

Periodic Review Report

Presented by

COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

June 1, 2011

Lee C. Bollinger
President

Date of the Most Recent Decennial Evaluation Team's Visit: March 22-26, 2006

TABLE OF CONTENTS

	<u>Page</u>
PERIODIC REVIEW REPORT	
Executive Summary	iii
1. Introduction	8
2. Enhancements in Ph.D. Education	13
3. Major Challenges and Current Opportunities	16
4. Enrollment and Financial Trends	37
5. Assessment	55
6. Linking Institutional Planning and Budgetary Processes	63

Executive Summary

Columbia is the oldest institution of higher education in the State of New York and one of the oldest in the country. Started in 1754 as an undergraduate college for the sons of the New York elite, it is now one of the leading research universities in the United States. It seeks to make significant original contributions to the development of knowledge, to preserve and interpret humanity's intellectual and moral heritage, and to transmit that heritage to future generations of students. It pursues these missions through educational and research programs in a wide range of disciplines in the humanities; the social sciences; the natural, biomedical and applied sciences; and various professions, and through cooperative agreements with other educational institutions, research centers and hospitals in the greater New York region, throughout the country and abroad.

Academic activity is organized through 20 Faculties, 78 departments of instruction and more than two hundred institutes, centers, laboratories and interdisciplinary programs. It currently offers more than 435 programs at the Baccalaureate, Master's and doctoral levels. In fall 2010, it enrolled 25,212 students, and in 2009-10 awarded over 10,000 degrees and certificates. Its staff includes 4,908 salaried faculty, of whom 3,707 are full-time. Its budget for Fiscal Year 2010 was \$3.308 billion.

The University's Periodic Review Report was prepared by the Office of the Provost with assistance from the deans and senior members of the University's central administration. A draft of the Periodic Review Report was circulated among the individuals who helped with its preparation and given for comment to the faculty co-chairs of the Education Committee of the University Senate. It was also posted on the web for comment by members of the University community.

Columbia's last decennial accreditation review in 2006 focused on Ph.D. education. The visiting committee did not have any recommendations on changes that it felt the University needed to make to retain its accreditation, but it did have several suggestions which the University has found helpful as it has worked to improve the quality of its Ph.D. programs over the past five years. During that period, many of the doctoral programs have made innovative changes in their curricula to strengthen the education they give their students. In addition, the Graduate School of Arts and Sciences -- the Faculty authorized by the University's Trustees to award the Ph.D. -- has improved the mentoring of doctoral students, invested in a center that supports Ph.D. students in fulfilling their teaching obligations, strengthened the financial packages it offers and introduced several incentives and requirements to reduce time-to-degree.

To achieve its academic ambitions, the University engages in a continual effort to build strong, more innovative educational and research programs. Since 2006, four of its highest priorities have been to address its space needs, further the internationalization of its programming, enhance its curriculum and strengthen research and teaching in the sciences.

Over the past decade, the University has added an average of approximately 200,000 square feet of academic space each year. Currently, planning assumptions project a comparable, if not faster, growth rate for the foreseeable future. The strategies the University has followed to meet its space requirements in the past have now been largely exhausted, leaving it with an urgent need for room to grow. In response, the University has begun to develop a new campus in a section of Manhattan called Manhattanville. The new campus, which will occupy 17 acres of land, will allow the University to construct buildings with 6.8 million square feet over the next 25-30 years. It will also contribute to the redevelopment of an underutilized area of Manhattan that has been in decline since the Great Depression. Both New York City and the State of New York have approved the University's plans for the new campus, and preparations for the development of the first parcel of land in Manhattanville began in October 2010. Academically, Manhattanville will primarily be used for interdisciplinary research, chiefly in the sciences, and by graduate schools. While the University does not presently plan to locate any of its undergraduate programs on the new campus, they will indirectly benefit from its creation since they will be able to expand into buildings on the main campus that will be vacated when some of the graduate schools move to Manhattanville.

Columbia, like other research universities, faces a future of opportunities and uncertainties as a result of the growing globalization of human activity and the increasing mobility of intellectual talent. Since the last decennial review, the University has responded to those challenges with initiatives designed both to add to the international content of its programming on its campuses in New York and to exert a stronger presence around the world. It is currently creating a network of global centers to serve as regional bases for University involvement with the regions in which they are located. Unlike satellite campuses, the centers have a small physical presence from which their resident faculty directors and a small number of supporting personnel seek to organize educational, research and service programming at multiple sites through a network of local partnerships. It has also developed strong partnerships with universities in other countries, most notably with three of the leading institutions in France through a multi-layered collaboration known as the Paris Alliance. Finally, its schools have developed innovative educational, research and public service programs in countries throughout the world and have introduced stronger international components to its programming on both its main campus and its medical center.

Columbia offers a rich array of educational programs at both the undergraduate and graduate levels in a diverse range of subjects in the liberal arts and professional disciplines. The nature of these offerings is subject to regular review and periodic revision in response to changing student interests, the demands of the marketplace, the growth in knowledge and evolving societal needs. The past five years have been a particularly active period for educational planning and change. President Lee Bollinger established a task force to reexamine undergraduate education at the University. The task force made a series of ambitious recommendations about the size, organization, staffing and curriculum of the undergraduate programs and about the quality of life of their students. The University has started to act on some of its recommendations, and planning is underway to address the others. Most of the

schools offering graduate education have also undertaken comprehensive reviews of their programs that have resulted in substantial modifications in their curricula.

For the last decade, the University has engaged in an extended process of planning and investment in the sciences on its main campus in the Morningside Heights area of Manhattan. That initiative began in 2002 and accelerated with further reviews initiated by the Provost and President over the past three years. The University has made significant investments and program enhancements in the sciences as a result of this planning. It has constructed new buildings and renovated existing facilities; expanded the size of its faculty in selected scientific disciplines; promoted greater interdisciplinarity in its scientific research; strengthened its undergraduate programming in the sciences; and introduced new organizational arrangements to manage scientific activity on the Morningside campus. While much has been accomplished, more still needs to be done to maintain the University's standing as an outstanding center of research and teaching in the sciences. The Provost is, therefore, leading an effort in cooperation with the Executive Vice President for Research to develop a strategy for prioritizing among the objectives outlined in the recent reports and identifying the financial resources to achieve them.

Columbia's enrollments grew by 10.39 percent between 2006 and 2010 from 24,624 to 27,556. Most of the increase occurred among the full-time degree students whose numbers rose by 2,219 over the five-year period, or 10.39 percent. The largest percentage increase occurred among part-time students whose enrollments rose by 624, or 16.1 percent. Enrollments are likely to continue to grow over the next five years, and the schools are likely to continue to add students at differential rates, as they have in the past. The recent growth in enrollments has been made possible by the schools' ability to attract an increasing number of high quality applicants, thereby improving their already high level of selectivity. In addition to the growth in its overall size, the composition of Columbia's student population has changed. Most notably, the University's enrollments have become increasingly international, and the University has attracted a greater number of under-represented minorities.

The last five years have been a period of financial strength and stability for Columbia. Revenues grew from \$2.709 billion in Fiscal Year 2007 to \$3.308 billion in Fiscal Year 2011, while expenses increased from \$2.540 billion to \$3.158 billion. In each year since Fiscal Year 2006, therefore, the budget closed with a positive balance. The University achieved these financial results despite being affected by some of the worst turbulence in the country's economy in the last seventy years. Columbia responded to the financial crisis by taking decisive short-term actions that included reducing the payout from its endowment, cutting its expenses, imposing a salary freeze across most employees, slowing down new hiring and deferring some capital projects. In September 2006, the University launched a five-year capital campaign with a goal of raising \$4 billion by December 2011. By fall 2010, the campaign had almost reached its original target by bringing in \$3.85 billion. Therefore, the University extended the campaign by two years and raised its final goal to \$5 billion.

Assessment and strategic planning are an integral and ongoing part of University life. Institutional planning and assessment take place on multiple levels and in different forms. Whatever their form, they share the common purpose of ensuring that the University steps back at periodic intervals from the day-to-day tasks involved in managing its operations to evaluate the quality of its programs and devise plans for its future. A substantial portion of institutional assessment at Columbia occurs at the school level due to the diversity of the University's programs and a decision-making and budgetary process that places major responsibility for programmatic and financial decisions in the hands of their faculty and deans. In some instances, assessment is done through a system of regular review of departments and programs. In others, it involves periodic exercises in strategic planning. At the University level, the budget process is used to review and modify the plans of the University as a whole as well as those of the individual schools. In addition, the University undertakes specialized evaluations of its needs in specific areas.

Learning outcomes assessment is also managed at Columbia through a combination of initiatives by the programs, schools and the center. While the forms that learning assessment take appropriately vary from one program to another, every educational program is expected to have in place a formal plan that specifies how it measures its educational effectiveness in the context of its field and how it uses the results to improve the quality of the education it offers. Some schools have some or all of their programs accredited by disciplinary societies which have distinctive learning outcomes requirements of their own. In those cases, the University accepts the outcomes plans the schools have adopted in response to their disciplinary accrediting requirements as meeting its own expectations. For the rest, the Office of the Provost has developed a standard format for learning outcomes plans that consists of four parts. The program first defines the educational mission of the academic program. Then, it states the specific learning goals the program has set for its students and specifies how the achievement of each of the student learning goals is measured. Finally, it describes the mechanisms by which the faculty review the assessment results and use that information to improve the quality of the program. The University supplements the program plans with school-based efforts to collect and use information about learning outcomes. These consist mainly of indirect measures of student learning such as inter-institutional surveys of students and placement information on graduates.

Each school has developed its own structure for supporting the efforts of its programs to evaluate their educational effectiveness. These vary among the schools, depending on their size, the breadth of their educational programs, their internal organizational structures and cultures, and, where relevant, their disciplinary accrediting requirements. Regardless of the system they use, each involves faculty in overseeing the assessment efforts of its programs, and each has assigned administrative responsibility for learning assessment to a senior member of the staff of the dean or academic executive vice president. As the chief academic officer of the University, the Provost has the overall responsibility for learning outcomes assessment at Columbia. He has appointed a University Advisory Committee for Student Learning Outcomes Assessment to help to define the policies governing learning outcomes at the University and to make recommendations on how those policies should be implemented. It is chaired by the Associate

Provost for Planning and Institutional Research to whom the Provost has assigned the task of overall management of the University's system of learning outcomes assessment. The Associate Provost also works with a second committee consisting of the schools' outcomes officers to coordinate the assessment efforts of the schools and programs.

Columbia has a distributed financial structure that places substantial budgetary responsibility in the hands of the schools while ensuring central oversight and direction. All revenues generated by the schools remain with them, and the schools are responsible for all expenses associated with their internal operations. Each also transfers to the central administration an amount that reflects its share of the common costs associated with central institutional functions. These arrangements provide the schools with incentives to be both entrepreneurial and fiscally disciplined. They encourage the schools to generate new revenues and control expenditures and give them the means to redirect their financial resources as their academic priorities and needs change. They make the schools accountable for maintaining balanced budgets and enable the center to monitor their financial activities. Finally, they provide the center with resources to invest selectively to further University-wide objectives, to meet needs that the schools cannot handle on their own and to ensure that the University's overall institutional goals are supported.

The Provost oversees the academic programs of the University while the Senior Executive Vice President manages its administrative and student services. Both, therefore, play a central role in the University's budget system. The Executive Vice President for Finance serves as the chief financial officer of the University, while the Vice President for Budget and Financial Planning directs the actual preparation of the University's operating and capital budgets. These central officers are aided in managing the University's budget by several consultative and decision-making bodies, the most important of which is the Business Issues Group which provides central oversight of the budget.

The operating budget is constructed using a method that employs detailed budgeting of all accounts within a common University-wide framework with standard reporting formats reconciled to the audited financial statements. It is built on a web-based system, which allows for efficient input and reporting capabilities and for real-time updating, monitoring and analysis at multiple levels from the individual departments to the center. The University's capital budgeting process ensures that the capital needs of the institution are addressed in a timely and financially responsible manner. All new projects require the approval of the Capital Budget Issues Group. Depending on the cost and the sources of funding, they may also need the approval of the Trustees of the University.

Section 1: Introduction

Columbia University is an independent, privately supported, non-sectarian institution of higher education. One of the country's leading research universities, it seeks to make significant original contributions to the development of knowledge, to preserve and interpret humanity's intellectual and moral heritage, and to transmit that heritage to future generations of students. It pursues these missions through educational and research programs in a wide range of disciplines in the humanities; the social sciences; the natural, biomedical and applied sciences; and various professions, and through cooperative agreements with other educational institutions, research centers and hospitals in the greater New York region, throughout the country and abroad.

The University was founded in October 1754, when King George II granted a charter to a group of New York citizens to establish King's College. Following the American Revolution, the Legislature of the State of New York confirmed its charter, with amendments, in 1787 and furnished it with the more patriotic name of Columbia College. Over the next two decades, the Charter underwent a series of further revisions, the last of which occurred in 1810. It is under that amended Charter that the University operates today. In 1896, the Trustees formally designated Columbia a university, and in 1912, its corporate name was changed to "The Trustees of Columbia University in the City of New York" by order of the State Supreme Court of New York.

Columbia was first located in lower Manhattan near the present-day City Hall. In 1857 it moved to midtown and in 1897 to its current location on the island's Morningside Heights. The University's Medical Center similarly migrated north, before being permanently situated in Manhattan's Washington Heights in 1928.

The University's Charter empowers the Trustees to act in all matters on its behalf. The University Statutes, which were adopted by the Trustees and are amended by them as the need arises, define the constituent units of the University and describe the various types of officers who serve the University, their duties and prerogatives. The President is the chief executive officer of the University. Assisting the President is the Provost, who is the University's chief academic officer, several academic and administrative executive vice presidents and the deans of the Faculties, all of whom are appointed by the Trustees on the nomination of the President.

Academic Organization of the University

Faculties and academic departments form the basic organizational units of the University. The Faculties are commonly referred to as schools or colleges, depending upon historical conventions. In general terms, the Faculties organize the curricular programs of the University, while the academic departments provide the instruction required by those programs. The organizational relationship between Faculties and departments at Columbia is a complex one. Some Faculties are also departments; others contain multiple departments; and still others have none. Conversely, some departments are part of a single Faculty, while others belong to more than one.

Currently, the University has 20 Faculties and 78 departments of instruction. A list of both is included as Appendix 1 of this report. Affiliated with the University are three neighboring but corporately distinct institutions on Morningside Heights: Barnard College (for undergraduate women), Teachers College, and Union Theological Seminary. These institutions are accredited separately by the Middle States Commission on Higher Education. The activities of the Columbia University Medical Center are inextricably tied to those of the New York-Presbyterian Hospital with which the University established a permanent affiliation in 1921, thereby creating the country's first academic medical center. In addition to the New York-Presbyterian Hospital, the University also has agreements of affiliation with eleven other hospitals and health sciences research institutes in the greater New York region.

With the explosion in knowledge over the past few decades, much of the innovative scholarship no longer fits neatly within the intellectual confines of individual departments or schools. Increasingly, that work falls in the interstices between traditional disciplines or transcends the boundaries between them. As a result, interdisciplinary research and education, which combines the talent found in different Faculties and departments, have become the norm at Columbia.

To manage research and instruction that cross departmental and Faculty boundaries, the University establishes institutes, centers, laboratories and interdepartmental programs. Centers and laboratories are organized primarily to conduct research, while interdepartmental programs provide instruction. Institutes combine research and teaching. These units vary considerably in size, personnel, financial resources and importance to the University. Some are bigger and intellectually more influential than many academic departments. Others are highly specialized and narrow in their scope. Currently, there are more than 200 of these units at the University.

Educational Programs

Besides the Bachelor of Arts and Bachelor of Science degrees, the University currently awards eleven Master's or first professional degrees, and eight doctoral degrees. Students may receive a Bachelor's degree in 109 subject areas, a Master's or first professional degree in 216, and a doctorate in 110. In addition, the University offers 39 programs leading to advanced certificates. One hundred twenty of its programs permit students to obtain a combination of University degrees, while 30 are offered jointly with other educational institutions.

The University is accredited by the Middle States Commission on Higher Education, and the programs of ten schools are accredited by professional associations. A list of those schools is included in Appendix 2, along with the relevant accrediting agency or agencies.

Faculty and Staff

In fall 2010, Columbia had a total salaried staff of 16,623. In addition, it employed 2,979 students as instructors and research assistants.

Columbia's staff consists of several different types of personnel. At its core are the faculty, a body of teacher/scholars who bear the primary responsibility for furthering the

University’s missions of education and research. Assisting the faculty in the development and transmittal of knowledge are the University’s professional librarians and its officers of research. The latter consist of individuals who conduct research, independently or in cooperation with faculty, but who do not teach.

Together, these three groups of officers make up the University’s academic staff. To support their academic work and maintain its operations, the University employs a cadre of administrative officers and a sizeable supporting staff, many of whom are unionized.

The table below divides the salaried staff of the University by these five categories. It also shows the staff’s distribution by full-time and part-time status.

Table 1		
	Full-Time	Part-Time
Faculty	3,707	1,201
Researchers	1,869	128
Librarians	144	5
Administrators	5,754	197
Staff	3,354	264
Grand Total	14,828	1,795

Students

In fall 2010, Columbia University enrolled 25,212 students in degree programs while another 2,335 took courses as non-degree students. Section 4 of this Report provides further information on the student population. In 2009-10 Columbia awarded 1,954 Bachelor’s degrees, 7,378 Master’s or first professional degrees, 561 doctorates and 157 certificates.

Research

In Fiscal Year 2010, the University submitted almost 3,300 proposals for \$3 billion to external funding sources to support research, training and public service. It received competitive awards for 3,100 sponsored projects, with a total value exceeding \$1 billion, of which \$860 million came from federal agencies, and the remaining \$169 million from other, chiefly non-governmental, sources. Three-quarters of the sponsored funding was for research; training and public service accounted for the remainder. Direct expenditures from sponsored awards for the fiscal year totaled \$725 million. In addition, the University collected \$194 million in indirect cost recoveries which were credited to the budgets of the schools of the principal investigators.

Academic Information Resources

The Columbia University Libraries maintain a rich collection of printed and electronic materials. These include more than 11million volumes, 150,000 serials and substantial manuscript collections. In addition to this wealth of books, journals, and archives, users of the Libraries have electronic access to over 1,200 research tools and databases, providing extensive statistical data, and millions of digital images, texts, maps, videos and audio recordings.

Finances

Columbia's revenue for Fiscal Year 2010 was \$3.308 billion. Its expenses totaled \$3.158, yielding an operating surplus of \$149.6 million. The largest portion of the operating budget – 52.4 percent – was devoted to educational and research programs, while another 22.2 percent was returned to the faculty in the Medical Center paid through one of the University's practice plans. The primary sources of revenues were tuition and fees (20.3 percent), income from government grants and contracts (24.7 percent) and faculty practice plan receipts (23.7 percent). On June 30, 2010, the University's endowment totaled \$6.0 billion. The University is currently in the midst of a capital campaign whose goal is to raise \$5 billion. Further information on the finances of the University is provided in Section 4 of this Report.

