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 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 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 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 recognized schools including: Baylor, Brandeis, Brown, Dartmouth, Carnegie Mellon, Chicago, Cornell Weill, Cornell Ithaca, Columbia, Duke, Einstein, Georgetown, Harvard, Illinois, Johns Hopkins, Maryland, Michigan, Mount Sinai, NIH-GPP, Minnesota, Northwestern, Ohio State, Pennsylvania, Rochester, Rutgers, SUNY, Toronto, UBC,

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 year’s 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](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 Infekionsbiologie 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 Vice Dean for Education, Faculty & Academic Affairs and, in 2004, was named the ACGME Designated Institutional Official and in 2006, was promoted to Associate Dean for Graduate Medical Education.

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.