set by the library staff to accommodate this has received only comments that there is neither enough quiet space nor computer availability.

There has not been a regularly scheduled, capital replacement plan for computers in the library, and therefore the current set of computers range in age from 2-5 years. However, there is planning for the development of a three-year replacement cycle, which would be appropriate.

The Ehrman Library ranks 100 out of 120 US and Canadian libraries in square feet available. It ranks 5th in overall usage by comparative gate count. The universe of possible users on campus is over 20,000. Pressure for seating and computer use is intense. In the 2006 survey, 39% of students rated the amount of library study space as poor or unacceptable, and 24% rated the quality of the space as poor or unacceptable.

**Recommendation**
- Continue to address library space issues in accommodating resource needs including study space, group learning space, computer access and appropriate staff space for its clientele; establish a specific plan and prioritization of overall facilities upgrades.

**Library Staff Contributions to Education**

The library staff maintains an extensive education program for both medical education and general user education for faculty and staff. The undergraduate teaching program uses a building block approach to teaching literature research skills for clinical information in an evidence-based medicine environment. Beginning with a voluntary skills assessment during orientation and moving to at least one curricular experience a year, each session builds on the skills taught in the previous class. Integration into the curriculum, including various clinical experiences, inculcates an understanding of the importance of information skills throughout the student’s career and creates a foundation for life-long learning. This model is exemplary and is a strength of the curricular program. Student ratings for library classes compare favorably to general curriculum ratings.

The library also works to integrate evidence-based medicine skills into the resident instructional program through attendance at morning report or rounds in medicine, pediatrics, ob/gyn, and the cancer service. At these training opportunities, the librarians demonstrate on site how to rapidly find and choose the appropriate information to shed light on the case under discussion.

The library offers an extensive selection of professional development classes (453 contact hours with 3,500 attendees in 2004-2005) which are given during the day and early evenings at no charge. All members of the NYU community are welcome to attend. The classes emphasize skills in using the knowledge-based resources of the library for patient care and research needs, and also instruct in management of bibliographic information using bibliographic management tools available through NYU. These classes are well attended and uniformly ranked highly. The library also encourages and hosts classes in conjunction with other
departments, partnering with the Digital Media Center on instruction in presentation software and SPA, the grants administration office, on searching for grant support.

Karen Brewer, PhD, as Chair of the library is a member of the Curriculum Committee. As of September 2006, the Library’s Coordinator for Undergraduate Education became a participating member at monthly preclinical and clinical course directors meetings. The library also is a partner in the design of curriculum support tools such as the curriculum repository and SIMMS modules.

**Recommendation**

- Continue to have library faculty work with course and clerkship directors in both formal structures such as the monthly unit/module and clerkship director’s meetings and informally to ensure the most appropriate integration of library resources into the course materials delivered over the internet.