Preparation of the Periodic Review Report

The University's Periodic Review Report was prepared by the Office of the Provost. In deciding on its content and collecting the information needed to write the Periodic Review Report, the Office was assisted by the deans of the University's 16 schools and their staffs and by several senior members of the University's central administration and their staffs. Drafts of the different sections of the Periodic Review Report were circulated among the individuals who helped with their preparation. The entire document was given to the faculty co-chairs of the Education Committee of the University Senate to review and has been posted on the web for comments by members of the University community. A list of the individuals contributing to its development is included in Appendix 3.

This document follows the standard format that the Middle States Commission on Higher Education has prescribed for the Periodic Review Report. It begins by discussing the progress the University has made over the past five years in strengthening doctoral education, the focus of its last decennial accreditation review. It then describes four of the major projects currently occupying the attention of the University: plans for addressing its needs for additional space; the expansion of its international programming; curricular reform and innovation; and planning and investment in the sciences. Next, the Report provides an analysis of recent enrollment trends and the University's finances. An overview of the diverse ways in which the University engages in both institutional and learning outcomes assessment follows, and the Report concludes with a discussion of how the University uses its budgetary processes to support its efforts to plan for its future.

This Report does not attempt to give a comprehensive description of the range of activities the University undertakes. Columbia is too large, diverse and decentralized to do that in a document of limited size. Instead, the Report provides selected examples from various schools and other academic units that are indicative of the range of initiatives, projects and programmatic changes happening at the University.

Section 2: Enhancements in Ph.D. Education

Columbia elected to focus its last decennial accreditation review in 2005-06 on Ph.D. education. Its self-study may be found on the web at www.columbia.edu/cu/provost/midstates/docs/FinalSelfStudy_Opt.pdf. The visiting team conducted its site visit on March 22-26, 2006. It did not make any recommendations to the Commission of actions it should require Columbia to take to retain its accreditation. It did, however, include several suggestions in its report for enhancing doctoral education at the University. The University found the suggestions of the visiting team helpful and has implemented many of them as part of its ongoing effort to strengthen the education it offers to its Ph.D. students.

As described in the decennial self-study, the Graduate School of Arts and Sciences is the only Faculty at Columbia authorized to award the Ph.D. degree. However, only half of the current 62 programs are directly supervised by that Faculty. The rest are organized and funded by one of seven other Faculties or by Teachers College, an affiliated institution, under the intellectual supervision of the Executive Committee of the Graduate School which sets the policies governing all Ph.D. programs at the University and approves their content. As a result of these organizational arrangements, the changes that have occurred in the Ph.D. programs over the past five years have varied depending on the Faculty administering them. This section of the Periodic Review Report uses the enhancements made within the programs directly managed by the Graduate School as examples of the overall progress the University has made in strengthening doctoral education since its last decennial review.

Enrollments in the Ph.D. programs in the Graduate School have declined by 10 percent since the last decennial review, as the School sought to be more selective in its admissions, to offer greater financial aid to its students and to provide better training. In addition to the change in the size of its programs, there have been some changes in the demographics of its students. One of the areas in which the 2006 visiting team made suggestions concerned the promotion of student diversity. The Graduate School has responded to its advice by increasing targeted recruitment of under-represented minorities and improving upon the financial support it provides to those it admits. As a result, applications from under-represented minorities rose by 17 percent over the five years following the decennial review, and their enrollments increased by 19 percent. In addition, the Graduate School has sought to address the lower number of minorities interested in teaching at colleges and universities by engaging in programming designed to encourage students from under-represented groups to pursue academic careers.

Since 2006, the Graduate School has not introduced any doctoral programs in new subject areas, but many of its existing programs have modified their curricula, changed their requirements, developed new methods of assessing their effectiveness or otherwise sought to improve the quality of training they give their students. The Sociology Department, for example, has restructured the requirements of its doctoral program to better prepare its students for

academic careers in its discipline. It has eliminated the written qualifying exams, relying instead on new requirements to assess students' progress toward their degrees. To provide them with the time to complete those requirements, it has reduced the number of course credits they must complete. To succeed once they are independent scholars, its students will need to contribute to the critical debates within Sociology, design and carry out research projects, present the results at conferences and in publications, and be ready to teach. To prepare them for those demands, the Department now has them

- prepare a grant or fellowship application (acceptance of the proposal is not a requirement);
- write a field statement on a topic of their choice;
- prepare a paper for a professional conference and present it in a scholarly forum; and
- submit a paper to a scholarly journal (acceptance of the paper is not a requirement).

To support them in fulfilling these requirements, the Department conducts professional development workshops devoted to these skills and has included among its required courses a year-long practicum in which students present early drafts of papers, proposals and applications for comment from their faculty and peers. A fuller description of its requirements may be found in its learning assessment plan which is included in Appendix 4.

Since 2006, the Graduate School has invested significantly in building a Teaching Center to prepare Ph.D. students to become successful college and university instructors. With a permanent director as well as additional resources, the Center now offers credit-bearing courses in pedagogy, orientation programs for new teaching assistants, general workshops on topics related to teaching and ones tailored to specific disciplines, one-on-one consultative services that include classroom observations, and a rich library of on-line teaching resources. Throughout the academic year, the Center also provides practical advice on course design and management, lecturing, grading and ethics. During the summer it offers opportunities for Ph.D. students to design and teach courses in a wide range of subjects, principally in the humanities and social sciences. In addition to supporting the work of the Center, the Graduate School has formalized the importance of teaching as a degree requirement by starting in spring 2011 to include its successful completion on students' transcripts.

As described in the 2006 self-study, much of a Ph.D. student's education occurs through the tutoring and guidance of individual faculty. By its very nature, mentoring is less structured than the interactions that take place within the classroom. It tends to be individual, informal and personalized. Mentoring consequently can vary widely in form and frequency depending on a host of factors, such as the culture of the discipline, the practices of the department, and the student's stage of study as well as the personalities of both the faculty supervisor and the student. Recognizing both its importance and its variability in quality, the Graduate School has in the past

five years introduced measures to prompt the effectiveness of doctoral mentoring and ensure greater consistency across programs. The directors of graduate studies in the programs it directs now track their students' progress toward the completion of the degree on a semester-by-semester basis. Additionally, all doctoral students in the Graduate School and their advisors must now complete a Report on Candidacy in the Doctoral Program in the second year of study and regularly update their submissions thereafter.

Students in the Graduate School have been fully funded for five years for the last decade. Since 2006, the School has raised their fellowship stipends, begun to pay directly for their facilities and health service fees which had previously been deducted from their stipends on an after-tax basis, and expanded summer fellowship support from two to five years. To encourage students to seek outside fellowships, thereby allowing it to utilize more of its own resources in areas where the opportunities for external support are fewer, the Graduate School now augments any awards the students receive with a supplement that ensures them of a total level of support that exceeds the base stipend. These financial improvements have been made possible in part by reducing the total number of Ph.D. students admitted and by shifting additional resources from other programmatic purposes to doctoral funding.

One of the goals of the enhanced funding and greater attention to mentoring has been to reduce the time students take to complete their degrees. As the self-study described, Ph.D. students took, on average, 6.4 years to complete their degrees in 2006. However, a small portion took significantly longer, despite the expectation that students should complete their degrees within seven years of their initial enrollment. These exceptions were disproportionately concentrated in the programs in the humanities and social sciences.

Over the past five years, the Graduate School has introduced some changes to reduce the number of outliers who take more than seven years to finish their studies. In addition to more effective monitoring of student progress and better funding, the Graduate School has instituted new rules that preclude students from receiving financial support from internal University sources after their seventh year of enrollment. Additionally, those who do not finish by their ninth year are no longer permitted to maintain continuous registration and must apply for readmission when they are ready to defend their dissertations. Readmission, moreover, is not automatic. It is granted instead at the discretion of the program.

Given the length of time it takes to complete the Ph.D., it is too soon to determine the full impact of the positive inducements and stricter regulations the Graduate School has introduced to encourage students to move through their programs in a timely manner. However, early indications are that they are having the desired effect.

Section 3: Major Challenges and Current Opportunities

Columbia operates in the highly competitive world of the country's major research universities. To achieve its academic ambitions, it engages in a continual effort to augment the education it offers, strengthen its faculty, build stronger, more innovative research programs and improve its administrative and business operations. This section of the Periodic Review Report discusses four of the University's most important current priorities: its search for additional space; its desire to become a more international institution; its efforts to provide its students with the highest quality education; and its need to strengthen the sciences on its main Morningside campus.

The University faces other challenges as well. The most notable of these in recent years have been financial. The University has had to respond to problems created by the country's recent economic crisis and has sought to add significantly to its endowment with a major capital campaign. Both of these challenges are discussed in the next section of this Report.

Manhattanville

By most measures, the University has the smallest amount of space among the country's major research universities. Its main campus, located in the Morningside Heights area of Manhattan, covers 32.6 acres and contains 5.6 million gross square feet of space supporting its academic mission. Its 2.7-acre Medical Center, situated in the Washington Heights section of Manhattan, 2.5 miles north of the main campus, adds another 3.2 million square feet of space devoted to research and educational programming. The University also owns two significant tracts of land outside of New York City – the Lamont-Doherty Earth Observatory and the Nevis Laboratories. Both are situated at a distance from Manhattan, are dedicated to research in specialized fields and, therefore, are not suitable locations for more general University purposes.

The University's academic square footage is three to five times smaller than the assignable space at most of its peers. Its square footage per student or faculty member is similarly considerably less than most of those institutions. Its disadvantage in space is exacerbated by the plans of some of its peers to expand significantly their academic space. Some of those plans have been scaled back or temporarily suspended due to the country's financial crisis. They are, however, further indications of Columbia's need to expand physically in order to achieve its academic goals and maintain its standing among the very best centers of education and research in the country.

Space constraints have been a problem for Columbia throughout much of its history. In fact, the decisions to build the main campus on Morningside Heights in the 1890s and the Medical Center in Washington Heights in the 1920s were largely motivated by the need for more room. Those moves addressed the requirements of the University at the times they were made, but in the past few decades, Columbia has once more found itself looking for significant additional space

for its expanding programs. Over the past decade, the University has added approximately 200,000 square feet of academic space per year. Current planning assumptions project the need to continue to grow at that rate, if not faster, for the foreseeable future.

The University has addressed its space problems building out the available land on both campuses and on nearby parcels owned by the University, purchasing additional properties in the surrounding neighborhoods, and leasing space from other institutions. It has also replaced smaller buildings with larger facilities, reconfigured existing buildings, added floors or extensions to them, and moved administrative services off-campus.

While these measures satisfied the immediate requirements that prompted them, they only temporarily relieved the pressure for more room to grow. They were additionally a less than optimal strategy for meeting the University's long-term needs since they did not permit the efficiencies, both academic and physical, that are possible in constructing integrated rather than geographically-dispersed buildings. Finally, the opportunities to grow in this manner have now been largely exhausted. The University completed the Northwest Corner Science Building on the last buildable site on the Morningside campus last year and has one remaining parcel of undeveloped land at the Medical Center which it will use to construct an additional research facility in the near future. It does have several off-campus sites it can still develop, but these are too small or not suitably configured for the construction of major academic buildings.

Recognizing that the University's limited ability to expand compromises its academic agenda, President Lee Bollinger has made the development of a comprehensive, long-term solution to its space needs one of his top priorities. Under his direction, the University has sought to find a solution to its space requirements that will accommodate its projected rate of growth for at least two or three decades; allow for the creation of a new integrated campus; facilitate cooperation with the schools and programs still located on the Morningside and Washington Heights campuses; and contribute to the well-being of its surrounding communities.

The 17-acre site identified for the new campus is in Manhattanville, an area in West Harlem about a half mile north of the main campus and two miles south of the Medical Center. Once a thriving industrial and commercial center mixed with some residential buildings, Manhattanville has been an underutilized, primarily non-residential area in decline since the Great Depression. By 2005, it consisted of a mix of warehouses, light manufacturing and small commercial businesses with a small amount of residential housing, a service facility for the Metropolitan Transit Authority and some other City-owned parcels of land.

Over the years Columbia has purchased significant properties in Manhattanville and now owns all but a small portion of the parcels it intends to develop. It has already moved some of its administrative services into buildings it has renovated in that area, thereby freeing up space on the Morningside campus for academic purposes. It has also almost completed the demolition of the buildings it owns on the first two blocks upon which development will occur.

The University's plans for Manhattanville required rezoning it from a light industrial area into an academic mixed-use zone. To obtain the necessary authorizations to build, the University went through an extended process of consultation and review with members of the community, the local community board, and City and State governments. That took years to complete. The City portion of the process culminated with the approval of the University's rezoning request by the City Council in December 2007. In May 2009, the New York State Public Authorities Control Board also granted its approval for the campus' General Project Plan, a decision that was subsequently tested and upheld in the courts. The University, therefore, now has all of the necessary approvals to build on its Manhattanville site. Demolition on the first parcel of land slated for development began in October 2010.

Initial plans for the campus call for the construction of buildings with 6.8 million square feet over the next several decades. Those facilities will principally be devoted to education and research but will include some housing for faculty and graduate students, and retail and cultural space. The campus will also have publicly accessible open areas and amenities for residents of the surrounding community as well as members of the University. To provide the campus with a cohesive, appealing design and appearance, the University has commissioned the architectural firm Renzo Piano Building Workshop to design four of the buildings that will be constructed.

Academically, Manhattanville will primarily be used for interdisciplinary research, chiefly in the sciences, or by graduate and professional schools. While the University does not presently plan to locate any of its undergraduate programs on the new campus, they will nonetheless benefit from its creation since they will be able to expand into buildings on the Morningside campus that will be vacated when some of the graduate schools move north to Manhattanville.

Construction of the new campus will occur in several phases. With a time horizon of 25-30 years, the final shape of the campus will not be apparent for some time. However, the first phase envisions several projects in the southernmost part of the Manhattanville campus. The first building to be constructed will be the Jerome L. Greene Science Center, a 450,000 square-foot neuroscience research and teaching facility that will be devoted to the interdisciplinary study of the mind, brain and behavior. It has been designed by the Renzo Piano Building Workshop. Contracts for the construction of the Center, which was made possible by a \$250 million gift from the Dawn M. Greene and the Jerome L. Greene Foundation, began to be awarded last October.

Three professional schools on the Morningside campus that currently suffer from inadequate space are also likely to move to Manhattanville during the first phase of the project: the Graduate School of Business, the School of the Arts and the School of International and Public Affairs. The Business School has already obtained a commitment of \$100 million from Henry Kravis, co-founder and co-CEO of Kohlberg Kravis Roberts & Co., to help finance its new facilities, consisting of two buildings that are now being designed by the New York architecture firm, Diller, Scofidio + Renfro. As part of the initial development of the campus, the University anticipates building a new performance and exhibition center for the School of the Arts that is being designed by Renzo Piano. Additionally, Renzo Piano is designing an academic conference

center, to be located at the intersection of Broadway and 125th Street. Finally, Renzo Piano will design a new home for the School of International and Public Affairs which is slated for development after the other buildings described above.

The University is not interested in creating a gated community isolated from its neighbors. All of the current streets through the area designated for development will remain open to both pedestrian and vehicular traffic. The campus will include 94,000 square feet of outdoor space; the buildings will be set back from the streets, both to create a more inviting appearance and to improve access to the waterfront park the City has developed along 12th Avenue; and all new buildings will have transparent glass facades to give them a more open feel. The streets will have wider sidewalks, improved lighting, trees where there is currently only concrete, and public art. The ground floors of the buildings along Broadway, West 125th Street and 12th Avenue will be occupied by retail shops, restaurants and businesses that will cater to local residents as well as the University community.

With the inclusive design of the new campus, Manhattanville will bring new intellectual, cultural and commercial life to a once marginal portion of the City while it ensures that the University can continue to expand at a pace that will satisfy the requirements of its growing programs. A map of the new campus and its proposed development is included in Appendix 5. In support of its rezoning request to the City Planning Commission, the University submitted a *Final Environmental Impact Statement for the Proposed Manhattanville in West Harlem Rezoning and Academic Mixed-Use Development* in November 2007. The first chapter of that document, which is included as Appendix 6, discusses the rationale for the new campus and the University's plans in greater detail. The full *Final Environmental Impact Statement* is available on the City's web site at http://www.nyc.gov/html/dcp/html/env_review/manhattanville.shtml. The University has posted further information and artists' renditions of the development on its own web site at <http://neighbors.columbia.edu/pages/manplanning/>.

Expanding the University's Global Engagement

Columbia has had a long institutional history of international involvement. By the late nineteenth century it was admitting a significant number of international students to its post-baccalaureate programs. Their numbers and proportion of total enrollments have increased steadily since then. Today, the University has one of the largest number of international students among the country's universities. By the mid-twentieth century, many of the educational and research programs had acquired significant international components, as was appropriate for a university in one of the world's preeminent international cities. The emphasis on international programming has steadily increased since then, driven by decisions of the schools and central leadership of the University and by the interests of individual faculty.

Today Columbia, like other research universities, faces a future of opportunities and uncertainties as a result of the growing globalization of human activity and the increasing

mobility of intellectual talent. The presidency of Lee Bollinger has in response been a period of expanding international involvement which is likely to become even more pronounced over the next five to ten years. The University is creating a network of global centers to serve as locations for international education, research and collaboration. It has developed partnerships with universities in other countries, most notably with three of the leading institutions in France through a multi-layered collaboration known as the Paris Alliance. Finally, its schools have developed strong, innovative educational, research and public service programs around the world and have introduced stronger international components to their programming.

Global Centers

While Columbia sees a compelling need to extend its international reach, it has, unlike some of its peers, chosen not to create satellite campuses abroad. In keeping with the strategic vision defined by President Bollinger, it has opted instead to create a network of global centers at key locations around the globe. Since 2009 it has opened Centers in Beijing, China; Amman, Jordan; Mumbai, India; Paris, France; and most recently, Istanbul, Turkey. In the next two to five years, it expects to establish an additional two to four Centers in other parts of the world. Planning is currently in progress for new Centers in Africa and Latin America while exploratory discussions have begun about locating Centers in other regions, such as Central Asia.

The Centers function autonomously but with a common purpose, often in cooperation with one another and within a common organizational framework. Overall direction is provided by the Office of Global Centers, led by a vice president who reports directly to the President. Each Center is directed by a resident member of the University's faculty, guided by a steering committee drawn from the faculty of the University and aided by advisory committees composed principally of educators and other leading individuals in their respective regions.

The Office of Global Centers provides the Centers with administrative support, budgetary oversight and some assistance in fundraising. However, each is expected to be financially self-sustaining. No Center is established without operating funds for at least three years and preferably more. Basic infrastructure costs are covered by a combination of endowments, current-use gifts and other, locally generated sources of income. Program funding is the responsibility of the schools and other units that use the Centers to advance their own academic missions and goals.

The Columbia Global Centers serve as regional bases for University involvement with the regions in which they are located. Unlike satellite campuses, they have a small physical presence from which their resident faculty directors and a small number of supporting personnel seek to organize programming at multiple sites through a network of cooperative partnerships between Columbia schools and interdisciplinary units and local individuals and institutions. In addition, the Centers seek to cooperate with one another on issues affecting multiple regions of the world and on initiatives that cross geographic boundaries.

The Centers also influence the shape of programming at the home campuses of the University in New York. They facilitate the introduction of a greater international content into the curricula of the schools; serve as sites for internships; promote opportunities for study abroad; provide research opportunities for Columbia faculty, especially by facilitating international research collaborations; hold conferences, workshops and other scholarly events; and create stronger links to the University's international alumni.

Despite the newness of the Global Centers' initiative, the scope of their activities is already significant. A sampling will provide a sense of their programming, the alliances they are creating for the University and their future ambitions. More complete information is available at <http://globalcenters.columbia.edu/>.

- The Beijing Center has facilitated the development of a new think tank, known as the Urban China Initiative, in collaboration with Tsinghua University to study issues concerning the urban environment. In a further collaboration with Tsinghua, the Fu Foundation School of Engineering and Applied Science has used the Center to help launch a new Genome Center in Beijing, while the University's Center for Career Education is creating international summer internship programs for Columbia undergraduates in both Beijing and Shanghai.
- As part of its Studio-X project, a global initiative that explores the future of cities, the Graduate School of Architecture, Planning and Preservation has established experimental design and research labs in the Beijing, Amman and Mumbai centers.
- The Amman Center is coordinating the development of an Institute for Digital Soil Mapping to collect data on the properties of soils in countries extending from Morocco to Uzbekistan with the goal of creating a database of information that can help to address pressing issues in the region, such as food production and the eradication of hunger, climate change and environmental degradation. It has also helped to create the Queen Rana Teacher Academy (QRTA), an independent Jordanian institute committed to advancing teacher education throughout the Middle East. In partnership with Columbia's School of the Arts, it is organizing a series of arts programs in the Middle East on subjects ranging from creative writing to photography to film. The Graduate School of Business, in cooperation with an external organization, is offering an executive education program in strategic leadership through the Center, while the School of Social Work is using its resources to work with Jordanian educational institutions and governmental bodies to professionalize the practice of social work in that country.
- The School of the Arts is utilizing the Global Center in Paris to introduce an intensive summer course that exposes advanced undergraduates and graduate students to contemporary theater and performance in Europe. Drawing upon the Paris Center's resources, the Mailman School of Public Health has formed a partnership with École

des Hautes Études en Santé Publique, the French school of public health, to promote joint educational and research initiatives. So far, the two partners have collaborated to create a combined epidemiology program and to start a joint Executive MPH program.

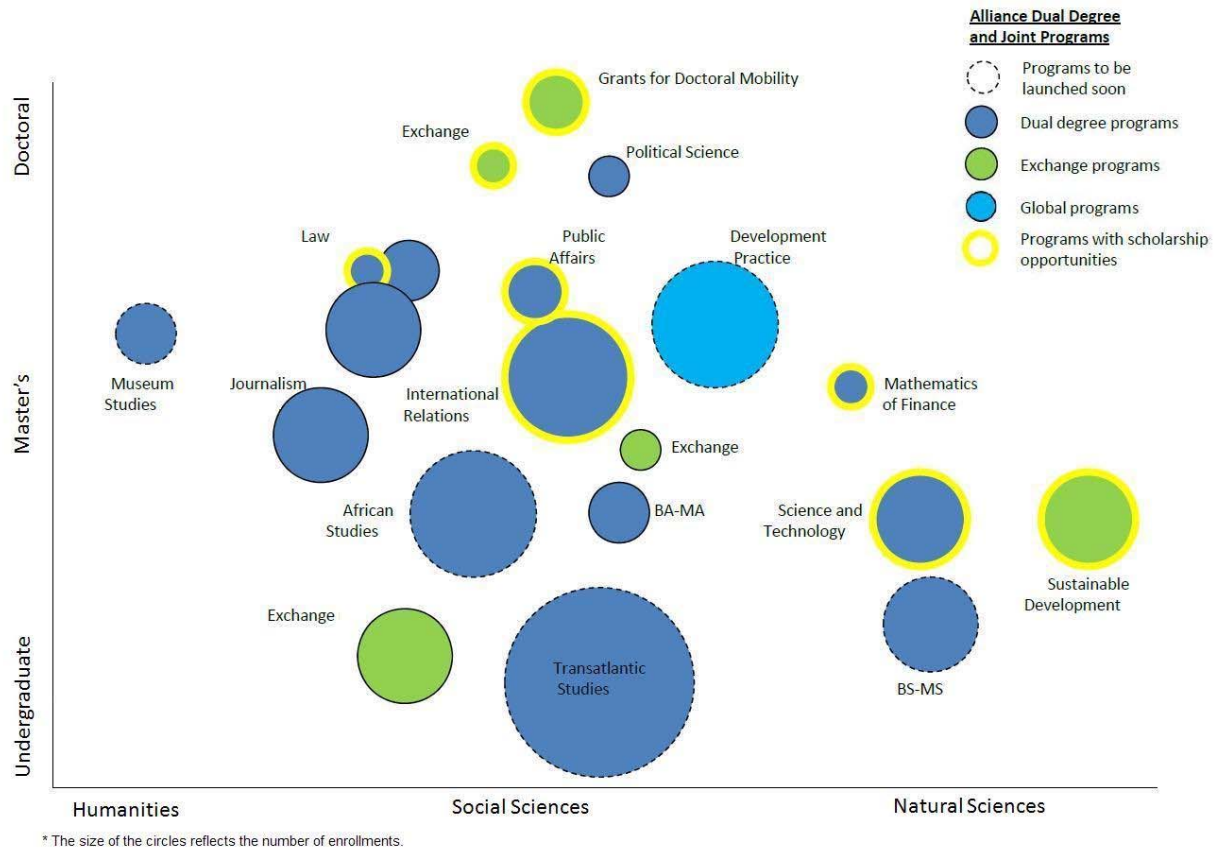
- The Mumbai Center is developing a five-year project with the University's Earth Institute on health and nutrition in South Asia that will involve both research and service to people in the region. In addition, it is exploring with several schools within the University the possibility of initiating a project designed to upgrade the quality of primary school education in rural areas. Both of these projects will be pursued with the active involvement of organizations in South Asia.

The Paris Alliance

In 2002, Columbia formed a transatlantic partnership with three of France's premier educational institutions – École Polytechnique, Sciences Po (Institut d'Études Politiques de Paris) and Université Paris I-Panthéon-Sorbonne – with support from the French Ministry of Foreign Affairs. The Paris Alliance, as it has come to be known, began with the goal of fostering collaborative programming across the full range of academic activities at the four member institutions. From that visionary beginning, it has evolved over the past five years into a complex combination of educational, research and public service programs.

Over the past five years, Columbia and its Alliance partners have opened dual-degree programs at the Bachelor's, Master's and doctoral levels that permit students to benefit from their respective intellectual strengths. Their faculty have created a series of joint courses that expose students to differing pedagogical styles and methodological perspectives. They have introduced several fellowship programs, most notably the Call for Doctoral Mobility, which provides funding for transatlantic Ph.D. research by students at their respective institutions. They have also encouraged their students to use each others' facilities and intellectual resources through administrative arrangements that facilitate short-term visits to their institutions. The graph below, "Paris Alliance - Educational Programming," shows the range and relative size of the Alliance programming across disciplines and degree levels in 2010.

Paris Alliance - Educational Programming



To encourage collaborative research as well as teaching, the Alliance has instituted a faculty exchange program that allows several Columbia faculty to spend a semester or year as visiting professors in Paris and an equal number of Parisian faculty to come to New York. In addition, in 2008, Columbia's School of International and Public Affairs and Sciences Po created the first joint faculty appointment in the Alliance for an individual to spend one term each year in New York and the other in Paris.

The Alliance promotes the development of transatlantic research teams through the Call for Faculty Joint Projects. In the past three years, this program has attracted almost 40 applications that combine the talents of over 90 faculty in 15 disciplines. In an increasing number of cases, the financial support from this initiative has served as seed-money for long-term collaborative relationships that attract funding from external sources. Other bilateral relationships promote additional faculty exchanges across the Atlantic between Columbia and each of its three Paris partners, while all four encourage faculty to make use of each other's resources on a short-term basis to pursue their individual scholarly interests.

Every year, the Alliance partners organize conferences, seminars, workshops and other scholarly gatherings in New York and Paris on pressing contemporary issues as well as scholarly questions. These are open to the public as well as to the faculty and students at the four institutions. Some are organized in collaboration with non-Alliance partners. In 2010 there were 48 separate events involving almost 119 Alliance faculty attended by over 3,400 individuals.

Columbia and its Paris partners plan to strengthen the Alliance even further in the next few years. They will expand the size of existing programs, organize additional joint degree programs and offer the students and faculty at their institutions further fellowship opportunities. They are also in discussions about new types of programming. Two areas, in particular, are likely to be the focus of new initiatives.

The members of the Alliance have already created a transatlantic dialogue on contemporary issues that is open to the public as well as their students and faculty. In the coming years they intend to extend the influence of that programming by expanding the range of topics it covers, broadening participation, utilizing new information technologies to reach new audiences and making the discussions it seeks to foster global in their reach. They will explore the possibility of creating residential fellowships in New York and Paris for influential figures of diverse backgrounds and interests who are not scholars. They also will seek partnerships with other organizations around the world and develop collaborations with the Global Centers.

The four partners are interested in finding new ways to educate their students. They are evaluating the potential for creating new types of joint degree programs, new forms of pedagogy and new educational uses of digital technologies. Their goal in these explorations is to find additional means of combining their distinctive yet complementary intellectual resources and approaches to train future generations of students.

Finally, the four partner institutions are creating financial mechanisms to sustain their collaborative activities for the long term. They have established the first joint endowment in higher education. Currently, it has a value of over \$2.3 million and will continue to grow through a joint fundraising campaign of the Alliance partners.

Further information on the Alliance and its programming may be found in the report entitled *Alliance Program* which is included as Appendix 7 to this Periodic Review Report or on its Columbia web site at <http://www.columbia.edu/cu/alliance/>.

School Initiatives

Columbia's schools, departments and interdisciplinary units are the primary sources of new international programming and their faculty carry the primary responsibility for ensuring its success. Even the Global Centers, the Paris Alliance and other central efforts at promoting a greater international profile for the University serve primarily as vehicles for supporting initiatives by the academic units and their faculty. Thus, any account of Columbia's growing

international involvement would be incomplete without a description of the creative efforts of the schools and the University's inter-school research centers and institutes. Given the wide range of disciplines the University covers, the following description will provide a few representative examples of the international programming they are developing. More detailed information may be found on the web sites of the individual units.

Consistent with their missions, some schools have a long history of international education and research. The Business School, for example, is already one of the most globally-oriented schools of its kind. The increasing global integration of business is prompting it to strengthen that orientation in every aspect of programming. The Jerome A. Chazen Institute serves as the umbrella under which all of the Business School's major international programs and resources are coordinated. In 2007, the School developed a plan for the Institute's future expansion and enhancement. Among its objectives, the plan calls for weaving global content throughout its curricular and extracurricular programming, establishing a Chazen Fellows program to bring visiting faculty to the School, broadening the scope of research conducted under the Institute's umbrella to emphasize the multi-disciplinary study of globalization, and disseminating the work conducted under its auspices to business, policymakers and the general public as well as to the scholarly community. Since the development of the plan, many of these initiatives have been launched and others are in development.

In addition, the School has expanded its international curricular offerings through both its Executive MBA-Global programs and its suite of customized executive education courses for managers and executives already active in the business world. Of particular note, in 2009 the School opened an innovative EMBA-Global Asia program in cooperation with the London Business School and the Hong Kong University Business School. The new degree program allows individuals who have or aspire to take on global responsibilities in their companies to take an integrated curriculum that provides a learning experience in three of the world's global business cities (and in Shanghai as well) and that awards them a single degree issued jointly by the three institutions on the completion of their studies.

Founded in 1946, the School of International and Public Affairs has had an international orientation from its start. Since the University's last accreditation review in 2006, the School has added several new international features to its programming. It helped to found the Global Public Policy Network, a partnership among Columbia, the London School of Economics, the National University of Singapore, and Sciences Po that seeks to address international public policy challenges through new dual degree programs, student exchanges, faculty exchanges, collaborative public policy research projects and executive education programs for policymakers. In addition, the School has developed a series of dual degree programs with partner institutions in Europe, Asia and Latin America beyond those that are part of its Global Public Policy Network and is planning to introduce several more over the next five years.

Since the problems associated with preventing disease and promoting health are global in scope, the Mailman School of Public Health has made international programming an essential

part of its educational curriculum, research activities and service to populations in need of assistance. In addition to the partnership with École des Hautes Études en Santé Publique mentioned in the description of the Global Centers, the School has in recent years added a Global Health Track to the education it offers, started a program designed specifically to train students in dealing with the public health problems created by the forced migration of populations, and developed a unique doctoral program that trains students from Africa while drawing upon their experience and perspective to enrich the School's other educational programs.

The School has launched a Global Health Initiative to develop and implement new interdisciplinary approaches that draw upon both the expertise of its faculty and a network of partnerships with academic, research institutions and governmental organizations around the world to address pressing global health issues. For example, its International Center for AIDS Care and Treatment Programs (ICAP) works at over 1,100 sites in 14 resource-poor countries, primarily in sub-Saharan Africa, to prevent and treat HIV/AIDS. In addition to providing access to critically needed HIV care services to over a million people living with the disease, ICAP supports an extensive research agenda that develops treatment and prevention models designed to address the health and social consequences of the disease. Similarly, its program for Averting Maternal Death and Disability works in over 50 countries worldwide to improve the ability of national health systems to provide emergency care for pregnant women experiencing life-threatening complications.

Virtually all of the University's other schools and many of its interdisciplinary research centers are also actively extending their international reach. For example:

- The Law School has long been one of the premier centers for the study of international and comparative law. In recognition that so many of the most pressing challenges of today are global in scope, it is adding new international and comparative courses to its curriculum, establishing new dual degree programs with international partners, and expanding study abroad opportunities for its students.
- The School of Social Work has added International Social Welfare to its curriculum as a field of practice. Its research activities now include a Clearinghouse on International Developments in Child, Youth and Family Policies that provides cross-national, comparative information about policies, programs, benefits and services available in both industrialized and developing countries. Research in the School is inextricably linked to service. It has established a Global Health Research Center of Central Asia both to study and address a range of health challenges, including HIV/AIDS, sexually transmitted infections, tuberculosis, hepatitis C, substance abuse malnutrition and mental health. In Nigeria it is helping to implement a new program, known as the Child Development Account: Savings, Training and Rewarding Savers Project, to provide public school children with a means and incentive to stay in school and save for their futures.

- In addition to the programs it has launched at the Global Centers, the School of the Arts has developed a partnership with East African filmmakers to help them strengthen their feature and short film screen plans while offering Columbia students opportunities to enrich their educational experience.
- The School of Nursing is a founding partner of the Oslo Consortium, a collaboration among schools of nursing in Europe and North America to increase exchange programs in advanced practice. It is also collaborating with the Mailman School of Public Health's ICAP project and with the World Health Organization to develop templates for nursing curricula, with a particular emphasis upon primary care prevention and treatment of HIV/AIDS, for use in sub-Saharan Africa.

The Earth Institute is an interdisciplinary, inter-school research unit devoted to understanding the impact of human activity on our planet and to mobilizing the talent spread across the University to engage in research, provide education and develop policies that promote sustainable development. To realize those goals it must necessarily engage in programming that is international in scope.

For example, the Millennium Villages Project, a partnership between the Institute and the United Nations, addresses the problems associated with poverty at the village level across sub-Saharan African. Several of its centers and programs offer assistance to partners in other developing countries with pressing economic, environmental, health and social issues. Its Center for Sustainable Urban Development conducts research and sponsors educational programs designed to promote the development of physically and socially sustainable cities in low- and middle-income countries, while its Urban Design Lab addresses the need for a comprehensive approach to long-term sustainable urbanism. Its International Research Institute for Climate and Society seeks to enhance society's capability to understand, anticipate and manage the impact of climate on human welfare and the environment, especially in developing countries. Even before the January 2010 earthquake, the Institute was working with local partners in Haiti to restore the island's natural environment and address the poverty of its population. Following the earthquake, it broadened the scope of its work to assist the country in recovering from the disaster.

Curriculum Innovation

Columbia offers a rich array of educational programs at both the undergraduate and graduate levels in a diverse range of subjects in the liberal arts and professional disciplines. The nature of these offerings is subject to regular review and periodic revision in response to changing student interests, the demands of the marketplace, the growth in knowledge and evolving societal needs. The manner in which they are delivered is also changing, in particular as a result of the profound impact that new information technologies are having on teaching and learning. The past five years have been a particularly active period for educational planning and change. President Bollinger initiated a reexamination of undergraduate education at Columbia that is still

on-going. In addition, many of the graduate and professional schools have made substantial modifications in their curricula.

Undergraduate Education

Columbia began as a college over 250 years ago and, even after it evolved into a research university in the late nineteenth century, continued to be one of the country's elite undergraduate schools. Today undergraduate education remains at the heart of the University, and its enhancement continues to be one of the top priorities of the institution.

Over the years, the University has routinely reexamined undergraduate education and undergraduate life at roughly ten to fifteen year intervals. The most recent reexamination began in 2006 when President Bollinger established the Task Force on Undergraduate Education which he chaired. The Task Force included the Provost, members of the senior leadership of the main undergraduate schools, faculty teaching in the undergraduate programs and students. It completed its evaluation and submitted its report in spring 2009. A copy of the report is included as Appendix 8 of this Periodic Review Report.

Undergraduate education is delivered through a set of complex organizational arrangements at Columbia. There are three undergraduate schools at the University – Columbia College which accepts students out of high school; the School of General Studies which enrolls non-traditional students who have returned to school after a break in their education; and the Fu Foundation School of Engineering and Applied Science. The College and General Studies are part of the Arts and Sciences, while Engineering and Applied Science is a separate professional school.

The three undergraduate schools have overlapping curricula, and their students take many courses together; they share many common academic and student services; and their students participate in a common undergraduate life. Yet there are differences among the three. For example, the College and General Studies have separate, though overlapping, core requirements but common majors that are supervised by a single Undergraduate Committee on Instruction. Students in the College and Engineering, on the other hand, take much of their core curriculum together, but thereafter their educations diverge. Students in the College and Engineering are younger than those in General Studies and are almost all full-time while General Studies has a large part-time enrollment. The College and Engineering both admit students without consideration of need and provide everyone they enroll with the financial support needed to complete their degrees. Both, moreover, are fully residential colleges. General Studies follows separate admissions, financial aid and housing policies.

In addition to its own undergraduate schools, the University has a close affiliation with Barnard College, a liberal arts college for women which is corporately separate but a Faculty of Columbia at the same time. As described in the Report of the Task Force on Undergraduate Education, the educational programs of Barnard College and those of the three undergraduate

schools are interwoven in many different ways while still retaining their distinctive individual identities.

The Task Force addressed a series of what it regarded as structural questions arising from the distinctive organizational arrangements of undergraduate education at Columbia. In addition, it sought to identify ways in which the undergraduate educational experience can be strengthened in quality and shaped to respond to the changing world outside of the University's gates. The Task Force grouped its recommendations into seven different areas. In its report, it proposed:

- an enlargement in the enrollments of Columbia College;
- the enhancement of General Studies in a manner that will integrate its students more fully with the academic and extracurricular lives of students in the other undergraduate schools;
- greater internationalization of undergraduate education through the inclusion of additional international content in the curriculum and the admission of more students from abroad;
- expanded opportunities for interdisciplinary undergraduate study;
- strengthening undergraduate science education at the University;
- tying faculty growth more closely to undergraduate demand and otherwise taking steps to ensure that all undergraduates enjoy a comparable classroom experience; and
- changing the governance structures for undergraduate education to promote greater coordination among its component parts and the more effective use of resources.

Even in the best of financial times it would take years to make the investments required to implement many of the Task Force's recommendations, and it completed its work in the midst of the most severe downturn in the country's economy since the Depression. Thus, the Task Force recognized that many of the changes it was proposing would need to wait until additional revenues could become available. Its recommendations have, nonetheless, become a catalyst for ongoing efforts to strengthen undergraduate education at Columbia.

The University has begun to make changes in the undergraduate curricula in response to the Report. New programs have been added or are under construction in subject areas that traditionally have been offered only at the graduate level. For example, students may now pursue a new undergraduate concentration in business, developed for the undergraduate schools by the faculty in Business; the College and General Studies are in discussions with Public Health to create a new program in that field as well; and both Law and Journalism have opened some of their courses to selected undergraduates.

The College is growing the size of its student body by five percent, an increase that is possible within the limits permitted by its current resources. Further expansion will depend upon acquiring additional residential quarters for students and the additional recruitment of faculty. The School of General Studies has increased the financial aid it offers, and the University has provided additional housing for its students. All three of the undergraduate schools have adjusted their admissions strategies to expand their number of international students. The University has improved its methods of data analysis on enrollments and programming, the results of which the Arts and Sciences are using to tie faculty recruiting more closely to undergraduate educational preferences. The evaluation of the manner in which undergraduate education is organized and delivered is one of the key components of a strategic planning initiative now underway in the Arts and Sciences. That initiative is described in Section 5 of this Report that examines the University's methods of institutional assessment.

In keeping with the recommendations of the Task Force, the three undergraduate schools are expanding the international opportunities available to their students. They have started to utilize the Global Centers to offer their students language training and are designing programs in substantive areas at those sites. Independent of the Global Centers, the schools are developing other forms of new international programming. For example, they have taken advantage of the Paris Alliance to create programs in cooperation with the University's Paris partners and have introduced a creative writing program, part of which will be conducted in Paris.

For nearly a century, the signature feature of an undergraduate education at Columbia has been the Core Curriculum – a set of small-group discussion seminars designed to give students a broad liberal arts education in the ideas, historical forces and cultural influences that shape the world in which they live. The Core initially focused exclusively on Western thought and culture, but it now contains a set of courses that deal with other cultures or are comparative in nature. To strengthen the international component of the Core, the College is restructuring the existing courses students take in its Global Core and providing support to the faculty to develop new ones.

Columbia College introduced a new research fellowship program in 2010-11 to increase its attractiveness as a place of study for highly talented students interested in the sciences, and it has established a faculty committee to review the effectiveness of all of its funding programs in those disciplines. In addition, the enhancement of undergraduate science education has been integrated into the University's more general planning effort to strengthen the sciences on its main campus, as discussed later in this section of the Report.

Graduate Education

Most of the schools offering graduate education have also undertaken substantial reviews of their curricula in recent years. This section of the Periodic Review Report describes four selective examples of those initiatives in the College of Physicians and Surgeons, the Graduate School of Journalism, the School of Law and the School of International and Public Affairs.

Beginning in 2009 with the class of 2013, the *College of Physicians and Surgeons* launched a flexible new curriculum that reorganizes the structure of the program leading to the M.D. degree. The College dispensed with the traditional division of courses and training by year of study, replacing it with a curriculum restructured into the categories of Fundamentals, Major Clinical Year, and Integration and Differentiation. In addition, the new curriculum fosters a team-based approach which is an essential part of clinical care today while allowing students to explore their individual goals in medicine.

The new curriculum begins the students' major clinical clerkships earlier than in the past, even while providing them with the basic science they need to be physicians, and later in their studies returns them to the classroom during the major clinical year to explore aspects of science that will be more relevant once they have had some experience working in clinical settings. It also introduces more flexibility into the education of medical students by allowing them to engage in a scholarly project in a medically related area, such as basic or clinical research, population research, community service, global health or medical education. Finally, it takes advantage of the new information technologies to enhance the learning environment.

The new curriculum is being monitored using online course evaluations, section surveys, focus groups and faculty observations. In the future student performance on national exams and their placement in competitive residency programs after graduation will also be analyzed to assess its effectiveness. Using the information collected so far, the faculty have already made some modifications to the new curriculum and expect to introduce others in the years to come.

The *Graduate School of Journalism* has been conducting an extensive review of its curriculum, in large part in response to the fundamental ways in which the new digital technologies are altering the practice and business of the profession it serves. This evaluation has already prompted the School to make significant changes in its educational programming and will lead to further changes before the review is complete.

The School has chosen to focus on one part of the curriculum at a time while keeping in mind the changing needs of its educational programming as a whole. The School has developed new educational goals for its programs, modified its learning expectations for its students and developed new methods of determining if they are achieving those expectations. It has also added new courses and programs, substantially revised ones that it has long offered, and sought to introduce students to new types of skills and knowledge that they will need to succeed after they graduate.

It has, for example, redesigned the core reporting and writing course all of its Master's students must take and added to it an intensive training program in digital technologies. It has replaced its traditionally oriented courses on media law and journalistic ethics with half-semester classes that introduce students to the legal, ethical and business issues facing journalists today and to the changing nature of their professional roles. It has changed the nature of the capstone requirement for its Master's students to make their projects a more effective mechanism for

synthesizing the knowledge and skills they have obtained during their studies. Finally, it has developed a new dual-degree program in journalism and computer science in collaboration with the Fu Foundation School of Engineering and Applied Science that is aimed at bridging the gap that currently exists between the IT and editorial departments in most news organizations, and it has opened a new center to provide future generations of journalists with the skills and knowledge to become leaders in the profession of journalism in the new digital age.

The *School of Law* has been no less active in reevaluating the education it gives its students. It has reorganized its first-year foundational curriculum; substantially restructured the individual courses that make up that curriculum; expanded its legal writing requirement; and created opportunities that previously had not existed for students to engage in international and comparative study in their first year. Its Curriculum Committee is now implementing changes in the upper years' curriculum. Among the changes under consideration are greater connections to the legal profession through new types of courses and new approaches to pedagogy; increased emphasis on interdisciplinary expertise; stronger offerings in international, comparative and foreign law; and a closer integration of legal doctrine with the surrounding business, regulatory, institutional, political and social environments.

In the last few years, the *School of International and Public Affairs* has developed a system of periodic review of its component parts and has engaged in a school-wide effort at strategic planning. These are both described in Section 5 of this Periodic Review Report. Both involve a careful examination of the School's educational programming.

In addition, in 2007-08 the School initiated a comprehensive review of its curriculum that culminated with the introduction of substantially revised programs leading to both of the degrees it offers – the Master of International Affairs and the Master of Public Administration. The objectives of that review included identifying substantive areas of excellence that could serve as focal points for future investments of the School's resources; placing a stronger emphasis on career-oriented education to prepare its students for careers around the world in the public, private and non-profit sectors; and fostering greater involvement of professionals and alumni in its programming. The first elements of the revised curricula were introduced in fall 2009. Among the changes they incorporate have been a reduction in the number of concentrations the School offers to align them more closely with the School's research and policy strengths; the development of specializations in high-level skills or specialized areas of knowledge to complement students' policy-oriented concentrations; greater attention to management training; and the addition of a required capstone workshop in which students engage in consulting assignments for an external organization.

Investing in the Sciences

For the last decade the University has engaged in an extended process of planning and investment in the sciences on the Morningside campus. That initiative began in 2002 with an evaluation conducted by the Arts and Sciences of its natural sciences program through its ARC

(Academic Review Committee) process. That process is described in Section 5 of this Report on institutional assessment and planning.

The ARC report on the natural sciences laid out a series of recommendations, some of which were adopted, including the construction of a new building. However, the central problem it identified – that the natural sciences on the University’s main Morningside campus were at risk of declining in quality and competitive standing – remained even after the investment of substantial resources. In 2008-09, therefore, former Provost Alan Brinkley appointed a new faculty committee to evaluate the University’s progress in strengthening the sciences on the Morningside campus over the six years since the ARC review and to make recommendations for their further improvement. The committee submitted its report, a copy of which is included as Appendix 9, in summer 2009. At almost the same time, the Presidentially-appointed Task Force on Undergraduate Education, described earlier in this section of the Periodic Review Report, issued a report that included recommendations for enhancing the undergraduate educational programs in the sciences. Its report is included as Appendix 8.

Since becoming Provost in September 2009, Claude Steele has made strengthening the sciences one of his priorities. He appointed a faculty working group to propose plans for implementing the recommendations in the 2009 report. It completed its review in spring 2010. In collaboration with the University’s new Executive Vice President for Research, G. Michael Purdy, he is now leading an effort to develop a strategy for prioritizing among the objectives outlined in the recent reports and to identify the financial resources to achieve them.

The University’s planned expansion into Manhattanville, described earlier in this section of the Report, adds new opportunities and a new layer of complexity to the process of building stronger science programs. The first building on the new campus, the Jerome L. Greene Science Center, will house a new interdisciplinary institute devoted to the study of the brain, mind and human behavior. The new building and the institute it will house are being folded into the science planning process now under way. By the time it is fully built out, Manhattanville will contain substantial additional space devoted to the sciences, pointing to the need to prepare long-term as well as short-term plans for its use and for the usage of any space that might be freed up on the Morningside campus and at the Medical Center by moving faculty and programs to the new location.

The University has made significant investments and program enhancements in the sciences on the Morningside campus over the past decade as a result of this planning. It has constructed new buildings and renovated existing facilities; expanded the size of its faculty in selected disciplines; promoted interdisciplinarity in the sciences; strengthened undergraduate programming in the sciences; and introduced new organizational arrangements to promote and manage scientific activity on the Morningside campus.

The University has invested over \$500 million over the past decade in constructing or renovating facilities devoted to scientific research and education and is committed to spending a

larger amount for this purpose in the near future, as it expands into Manhattanville. Most notably, it has created a new 14-story facility, known as the Northwest Corner Science Building, on the last buildable portion of the Morningside campus at a cost of \$281 million. The new building, which opened in November 2010, contains 21 laboratories, a new integrated science library, a lecture hall that seats over 170, seminar rooms and a café. With 188,000 of gross square footage, it will be home to over 250 faculty, researchers and students once it is fully occupied. The building is being used to promote interdisciplinary research by bringing together faculty with similar interests from the science departments in the Arts and Sciences and from Engineering. So far, some of its laboratories have been assigned to faculty working in such areas as nanotechnology, single molecule physics and chemistry, and biophysics imaging. Some of the remaining space may be used to recruit a team of distinguished faculty from outside Columbia, quite possibly to create an intellectual bridge to the Jerome L. Greene Science Center in Manhattanville.

The new Science Center in Manhattanville will serve as the future location of the Mind, Brain and Behavior Institute (MBBI). The research conducted there will explore how the brain and mind function at a genetic and molecular level and study the causal relationships between the brain and the mental processes that underlie perception, govern human actions and define individuality. The Institute will also be devoted to the study of the basic science of neurological diseases and psychiatric disorders and to the translation of the results of that research into new clinical therapies. In addition, it will also serve as a center for educational programming and outreach in the areas studied by its research staff.

Located between the University's two existing campuses, the MBBI will integrate the considerable intellectual talent already present on the Morningside campus and at the Medical Center in those areas and permit the recruitment of additional faculty and researchers. While participants in its work will primarily be drawn from the sciences, it is anticipated that the Institute will also forge links to faculty interested in human behavior in the social sciences, arts, humanities and some of the professional schools.

The University began work in fall 2010 on preparing the site on which the new Jerome L. Greene Science Center will be constructed. Current plans for the building itself envision as much as 450,000 square feet of space, housing as many as 70 separate laboratories.

The Northwest Corner Science Building and the Jerome L. Greene Science Center will allow for the growth of the faculty in the sciences and engineering. Overall the faculty in the professorial ranks on the Morningside campus is now thirteen percent greater than a decade ago, with further additions occurring among the lecturers and other nonprofessorial faculty who play a vital role in the educational programs in the sciences. In the natural sciences there has been a growth of nine percent in selected disciplines, while in engineering the comparable figure has been 20 percent. In addition to expanding in size, the composition of the newly hired science faculty and of those who have been tenured from the junior ranks has become more interdisciplinary with the appointment of a growing number of faculty holding joint appointments

in departments not just on the Morningside campus but at the Medical Center as well and with an expansion in the number, size and financial strength of the institutes, centers, laboratories and programs designed to promote interdisciplinary education and research in the sciences at the University.

In education, the College added a new one-semester course, the *Frontiers of Science*, to the undergraduate Core Curriculum. Using a format that combines lectures once a week by some of the University's leading scientists with small discussion sections on the remaining days, the course provides more than merely a survey of modern science. It engages students in a conversation about the nature of scientific reasoning and methods, showing how scientists formulate the questions they pursue, how they frame and test scientific hypotheses, how they evaluate the results of their experiments and how they draw their scientific conclusions.

At the graduate level, the number of students has increased in many of the science programs on the Morningside campus and the financial support they receive, as described in Section 2 of this Periodic Review Report on doctoral education, has been strengthened. The departments and their faculty have also expanded the postdoctoral training they provide and have improved the funding packages their postdocs receive.

Following on the recommendation of the 2002 ARC report, the Vice President for Arts and Sciences created the position of Associate Vice President for Science to provide stronger leadership for the natural sciences departments. This year that position has been upgraded to Dean of Science and given enhanced authority to promote the scientific disciplines within the Arts and Sciences and build stronger linkages between them and the sciences in other parts of the University.

While much has been accomplished over the past decade, the University's leadership and its faculty believe that there is more still to be done to maintain its standing as one of the country's leading centers of research and teaching in the sciences, as demonstrated by the report of the 2009 Planning Committee.

- While the faculty has grown in recent years, it is still not optimally sized to provide the breadth of expertise and the concentration of talent needed in the areas covered by the University's science programs.
- Increasingly, scientific breakthroughs are occurring at the boundaries between disciplines. To position itself to contribute to the most current research, the University will have to find additional ways of overcoming the barriers inherent in its disciplinary-based organizational structure, to foster cooperation among its existing faculty and to recruit new talent in interdisciplinary fields of scientific inquiry.
- The Northwest Corner Science Building, other recently built or renovated facilities and the Jerome L. Greene Science Center address only some of Columbia's facilities

needs in the sciences. Existing buildings on the Morningside campus still require extensive costly renovations to make them scientifically current and additional facilities will be needed for further expansion.

- Some scientific instrumentation is too complex and costly to leave to the individual scientist or department to procure and maintain, nor is it cost-effective or scientifically efficient to duplicate them across different parts of the University. Examples of these include equipment for imaging, molecular characterization, scientific computing, fabrication and testing. Columbia is well behind many of its peers in creating shared facilities to provide its scientists with these necessary services.
- Students, both undergraduate and graduate, play an important role in attracting the best scientific talent and in furthering the research they conduct. The Task Force for Undergraduate Education has recommended that the University adopt measures to increase the representation of science majors among the undergraduate population and to provide them with a stronger education. Similar steps are desirable at the graduate level to recruit and fund the best students and to make Columbia a more attractive destination for outstanding postdocs interested in advancing their training.

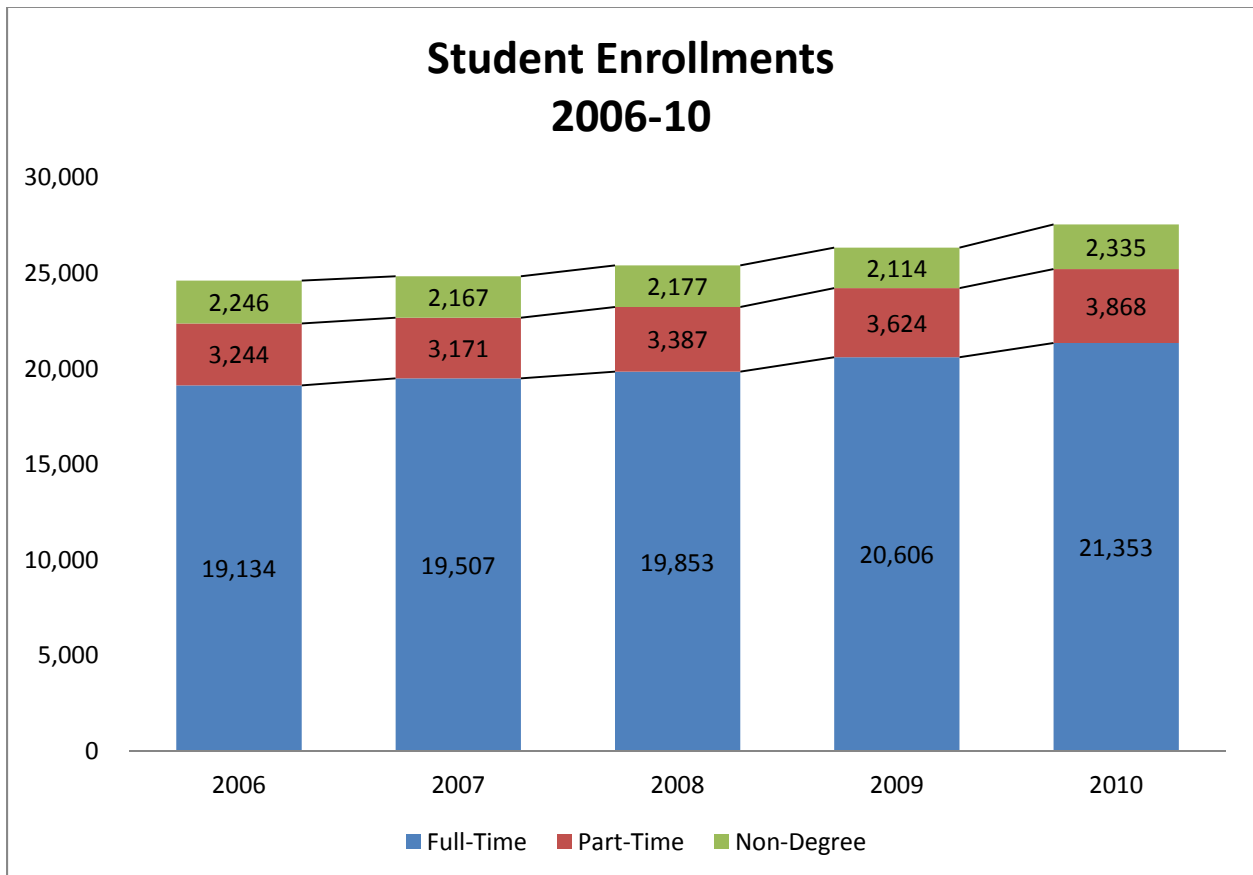
These and other needed improvements show the scope of the enhancements the University will have to consider to achieve its ambitions in the sciences. Taken together, their costs cannot be met with the existing resources of the University without compromising its current level of excellence in the humanities, social sciences and professional disciplines. Thus, it will be necessary to prioritize among the multiple demands upon its resources and to find additional sources of revenues for the sciences. This, in turn, will require the University to strengthen the type of scientific planning it has undertaken in recent years and to make difficult choices on the best ways of investing in its scientific programs.

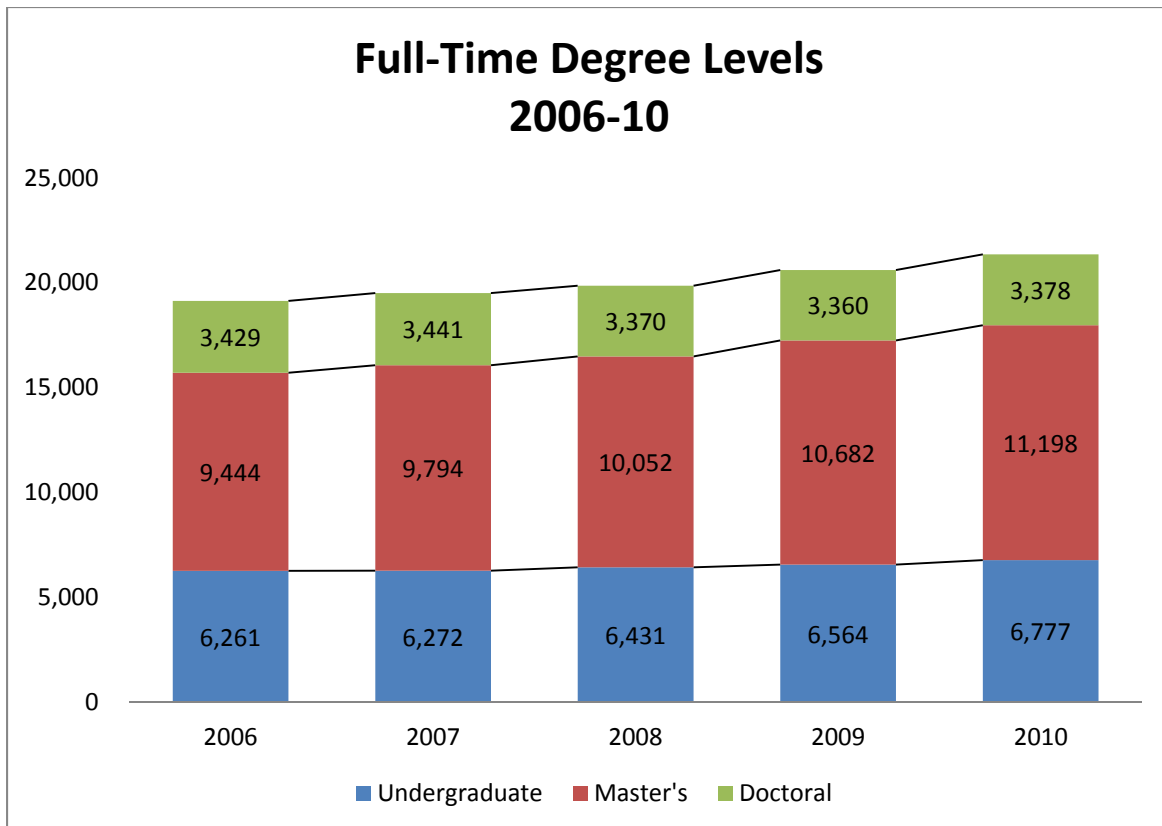
Section 4: Enrollment and Financial Trends

Enrollments

Columbia's total enrollments grew by 10.39 percent between 2006 and 2010 from 24,624 to 27,556. In 2010, the University enrolled 25,221 degree candidates, including 21,353 who were studying full-time and another 3,868 who were part-time. The corresponding figures for 2006 were 19,134 full-time and 3,244 part-time students. An additional 2,335 enrolled as non-degree students in 2010 compared to 2,246 in 2006.

The graph entitled "Student Enrollments, 2006-10" (below) shows the growth in enrollments, divided among full-time, part-time and non-degree students, while "Full-Time Degree Levels, 2006-10" (on the following page) charts the changes in full-time enrollments by degree level over the same period.





The greatest numerical increase occurred among the full-time degree students whose numbers rose by 2,219 over the five-year period, or 10.39 percent. The largest percentage increase occurred among part-time students whose enrollments rose by 624 or 16.1 percent. Non-degree students, almost three-quarters of whom are enrolled in the School of Continuing Education, grew by a modest 3.81 percent.

The changes in enrollments were spread unevenly among the schools of the University as shown by the table on the following page entitled “School Enrollments, 2006-10: Full-Time/Part-Time Enrollments by Undergraduate, Master’s and Doctoral Levels.” The number of degree students actually declined in Dental Medicine and Nursing, while the percentage increases in the other schools, excluding Continuing Education which is a special case, ranged from 4.8 percent in the medical programs in the College of Physicians and Surgeons to 34.3 percent in Public Health and 48.7 percent in Engineering. (The decline in Dental Medicine was actually an anomaly caused by idiosyncratic conditions in 2006. In recent years, the College’s enrollment has, with small annual fluctuations, remained stable.) Within the individual schools, moreover, there have also been shifts in the pattern of enrollments, with some programs being downsized while others have grown. For example, the Graduate School of Arts and Sciences decreased its Ph.D. enrollments, but the reduction was more than offset by taking in additional Master’s-only students. Similarly, the Business School expanded its EMBA programs while cutting back on Ph.D. enrollments.

School Enrollments 2006-10												
Full-Time/Part-Time Enrollments by Undergraduate, Master's/First Professional and Doctoral Levels												
	2006		2007		2008		2009		2010		Δ%	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	06 to 10	06 to 10
Undergraduate	6,261	954	6,272	834	6,431	898	6,564	974	6,777	1,021	7.6%	6.6%
Columbia College	4,157	12	4,170	15	4,202	13	4,311	13	4,401	12	5.5%	0.0%
Engineering and Applied Science	1,402	5	1,423	5	1,452	5	1,428	4	1,449	5	3.2%	0.0%
General Studies	702	937	679	814	777	880	825	957	927	1,004	24.3%	6.7%
Master's/First Professional	9,444	2,097	9,794	2,154	10,052	2,329	10,682	2,493	11,198	2,701	15.7%	22.4%
Architecture, Planning and Preservation	596	12	587	9	609	12	631	13	678	4	12.1%	-200.0%
Arts	784	1	816	8	819	12	860	13	847	7	7.4%	85.7%
Business	1,796	66	1,786	74	1,796	77	1,900	66	1,890	103	5.0%	35.9%
Continuing Education	9	366	21	404	31	526	81	596	140	723	93.6%	49.4%
Dental Medicine	409	0	393	2	374	0	386	0	392	0	-4.3%	0.0%
Engineering and Applied Science	388	371	446	415	563	479	619	567	756	592	48.7%	37.3%
Graduate School of Arts and Sciences	513	379	556	365	599	362	694	347	791	351	35.1%	-8.0%
International and Public Affairs	1,021	194	1,115	168	1,110	148	1,123	132	1,184	131	13.8%	-48.1%
Journalism	258	89	282	90	263	88	314	102	275	92	6.2%	3.3%
Law	1,450	6	1,447	6	1,484	4	1,565	2	1,612	3	10.0%	-100.0%
Nursing	287	218	307	221	324	187	361	198	268	257	-7.1%	15.2%
Physicians and Surgeons	831	24	849	24	851	21	851	24	873	20	4.8%	-20.0%
Public Health	450	314	505	311	509	335	548	336	685	330	34.3%	4.8%
Social Work	652	57	684	57	720	78	749	97	807	88	19.2%	35.2%
Doctoral	3,429	193	3,441	183	3,370	160	3,360	157	3,378	146	-1.5%	-32.2%
Architecture, Planning and Preservation	51	1	48	1	49	0	52	0	55	0	7.3%	0.0%
Business	103	0	92	0	87	0	89	1	93	0	-10.8%	0.0%
Engineering and Applied Science	536	36	574	34	595	39	633	37	642	30	16.5%	-20.0%
Graduate School of Arts and Sciences	1,944	34	1,929	30	1,870	17	1,787	22	1,801	17	-7.9%	-100.0%
International and Public Affairs	17	0	19	0	20	0	27	0	29	0	41.4%	0.0%
Journalism	32	1	33	1	27	1	27	1	27	1	-18.5%	0.0%
Law	22	0	19	0	14	0	13	0	12	0	-83.3%	0.0%
Nursing	46	30	37	31	28	27	37	17	29	21	-58.6%	-42.9%
Physicians and Surgeons	511	0	521	0	505	0	510	0	509	0	-0.4%	0.0%
Public Health	107	81	111	79	121	67	121	76	126	71	15.1%	-14.1%
Social Work	60	10	58	7	54	9	64	3	55	6	-9.1%	-66.7%
Grand Total	19,134	3,244	19,507	3,171	19,853	3,387	20,606	3,624	21,353	3,868	10.39%	16.1%

At Columbia the size of programs is determined primarily by the schools. Each makes its decisions in the context of the fields it covers, changes in demand, competitive pressures, its financial condition and its physical capacities. There is, therefore, no single explanation behind the changes reflected in the graphs and table above. There are, however, several common themes:

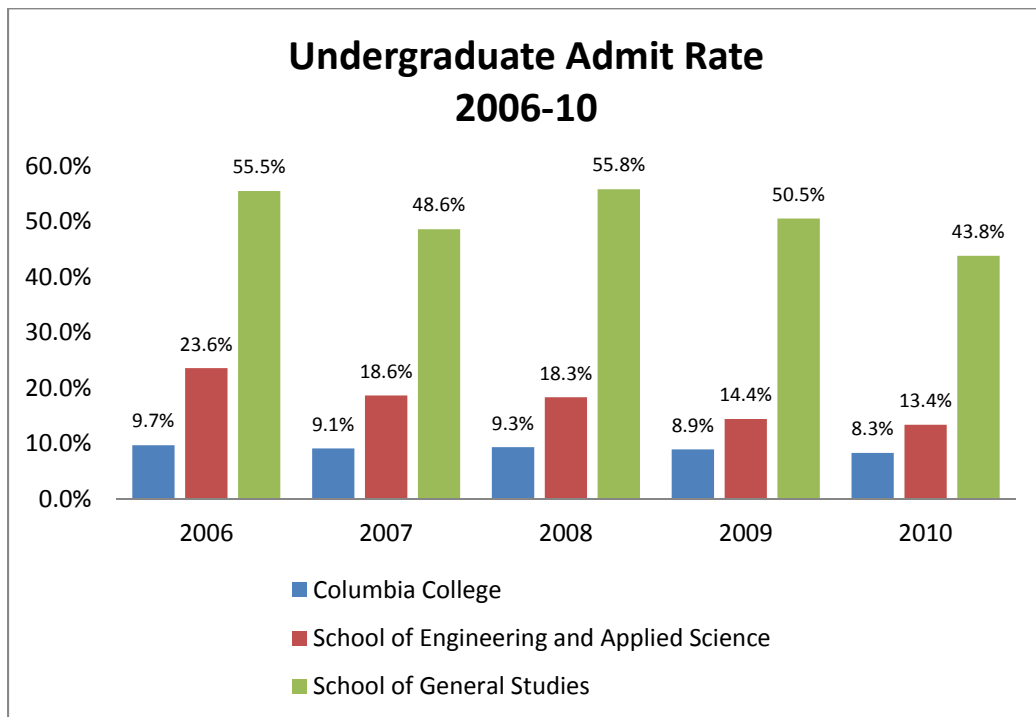
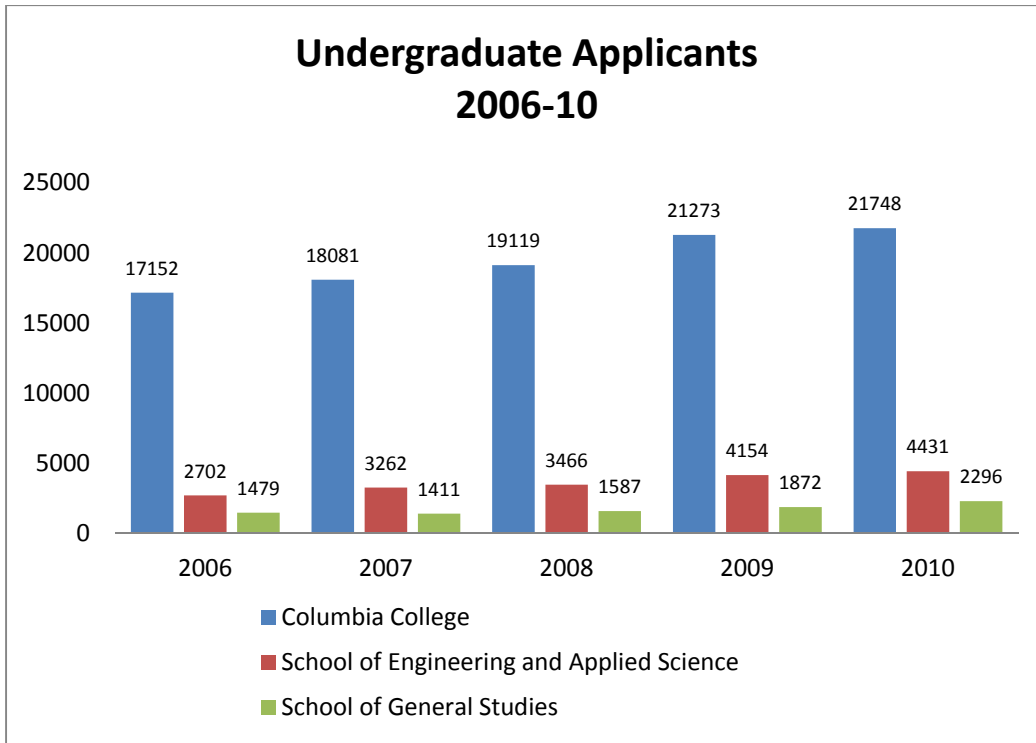
- Some of the change was unintentional, the result of unanticipated fluctuations in yield.
- Some schools chose over the last three years to increase their enrollments temporarily to generate additional revenues as part of their efforts to cope with the budgetary losses resulting from the country's economic problems. Once the budgetary pressures on those schools ease, much of the increases attributable to this factor will disappear.
- In some fields there is an inverse relationship between the economy and student interest in furthering their education. In those fields the economic downturn of the last three years has led to an increase in the number of highly qualified applicants, making it possible for schools to expand their enrollments without sacrificing quality.
- In some fields where a Bachelor's degree used to be sufficient for an entry level position, increased professional expectations have given those with more advanced training a competitive advantage, thereby pushing students to enroll in graduate programs, not just at Columbia but at institutions across the country.
- Several schools have added new programs in the past five years to broaden their curricular programming. In some cases, they have acted in response to intellectual changes in their fields. In others, they have sought to address emerging social needs or workforce shortages, especially for individuals skilled in the new information technologies.
- Schools have also entered into collaborative arrangements with other universities, especially abroad, to establish joint degree programs that expand their enrollments without requiring the students to be in residence at Columbia for their entire program.
- Doctoral enrollments in the sciences and in selected social science disciplines are closely tied to the University's research agenda. In those disciplines there is a symbiotic relationship between doctoral students and faculty in which the former are supported on the latter's externally sponsored awards throughout much of their studies, and in the process of completing their dissertations contribute to the overall research goals of their principal investigators. Over the last five years, several schools that follow this model have expanded the size of their full-time faculty which in turn has led to growth in their doctoral enrollments.
- Columbia College has increased its enrollment in response to the recommendations of the recent Task Force on Undergraduate Education, as described in Section 3 of this Periodic Review Report.

- Finally, the University established the School of Continuing Education in 2002 to offer degree programs in subject areas where there is a demand for professionally-oriented training. After an initial period of slow growth, the School has developed five new programs over the past five years.

A survey of the individual schools indicates that some have plans to enroll additional students, either in new programs or by expanding existing offerings. Therefore, the University does expect enrollments to continue to grow. The growth will continue to be spread unevenly over the different schools of the University, with some expanding minimally or not at all, while others will materially grow their enrollments.

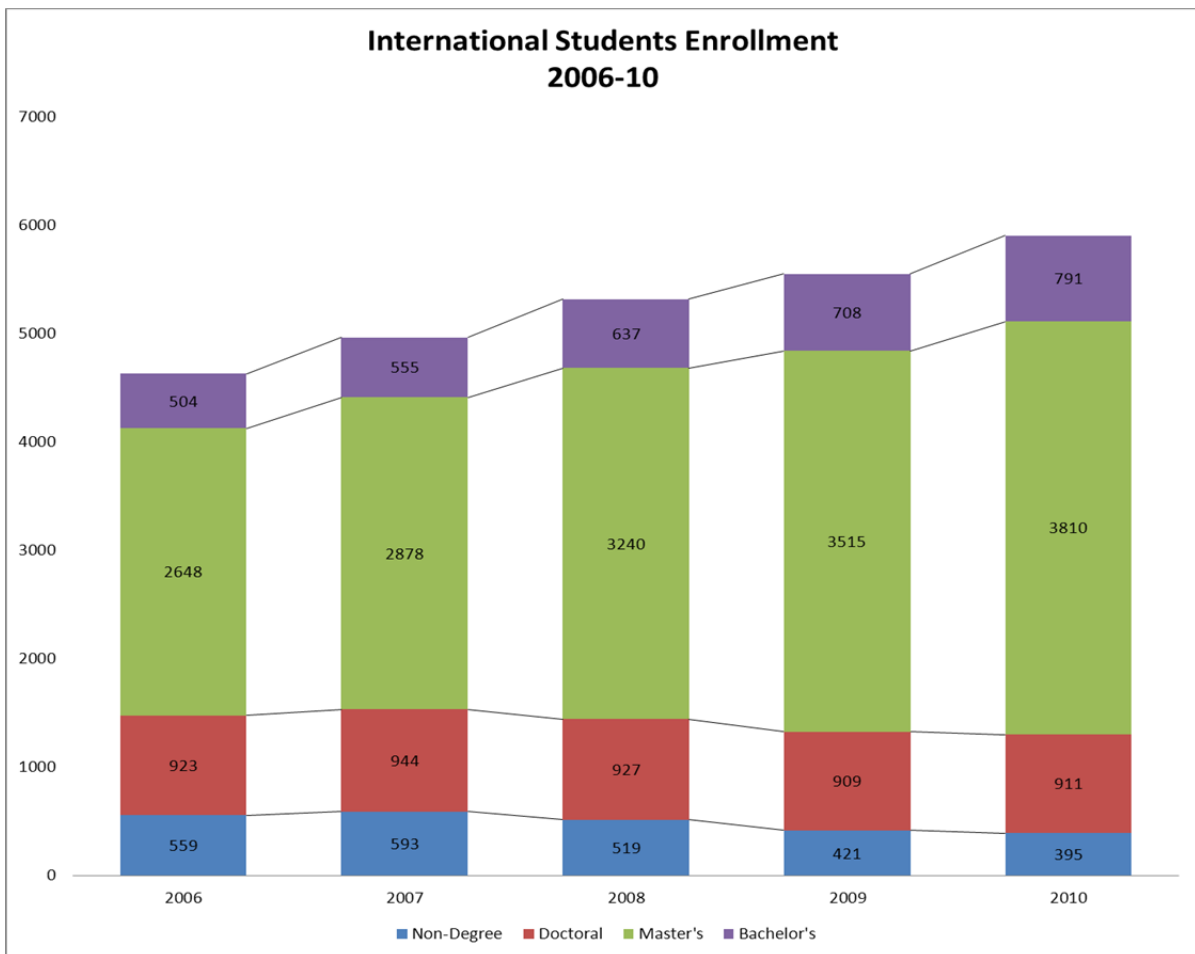
We also anticipate that the enrollments in some schools, especially Continuing Education, may increase since they are seriously exploring the possibility of offering on-line variants of their programming. Currently, only the Fu Foundation School of Engineering and Applied Science takes advantage of the new information technologies to compete in the distance-learning market. In response to the growing interest among the schools in distance education, the Education Committee of the University Senate is developing guidelines for those programs.

The recent growth in enrollments has been made possible by the effectiveness of the schools in attracting an increasing number of high quality applicants. Columbia's schools have long been among the most selective in their respective disciplines. Over the past five years their selectivity has become even stronger. During that period, the number of applicants has increased substantially in almost every school, while acceptance rates have generally dropped even where there has been an increase in enrollments. In some, moreover, the yield – the number of accepted students who actually enroll – has also improved. The graphs on the following page show the growth that has occurred in the applications of the University's three undergraduate schools and the accompanying decline in their acceptance rates.



The graduate schools, with the exception of International and Public Affairs, also saw the number of applications they received grow significantly over the same period, with increases as high as 48 percent in Engineering and 44 percent in Public Health.

In addition to the growth in its overall size, the composition of Columbia’s student population has changed over the past five years. Most notably, the University’s enrollments have become increasingly international over the last five years. During that period the students from other countries increased from 4,075 to 5,512, and their percentage of the total enrollments rose from 16.81 percent to 20.00 percent. As shown by the figures in the graph, “International Students Enrollment, 2006-10,” the growth in the University’s international student population occurred primarily at the Master’s level, where its number increased by 43.88 percent. International enrollments also grew in the Bachelor’s programs, but declined marginally at the doctoral level where they were already high.



While there has been little change in the gender composition of the students, with women making up a little more than half of the enrollments, the number of minorities, and especially those belonging to historically under-represented groups – African Americans, Hispanics, Native Americans and Pacific Islanders, has grown over the past five years. The government’s

introduction of new reporting categories for ethnicity and race has made it impossible to measure the exact dimensions of that growth. However, available data suggest that the total number of minority students grew by more than 15 percent between 2006 and 2010, while those in under-represented groups increased by over 25 percent.

Financial Trends

The last five years have been a period of financial strength for Columbia, despite some of the worst turbulence in the country's economy in the last seventy years. The University's solid growth in revenues and the swift action it took in response to the global financial crisis have allowed it to maintain a balanced budget throughout the period while also permitting it to continue to invest in its core priorities of excellence in teaching, research and clinical care. This section of the Periodic Review Report provides an overview of the University's current financial state and discusses how dealt with the impact of the country's economic problems. The section also describes the results of a Capital Campaign launched in 2006 whose goal is to raise \$5 billion in new resources by the end of Fiscal Year 2013.

Overview

The relative financial health of the institution can be seen in the table below. Revenues have remained strong, growing from \$2.822 billion in Fiscal Year 2007 to \$3.308 billion in Fiscal Year 2010, while expenses grew from \$2.688 billion to \$3.158 billion. For Fiscal Year 2011 revenues and expenses are budgeted to be \$3.195 and \$3.130 billion respectively. In each year since 2007, Columbia's budget closed with a positive balance, even in those years in which the negative effects of the country's economic problems were most severe.

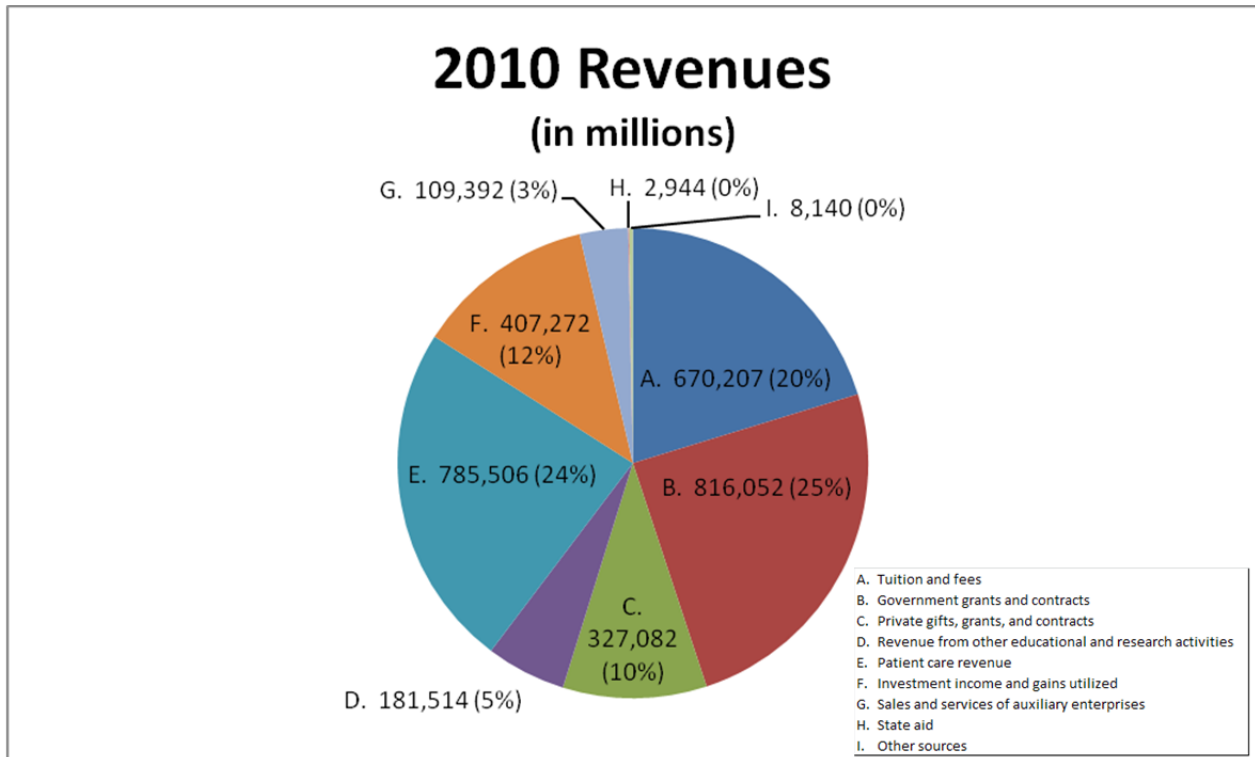
Trends in Revenues and Expenses (in millions)				
	2007 Actual	2008 Actual	2009 Actual	2010 Actual
Total Revenues	\$2,822.267	\$3,034.002	\$3,224.543	\$3,308.100
% Change	4.1%	7.5%	6.3%	9.0%
Total Expenses	\$2,688.355	\$2,894.809	\$3,064.037	\$3,158.488
% Change	5.8%	7.7%	5.8%	9.1%
Change in Net Assets from Operating Activities	\$133.912	\$139.193	\$160.506	\$149.612
Change in Net Assets from Non-Operating Activities	\$1,191.516	(\$123.505)	(\$1,600.063)	\$620.100
Total Change in Net Assets	\$1,325.428	\$15.688	(\$1,439.557)	\$769.712
Net Assets				
Beginning of the Year	\$7,828.024	\$9,153.452	\$9,169.140	\$7,729.583
Ending of the Year	\$9,153.452	\$9,169.140	\$7,729.583	\$8,499.295

Detailed information on the Fiscal Year 2011 budget may be found in the Fiscal Year 2011 Proposed Operating Budget in Appendix 10. Several appendices contain recent historical information on the University's finances:

- Appendix 11: *Consolidated Financial Statements June 30, 2010 and 2009*
- Appendix 12: *Report to the Audit Committee, PwC Observations and Recommendations as of June 30, 2010*
- Appendix 13: *IPEDS Financial Submission, 2010*
- Appendix 14: *Consolidated Financial Statements June 30, 2009 and 2008*
- Appendix 15: *Report to the Audit Committee, PwC Observations and Recommendations as of June 30, 2009*
- Appendix 16: *IPEDS Financial Submission, 2009*
- Appendix 17: *Consolidated Financial Statements June 30, 2008 and 2007*
- Appendix 18: *Report to the Audit Committee, PwC Observations and Recommendations as of June 30, 2008*
- Appendix 19: *IPEDS Financial Submission, 2008*

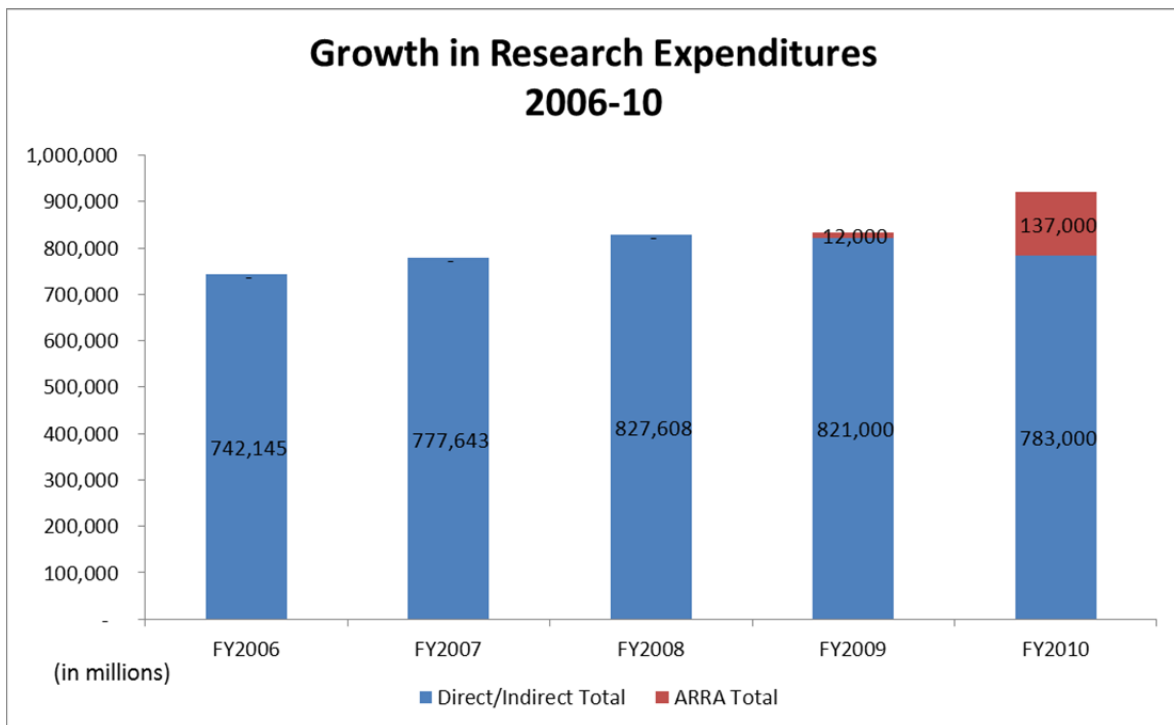
The discussion that follows refers to the period from Fiscal Year 2007 through Fiscal Year 2010.

Columbia benefits from a diverse revenue base. The University's three primary revenue streams -- tuition, research and patient care -- each comprise between 20 percent and 25 percent of total revenue. The following chart shows the distribution of the \$3.308 billion for Fiscal Year 2010:



In the period from Fiscal Year 2007 through Fiscal Year 2010, total University revenue grew at a compound annual growth rate of 5.4 percent. Total tuition receipts grew at a compound annual growth rate of 8.5 percent, reflecting growth in tuition rates and the enrollment increases described earlier in this section of the Periodic Review Report in both its graduate and undergraduate programs. The University’s investment in financial aid support grew at a higher annual rate (11.8 percent) per year, outpacing growth in gross tuition receipts, and reflecting substantial enhancements in the University’s undergraduate financial aid policy, with the result that net tuition (gross tuition receipts less financial aid expense) consequently increased at 7.3 percent per year.

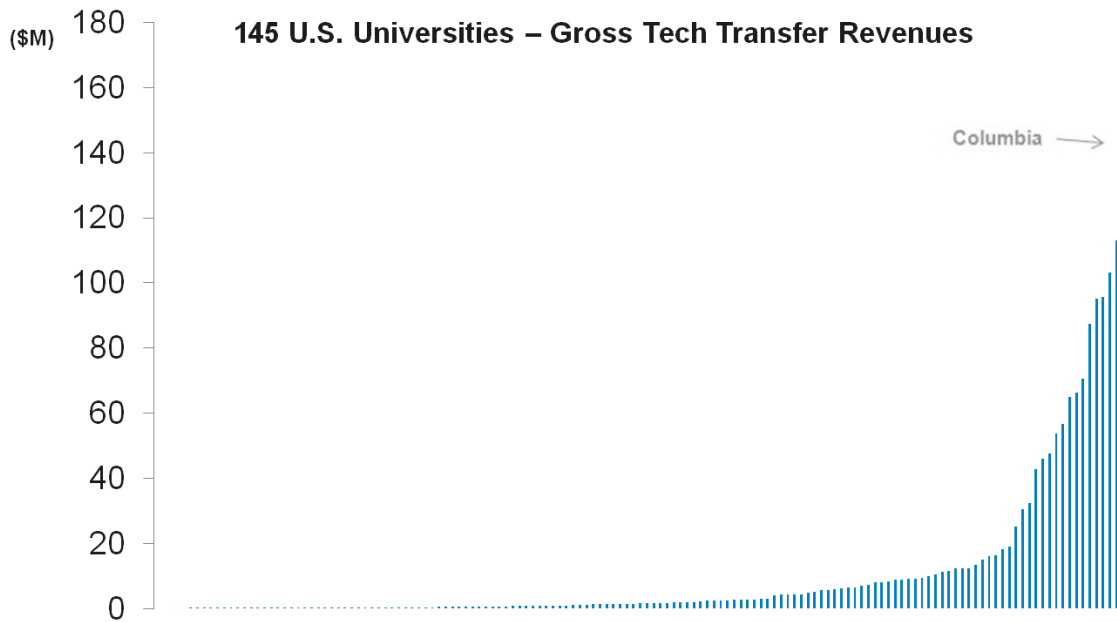
The University’s largest revenue category, direct and indirect support from government agencies for grants and contracts, grew at a compound annual growth rate of 9.8 percent over the period, in spite of a flattening of, and even a reduction in, available awards from some federal and other sources. Approximately 69 percent of research activity at the University is conducted at the Columbia University Medical Center. The three largest sources of funding are the National Institutes of Health (38 percent), other Department of Health and Human Services agencies (16 percent), and the National Science Foundation (9 percent). As seen in the graph “Growth in Research Expenditures, 2006-10” below, the base federal grant and contract expenditures have remained relatively steady throughout this period. At the same time, Columbia was among the most successful educational institutional in securing funds from the American Recovery and Reinvestment Act of 2009. In Fiscal Year alone, it spent \$137 million in research funding from the federal stimulus package. Altogether, the University has received 410 ARRA awards totaling \$239 million. The remaining, unspent funds from that source will be available through Fiscal Year 2015.



In the 2007-10 time period, the University experienced strong growth in revenue for patient care activities. Faculty at the Medical Center conduct patient visits through its faculty practice plans and provide clinical and educational services to hospitals with which the University is affiliated. (Columbia does not own a hospital, depending instead on affiliated hospitals, most importantly the New York-Presbyterian Hospital.) During this period patient care revenue grew at a compound annual growth rate of 5.8 percent per year.

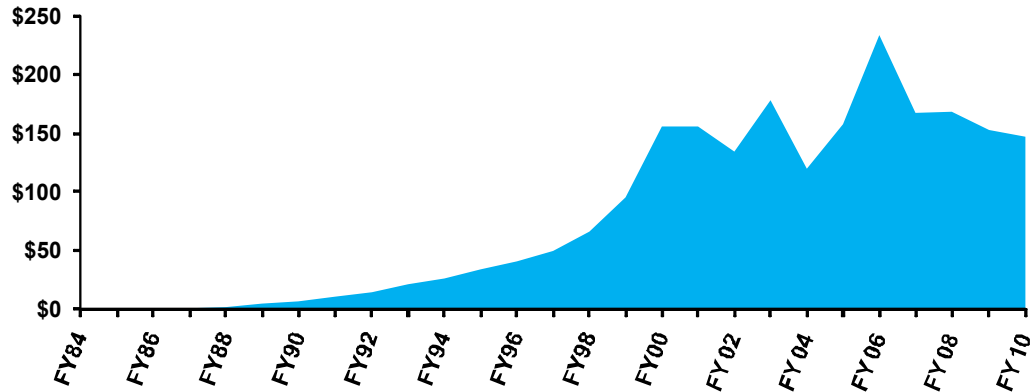
Columbia has also enjoyed success in its technology transfer efforts. As shown in the chart below, Columbia has been one of the top recipients of these revenues among the country's research universities.

Columbia's Gross Tech Transfer Revenues



Further, the graph below shows that Columbia has been able to maintain its revenue flow from technology transfer in spite of the economic downturn.

Columbia's Gross Licensing Revenues, FY1984 - 2010



A substantial component of the University's revenue comes from the support of its alumni and donors, including private foundations. Not surprisingly, the broader economic downturn affected fundraising results in 2009 and 2010. All the same, two of the largest gifts in the University's history which were made during this period-- \$400 million for financial aid and \$250 million for the construction of a new science building. Following the FASB accounting rules, these will not be recognized on the financial statements until the Fiscal Year 2011 reporting period due to conditions associated with these gifts, which have now been met.

The University's investment portfolio is a sizeable portion of its total asset base, and, therefore, is a major determinant of the changes in its net assets. Like many other universities, Columbia was hurt by the global financial crisis in Fiscal Year 2009, experiencing a loss of 16.1 percent in the value of its investment portfolio. However, its liquidity remained strong and its returns exceeded the indices the University uses as benchmarks. Moreover, the portfolio returns in Fiscal Year 2010 reflected a strong rebound of 17.3 percent. At the end of that fiscal year, the value of its endowment stood at \$6 billion. The University's annualized returns over time were as follows:

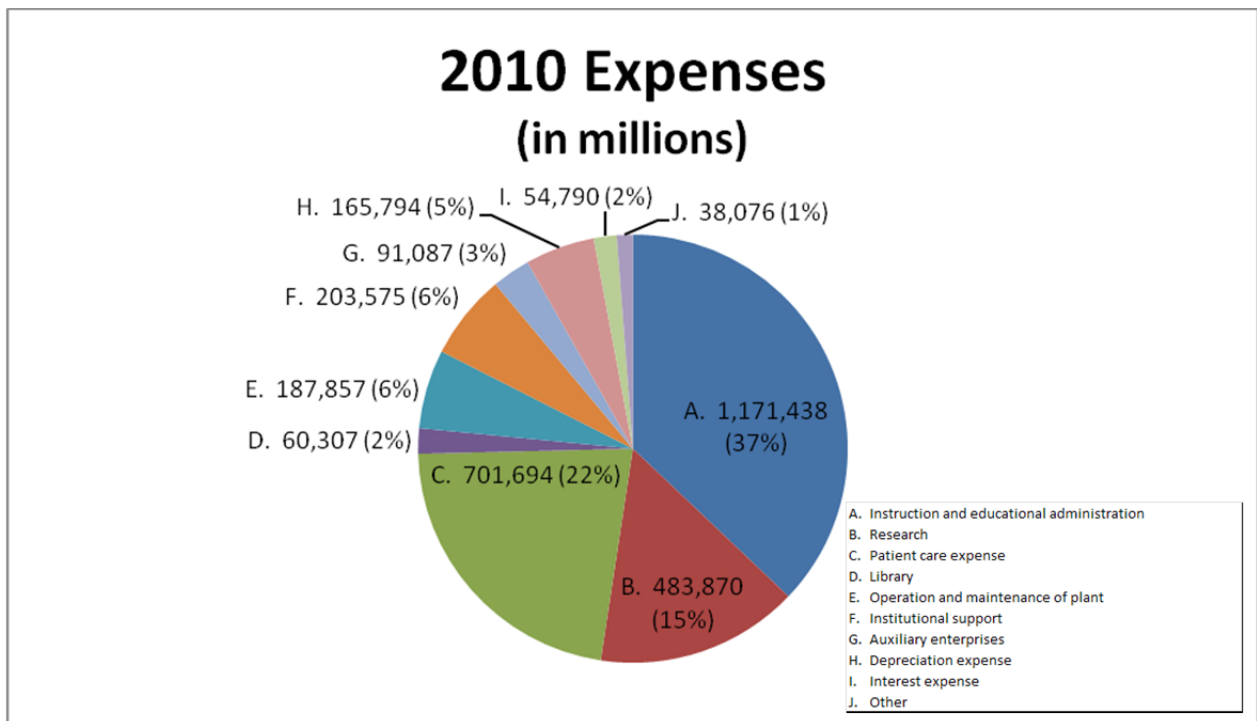
Columbia University Investment Returns

One Year	3 Year	5 Year	7 Year
17.3%	0.1%	7.9%	10.5%

Unlike many of its peers, Columbia did not borrow during the fiscal crisis to cover its operating expenses. The total amount of its bonds and notes payable remained relatively

unchanged from 2008 to 2010. As a result, changes in net assets in recent years have generally reflected the changes in the value of the University’s investment portfolio. Net assets in Fiscal Year 2011 are expected to increase substantially, finally returning to and exceeding 2008 levels, even taking into account the University’s debt offering that closed in February 2011. The increase in net assets result from strong investment portfolio returns in 2011 as well as the recognition for financial statement purposes of several large pledges.

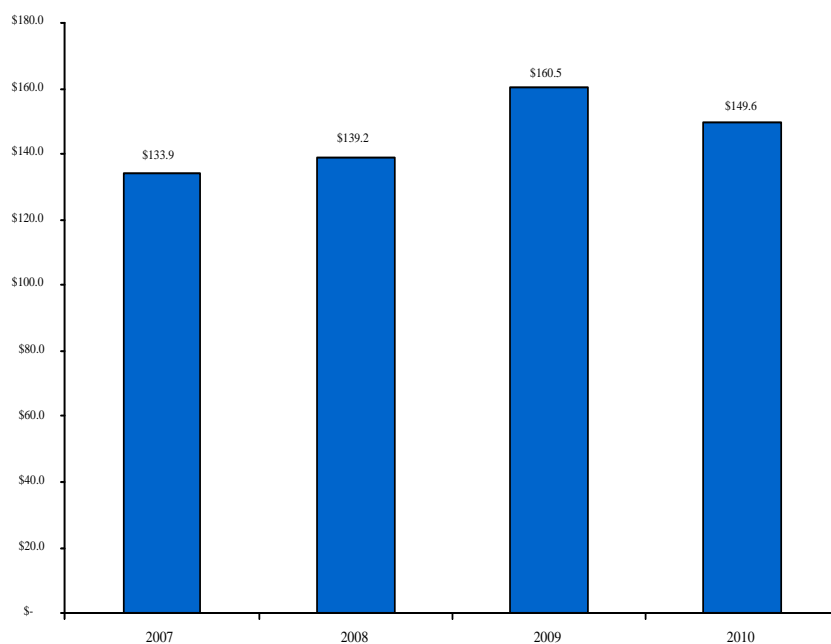
Expenses for Fiscal Year 2010 were less than revenues, in keeping with the University’s commitment to maintain a balanced operating budget and thereby protect its capacity to fulfill its teaching, research and service missions well into the future. The largest categories of expenditures were instruction and educational administration, research and patient care, as shown below.



Expenses for instruction and educational administration (which include faculty and faculty support, student services and school-based administration) grew at a 6.0 percent compound annual rate between 2007 and 2010. The annual growth in research and patient care expenses over the same period were 7.6 percent and 5.0 percent respectively.

With a steady increase in its revenues and careful management of its expenses, the University’s operating surplus remained stable and healthy over the period.

Change in Net Assets from Operating Activities 2007-10



Weathering the Economic Downturn

Like other colleges and universities, Columbia was affected by the country's recent financial crisis. It suffered less than some of its peers because it was less dependent on endowment income and because it had followed a more conservative investment strategy. Nonetheless, the decline in the value of its endowment and in receipts from fundraising had an impact on revenues and required the University to make significant adjustments in its budget. At the time, the ultimate effects and duration of the global financial crisis were not yet clear. Therefore, in the fall and winter of Fiscal Year 2009, the University adopted a multi-tiered approach to address the resulting financial uncertainties, employing decisive, short-term actions rather than trying to soften their impact by spreading the needed budgetary adjustments over a longer period of time.

Its first step was to begin to absorb projected losses in the endowment as early as the next fiscal year and to override the lag factor inherent in the University's spending formula. Beginning in Fiscal Year 2010, the University decreased endowment payouts by eight percent from 2009 levels, and by an additional five percent in Fiscal Year 2011. Coupled with a strong investment performance in Fiscal Year 2010, this approach brought endowment spending into line with historically acceptable levels in a relatively short period of time.

Although total University dependence on investment income is modest --13 percent of the University's operating budget at the time of the financial crisis -- Columbia's decentralized budget model (described in section 6 of this Periodic Report Review) meant that certain units

were more sensitive to the prescribed declines in endowment payout than others. In addition, vulnerabilities to effects in other areas, such as charitable giving, varied across the University. Each budget unit was required to submit a balanced budget, and while some areas increased enrollments modestly, many also undertook major efforts at cutting expenses. Administrative expenses were reduced significantly in the central administration as well as in administrative areas of many of the schools. Each school and the central administration established a hiring panel to ensure that only critical positions were filled, and administrative salaries were kept flat for Fiscal Year 2010. In an effort to preserve financial flexibility, only those capital projects that were substantially donor-funded, designed to address life-safety issues or could not be halted without significant economic cost were allowed to proceed.

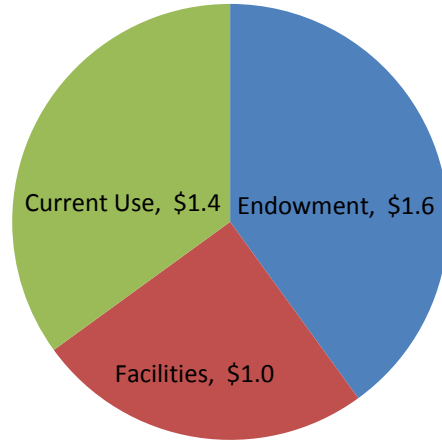
On the academic side, faculty hiring slowed. Some searches were deferred; others were allowed to continue but the date of arrival for the individual selected was postponed. Senior faculty did not receive raises in Fiscal Year 2010. Junior faculty in some schools, but not in all, received modest increases that year. Exempted from the general freeze were faculty who were promoted in rank or tenured, but their increases consisted of the increments normally awarded with promotion. Also exempted was financial aid which was allowed to increase since more students and their families were found to be in need.

In hindsight, and with the fortunate outcome of strong investment performance in Fiscal Year 2010, the steps taken in the early days of the crisis proved to be correct in proportion and nature to the challenges the University faced, allowing it to emerge as a stronger institution once the economy began to recover. This fiscal year the University was able to begin to ease off on the measures it had found necessary to take. However, it sees a continuing need to pursue a cautious financial strategy since the external economic environment remains uncertain and challenging.

The Columbia Campaign

In September 2006, the University launched a five-year fundraising campaign with a goal of raising \$4 billion by December 2011. At the time of its announcement, it was the largest ever undertaken by a university or college. The campaign focused on obtaining substantial additional resources to recruit faculty, enhance student financial aid, support new programming, contribute to realizing the University's international ambitions, and build new facilities and modernize existing ones. It sought to achieve these objectives by adding to the University's existing endowment, generating funds for current use and accumulating new resources for facilities expansion and renewal. The targets for each of these types of funding can be seen in the graph below.

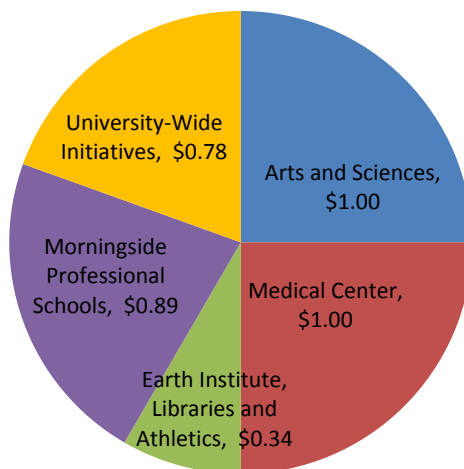
Columbia Campaign Targets for Types of Funding



(in billions)

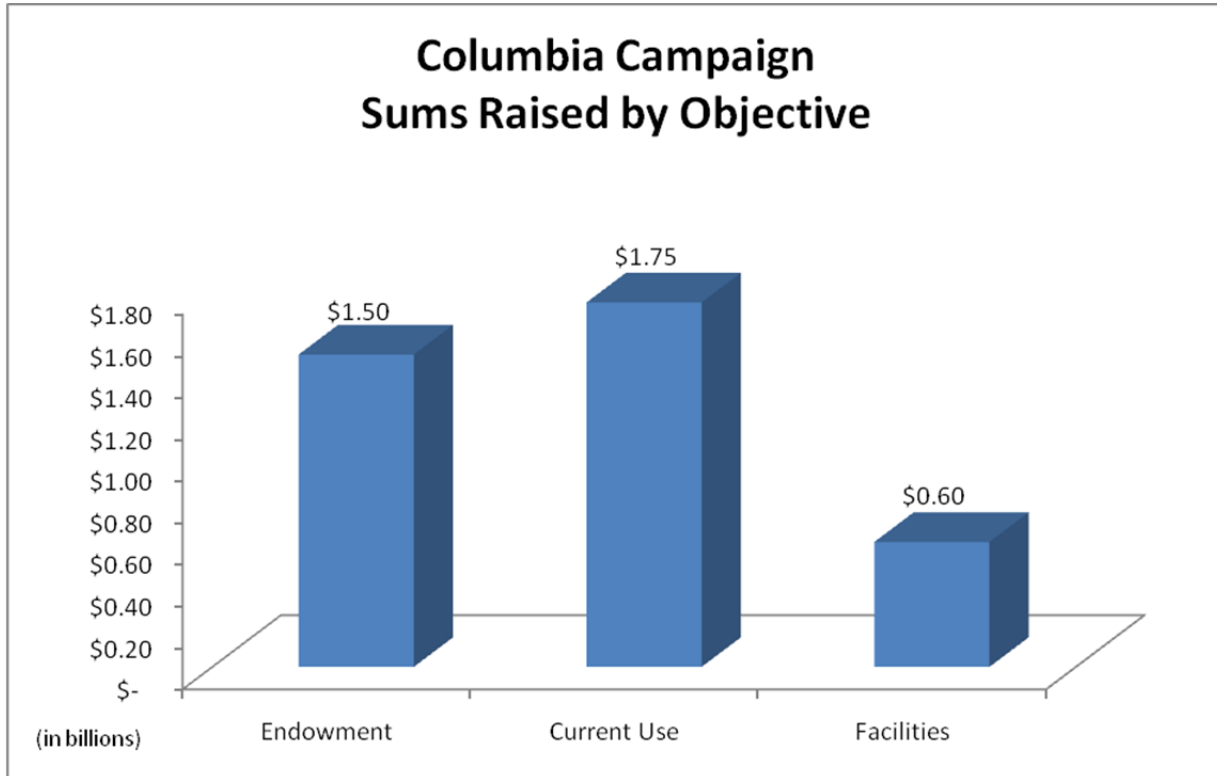
Each of the parts of the University was given its own separate goal as follows:

Columbia Campaign Goals for Parts of the University



(in billions)

In addition to these financial targets, the campaign sought to promote greater alumni giving so that after it ended, the University could count on a consistently greater annual stream of contributions to support its programs and priorities. By fall 2010, one year before it was scheduled to end, the University had almost achieved the campaign's original objectives. It had raised \$3.85 billion, divided as follows:



In addition, alumni engagement with the University had increased, aided by the expansion of the Columbia Alumni Association's global presence and the renovation of a new alumni center on the main campus on Morningside Heights.

These successes reflected the exceptional response from the alumni, Trustees and other donors to the University's appeals for support. Annual funds set new records, and the University received a number of multi-million dollar gifts. The Arts and Sciences, for example, has benefitted from a \$400 million pledge from alumnus John Kluge to support financial aid and from nearly \$50 million from Gerry Lenfest for the support of its teaching faculty. As described earlier in this Periodic Review Report, the Dawn M. Greene and the Jerome L. Greene Foundation has committed to giving \$250 million for a new research and teaching building that will serve as the intellectual home for Columbia's expanding initiative in mind, brain and behavior, while Henry Kravis has pledged \$100 million toward the construction of a new home for the Business School. As both of these facilities will be located in Manhattanville, the gifts

will also contribute to realizing the University's long-term goal of establishing a new campus in that section of Manhattan.

Taking advantage of the momentum achieved by the campaign, the Trustees, on the recommendation of President Bollinger, increased the campaign's goal to \$5 billion in December 2010, thereby once again making it the largest effort of its kind in higher education, and extended its duration for two additional years. Among the goals of the extension are to expand financial aid, especially for undergraduates, to endow new professorships, to add at least another \$300 million to the funds available to construct new facilities, to strengthen educational and research programming, to extend the University's global involvement, and more generally to provide further resources with which to enhance Columbia's academic standing.

Looking Ahead

While the overall financial outlook for Fiscal Years 2011 and 2012 is generally positive, the University must nonetheless operate in a challenging economic environment. The continuing weakness in the national economy could dampen giving and necessitate even further increases in its financial aid budget. Revenues from gross tuition from degree programs are not likely to grow significantly beyond the regular rate increases that occur every year, and those increases are likely to be curtailed by the desire to maintain a strong competitive position coupled with political pressures from Washington. Congress' attempts to reduce the nation's budget deficit could also result in a reduction in the availability of research funding. The University's American Recovery and Reinvestment Act funding will begin to decline in 2012; the last activities supported by these funds are expected to end in Fiscal Year 2015. The effects of the national health care legislation on faculty practice receipts over the next two years are not expected to be significant but also are not yet fully apparent. Like other universities, and the corporate world as well, the University must cope with exploding health care costs.

Columbia nonetheless is sanguine about its financial future. It not only weathered the country's financial crisis but emerged with a steady stream of operating surpluses. The operating budget is expected to remain stable and in balance on an ongoing basis. The University is continuing with a very successful capital campaign that not only has the prospect of exceeding its \$5 billion goal but will also lay the groundwork for increased giving in the future. The strong rebound of the University's investment portfolio in 2010, and expectations that 2011 results will at least equal 2010, will translate into increases for endowment payout in both Fiscal Year 2012 and Fiscal Year 2013 as the University returns to its regular endowment spending formula. Columbia, therefore, finds itself in the position to continue to make substantial investments in its academic future and to pursue not only the plans described in section 3 of this Periodic Review Report on major challenges and opportunities but others as they emerge.

Section 5: Assessment

Assessment

Assessment and strategic planning are an integral and ongoing part of University life. With 16 schools, 78 departments and well over two hundred interdisciplinary centers and institutes, the University covers a diverse range of disciplines and prepares students for widely differing careers. Planning and assessment in these circumstances necessarily take place on multiple levels and in different forms. Whatever their form, they share the common purpose of ensuring that the University steps back at periodic intervals from the day-to-day tasks involved in managing its operations to evaluate the quality of its programs and devise plans for its future.

Institutional Assessment

A substantial portion of institutional assessment at Columbia occurs at the school level due to the diversity of the University's programs and a decision-making and budgetary process that places major responsibility for programmatic and financial decisions in the hands of the faculty and deans. In some instances, assessment is done through a system of regular review of departments and programs. In others, it involves periodic exercises in strategic planning. At the University level, the budget process is used to review and modify the plans of the University as a whole as well as those of the individual schools. That process is described in the final section of this Periodic Review Report. In addition, the University undertakes specialized evaluations of its needs in specific areas, such as undergraduate education and science, as has been described in Section 3.

The ARC Review System

The Arts and Sciences is a large and organizationally complex Faculty consisting of five other Faculties, 29 departments of instruction, and many interdisciplinary educational and research programs. To coordinate the common affairs of its many parts, the Arts and Sciences employs a number of standing administrative and faculty committees. Faculty input is provided principally by the Policy and Planning Committee, an elected body that represents faculty interests in the decision-making process. The Executive Vice President also meets collectively with the department chairs on a regular basis for consultative purposes and is aided in formulating policy by an administrative staff which includes the Deans of the five Faculties, members of his immediate office, and other senior administrative leaders. This group consults regularly with the Policy and Planning Committee to address issues of common concern. Several other faculty mechanisms play an important role in the functioning of the Arts and Sciences. The Faculty Development Committee oversees the mentoring of junior faculty, makes recommendations on reappointment and promotion in nontenured ranks, and advises the Executive Vice President on promotions to tenured full professor. The Standing Committee on Language Lecturers oversees the mentoring of the language faculty and makes recommendations on reappointment and promotion in the language lecturer rank. The Arts and Sciences is now developing a new faculty committee to

review nominations to tenure before they are forwarded to the Provost for a final University-wide review.

While these committees all contribute to academic planning, the Arts and Sciences primarily relies upon a separate process devoted specifically to the evaluation of its constituent units, each of which is assessed at roughly seven to eight year intervals. The objectives of those reviews are to assess program quality, foster improvement and provide guidance to the units and the Executive Vice President both in making short-term operational decisions and in formulating long-term strategic plans. The process through which these goals are pursued provides a mechanism for reaching collective judgments on the existing strengths and weaknesses of the individual units and determining how they should respond to the challenges they face. In this manner the reviews contribute to the overall effort of the Arts and Sciences to plan for its future.

Primary responsibility for this system of review rests with the faculty and, in particular, the Academic Review Committee (ARC), a faculty body appointed by the Executive Vice President. Each review begins with the preparation of a self-study by the unit which assesses its current condition, defines its priorities for the next seven or eight years, and proposes the strategies it will employ to achieve them. Once the self-study is submitted, ARC creates a subcommittee to conduct an evaluation of the unit which is chaired by one of its own members and includes additional Columbia faculty. To assist each subcommittee, ARC brings in a separate external visiting team of at least two members.

Based on the self-study, the report of the visiting team, the results of the interviews it conducts and any other materials it collects, the subcommittee drafts a report for consideration by the full Academic Review Committee. After receiving the comments of the unit on the draft, the full committee modifies it in consultation with the subcommittee and submits a final version to the Executive Vice President. That report becomes the basis for discussions between the Executive Vice President and the unit about how it should modify its current operations and future plans.

These reviews have played a central role in academic decisions and planning in the Arts and Sciences. They have, among other results, prompted the Arts and Sciences to create new departments, institutes and centers and to expand, reorganize or contract some existing units. They have also led to shifts in the specialties covered within individual departments, the reorganization of academic support services and student services, and the articulation of priorities and strategies to enhance the quality and reputation of the units under review.

Until 2009, the School of International and Public Affairs (SIPA) was part of the Faculty of Arts and Sciences and subject to periodic evaluations through the ARC process. Once it became an independent professional Faculty in July 2009, separate from the Arts and Sciences, it adopted a system of assessment and planning modeled after the ARC reviews to evaluate its centers, programs and administrative units at periodic intervals and to prepare plans for their future. As with the ARC reviews, the goals of the SIPA system are to assess program quality, foster planning and improvement, and provide guidance for decisions by the units themselves and the School's leadership. The process involves the preparation of a self-study, a review by an external visiting team, a further assessment by the School's Faculty Development Committee and the preparation

of an implementation plan, developed by the program or unit and approved by the Dean. Thereafter, the program or unit submits a report every year on its progress towards implementing the goals it has identified for itself for review by the Faculty Development Committee and the Dean.

Columbia offers the Ph.D. in 62 different areas of specialization. These include 31 that are offered through departments or inter-departmental programs within the Arts and Sciences. The rest are organized by seven other schools. Regardless of discipline, all Ph.D. programs are offered through the Graduate School of Arts and Sciences, a Faculty within the Arts and Sciences, to which the University Trustees have assigned exclusive authority for conferring the Ph.D and the M.Phil. degrees. The Ph.D. programs within the Arts and Sciences are subject to periodic evaluation through the ARC process which includes the review of graduate education, and the doctoral programs in particular, as one of its focal points. For Ph.D. programs outside of the Arts and Sciences, the Dean and Executive Committee of the Graduate School have introduced an evaluation and planning process that emulates the system of ARC reviews. The Dean of the Graduate School uses the findings of the review to discuss the program's future with its faculty, the dean of the school within which it is offered and with members of the University's central administration.

Strategic Planning Systems

The other model schools follow to engage in institutional assessment consists of engaging the faculty and senior academic administrators in a periodic exercise in strategic planning. In some cases, the development of strategic plans is a regularly scheduled part of school life; in others, it occurs episodically when the faculty and dean conclude that there is a need to take stock of its existing conditions and plan for its future.

Even some units within the Arts and Sciences engage in periodic strategic planning to complement the evaluations conducted through the ARC review process. The Arts and Sciences itself is currently undergoing a strategic review. The Arts and Sciences has had a complicated and idiosyncratic history. It did not have a Vice President until 1982 and only became a Faculty in 1991. Its current organizational and administrative structures, introduced in 1982, have allowed the Arts and Sciences to function more effectively than in the earlier years, but they do not yet support the full integration of its constituent units, most of which predate its creation. To achieve that integration, to develop mechanisms to allocate its resources more effectively and to improve upon its planning processes, the Arts and Sciences began a review of its administration, operational systems and finances in 2010. Primary responsibility for the review has been vested in the Planning and Policy Committee which has been charged to work with the Executive Vice President, Deans and faculty to develop a strategic plan for the Arts and Sciences.

Similarly, the School of the Arts initiated a strategic planning process in 2008 to consider the future of its academic programs and facilities. That effort is still on-going. It seeks, among other goals, to adapt the School's existing educational programs at both the undergraduate and graduate levels to the changing practices, technology and marketplace of the world of art; to make

the School an important site for the production of new culture; to foster innovative collaborative work across the School's programs; to invest in global initiatives that provide more opportunities for cross-cultural exchanges; and to improve studio space, presentation venues and other facilities.

The professional schools on both the Morningside campus and at the Medical Center have adopted other types of mechanisms for engaging in strategic planning. The various means they employ are exemplified by the processes in the College of Dental Medicine, the Mailman School of Public Health, and the Fu Foundation School of Engineering and Applied Science.

The *College of Dental Medicine* engages in a continuous process of self-evaluation and long-term planning, using a system of standing committees of faculty and administrators to develop plans for its improvement and assist the Dean in implementing those plans. This process of self-examination and planning is now almost two decades old, and is overseen by the College's Committee on Institutional Outcomes which assesses its effectiveness, evaluates whether the College's plans are achieving their stated goals and initiates the next round of planning when it is necessary.

The College periodically evaluates each of the component parts of its programs. In addition, at roughly five-year intervals, it undertakes a comprehensive evaluation of its operations as a whole. The most recent review began in 2008 with the establishment of a strategic planning committee consisting of the School's governance committee and other members of its faculty and staff. The committee held a series of open meetings at which all members of the School were invited to critique the quality of its programming and make suggestions for their improvement. In addition, it obtained evaluations of the School by distinguished dental educators, scientists and clinicians from other universities. With that information in hand, it prepared a strategic plan that was shared with the College community, modified to incorporate the suggestions received, and is now being implemented. Its recommendations included a substantial reconfiguration of the dental medicine curriculum, now largely complete, and a significant expansion of the School's international programming in the areas of education and patient care. The prior review took place in 2003-04 and resulted in an administrative reorganization of the College, a significant expansion in its research programs and a realignment of its curriculum.

Strategic planning began in the *Mailman School of Public Health* in 2005 under the former dean as a financial planning process and was expanded by the current dean, Linda Fried, in 2008 to be a comprehensive assessment of the School's activities. It continues up to the writing of this Report as the School translates the broad objectives defined in earlier phases of the process into plans for achieving more specific goals.

The process has engaged all segments of the School community in redefining its goals and future plans. It began when Dean Fried, even before her formal appointment, asked each of the School's departments and major centers to prepare a self-study. Following her official arrival, the Dean began monthly meetings with the School's faculty to define collectively the vision and agenda that would guide the planning process. She then appointed a steering committee of senior faculty and deans to guide the School's efforts at creating a strategic planning document. To

support its work, the School hired an external consultant, held faculty focus groups, conducted assessments of the environment within which the School functions, formed working groups to investigate in depth specific topics affecting its future and reached out to the faculty, staff and students for their input on the key issues facing the School.

Based on the the information collected in this manner, Dean Fried, with support from the steering committee, developed a plan whose highlights she presented to the School community at public meetings in early 2009. The full report, *Aspirations: Leadership for the Critical Public Health Challenge of Our Time*, was published in the fall of that year and is available on-line at www.myvirtualpaper.com/doc/Mailman-School-of-Public-Health/aspirations/2009102101/. Since its publication, the School has focused on prioritizing among the different initiatives it includes. It has, for example, led to the establishment of a task force to promote interdisciplinary initiatives at the School. The plan also called for a reformulation of the School's educational curriculum. In February 2010, the Dean presented to the School an overview of the goals of the curriculum review and initiated a discussion with the faculty on the best means of realizing them.

Historically, evaluation and strategic planning within the ***Fu Foundation School of Engineering and Applied Science*** (SEAS) largely occurred within its nine departments, with oversight, advice and approval from the Dean and his staff. Following the appointment of Feniosky Pena-Mora as the School's new dean in 2009, a more integrated process of review and planning has emerged. Even before Dean Pena-Mora arrived, the School's Board of Visitors created a strategic planning report entitled *A 2020 Vision for SEAS* that outlined a set of planning principles for the School as a whole, provided an external assessment of its quality and opportunities, and served as a mechanism for engaging alumni and other external constituencies. Shortly after his appointment, Dean Pena-Mora asked all of the departments to develop plans for their individual development. Once these plans were completed, the Dean established a task force in 2010 to bring the departmental plans together with the *2020 Vision* document to create a single, comprehensive planning document for the School as a whole. With input from both the internal SEAS community and external stakeholders, the task force prepared a draft plan that was circulated widely for comment and served as the focus for a faculty retreat earlier this year. A further draft will be completed by the end of the academic year and a final plan issued in the fall.

The School's strategic plan will define its priorities for the next five years, lay out a series the key initiatives it will undertake, identify the resources those initiatives will require and specify the metrics the School will use to determine their effectiveness. Once completed, the plan will also become the guiding document for how decisions will be made on the allocation of the School's resources and where it should make strategic investments for its future.

The University's central leadership has complemented the institutional assessment and planning initiatives of the schools with focused efforts at review and policy formulation on issues that cross school lines. The best examples of these *ad hoc* efforts are the work of the Task Force on Undergraduate Education and the science planning discussed in Section 3 of this Periodic Review Report on major challenges and current opportunities. In addition, Claude Steele, who became the Provost of the University in September 2009, has developed mechanisms for a more

regular evaluation of the University's needs and the development of plans for strengthening its educational programming and research.

This spring Provost Steele announced the appointment of a faculty advisory committee (PFAC) to provide faculty input into the intellectual, physical and financial planning undertaken by his office. Its membership is broadly representative of the University's various schools to ensure that the complexities of Columbia's organizational and financial structures are taken into account in the advisory function. While still a fairly new endeavor, PFAC has already taken on the question of how to monitor and adjust the allocation model for the institution's common cost formulas which determine how central administrative costs are distributed among the schools. It is expected that over time PFAC will become a primary locus for involving faculty in ongoing planning and administrative decision-making.

Learning Outcomes Assessment

Learning outcomes assessment is also managed at Columbia through a combination of initiatives by the programs, schools and center. The system the University has adopted is based upon several guiding principles.

First and foremost, its goals are to create mechanisms that enhance the quality of the education the University offers and to ensure that its students are acquiring the knowledge and skills they need both to pursue successful careers after completing their studies and, more generally, to be educated, contributing members of society. Columbia is too complex and its educational programming too diverse to achieve those objectives through a single, standardized University-wide approach to learning outcomes assessment. The University has, therefore, decentralized the primary responsibility for the creation and implementation of learning outcomes plans to the schools and, most importantly, to the faculty of the individual programs who have designed and staff them.

While the forms that learning assessment take appropriately vary from one program to another, every educational program is expected have in place a formal learning outcomes plan that specifies how it measures its educational effectiveness in the context of its field and how it uses the results to improve the quality of the education it offers. Moreover, while the programs themselves have the primary responsibility for evaluating their educational effectiveness, the task of learning assessment is too important to be left to them to manage entirely on their own. Therefore, the schools and the Office of the Provost supervise and support their efforts to foster a culture of assessment at the University, to ensure that their learning outcomes plans provide meaningful evaluations of their educational effectiveness, to share best practices across programs and to further the academic goals of the schools and the University as a whole.

As described in the introduction to this Report, the University offers education in 109 undergraduate programs, 216 leading to a Master's or first professional degree, and 110 at the level of the doctorate. Each of these programs is required to have a written outcomes assessment plan that has been adopted by its faculty and approved by the dean or executive vice president of the

Faculty within which it is offered. Ten schools have some or all of their programs accredited by disciplinary societies. A list of those schools and their accrediting agencies may be found in Appendix 2. The accrediting associations have established distinctive learning outcomes requirements for the programs in their fields. In those cases, the University accepts the outcomes plans the schools have adopted in response to their disciplinary accrediting requirements as meeting its own expectations with respect to learning outcomes assessment. Altogether, 18 programs have plans that are governed by the rules of their accrediting societies.

For the remaining programs, the Office of the Provost developed a standard format for the creation of a learning outcomes plan that consists of four parts. The program first defines the educational mission of the academic program. Then it states the specific learning goals the program has set for its students and specifies how the achievement of each of the student learning goals is measured. Finally, it describes the mechanisms by which the faculty review the assessment results and use that information to improve the quality of the program. The instructions the Office of the Provost provided to the programs for the creation of their plans are included as Appendix 20. Appendix 21 includes nine samples of the plans themselves. To demonstrate the diversity and richness of the approaches the University uses to evaluate student learning, these include plans for programs at the Bachelors, Master's and doctoral levels offered by its schools and departments, including some that follow the requirements of accrediting societies as well as those that use the standard template developed by the Office of the Provost.

The University supplements the program-centered plans with school-based efforts to collect and use information about learning outcomes. These consist mainly of indirect measures of student learning. Two examples are inter-institutional surveys of students and placement information on graduates.

Some schools participate in surveys about student experiences with their programs, alone or in conjunction with their peers at other universities. The most systematic of these efforts occur at the undergraduate level. Columbia belongs to an organization consisting of a group of highly selective private colleges and universities that includes all of its peers. The organization has conducted a series of surveys, some of them for several decades, that yield longitudinal data on the experiences of students and their perceptions of their undergraduate education. The surveys cover the full span of the students' undergraduate life from when they are incoming first-years to after they have graduated. They also include a survey of the students' parents.

These surveys mark the students' progress through their time at Columbia, ask for their evaluation of the education they received as well as of their life at the University, provide information on what they believe they have learned here and track their post-graduate careers. Together they provide a rich data set on student learning as well as evidence of levels of satisfaction with their experience at Columbia. The survey of graduates is particularly valuable in assessing student learning, as it asks for a retrospective assessment of their educational experience at several different intervals of time after they leave the University, and helps to measure the long-term contribution of their undergraduate education to their intellectual development, professional careers and involvement in civic life.

Most schools now systematically collect additional information on the further education and employment of their graduates. They use this information to help to identify whether the educational training their programs provide is giving their students the necessary grounding, knowledge and skills to succeed in their fields. The survey of graduates mentioned above provides one example of those efforts. The University's Office of Alumni and Development supplements the schools' data collection by surveying graduates throughout the University about their professional and educational plans immediately after they receive their diplomas and staying in touch with them about their subsequent careers. This information is shared with the deans as well as being used for internal Alumni Office purposes, thereby providing the schools with yet another source of data that helps them determine how the education they provide has helped to shape the careers and lives of their students.

Each school has developed its own structure for supporting and supervising the efforts of its programs to evaluate their educational effectiveness and the learning of their students. These vary among the schools, depending on their size, the breadth of their educational programs, their internal organizational structures and cultures, and, where relevant, their disciplinary accrediting requirements. Regardless of the system they use, each involves faculty in overseeing the assessment efforts of its programs, and each has assigned administrative responsibility for learning assessment to a senior member of the staff of the dean or academic executive vice president.

As the chief academic officer of the University, the Provost has the overall responsibility for learning outcomes assessment at Columbia. He has appointed a University Advisory Committee for Student Learning Outcomes Assessment to help define the policies governing learning outcomes at the University and to make recommendations on how those policies should be implemented. The committee consists of six senior faculty, appointed to three-year staggered terms. It is chaired by the Associate Provost for Planning and Institutional Research to whom the Provost has assigned the task of overall management of the University's system of learning outcomes assessment and who is supported by a new Assessment Coordinator. The Advisory Committee meets at least twice a term to critique the practices of the programs and schools; to look outside the University for ideas for enhancing learning assessment either in the practices of other institutions or the academic literature on the subject; and to offer advice on how to educate the faculty about the value of different methods of learning assessment and, more generally, on how to improve the quality of the University's efforts to measure the success of students in achieving the learning goals their programs have set for them.

The Associate Provost also works with a working group consisting of the schools' outcomes officers to coordinate the assessment efforts of the schools and programs. The Associate Provost or Assessment Coordinator meet with its members individually and collectively to discuss the practical issues involved in developing, implementing, documenting and monitoring the assessment practices of the programs and schools.

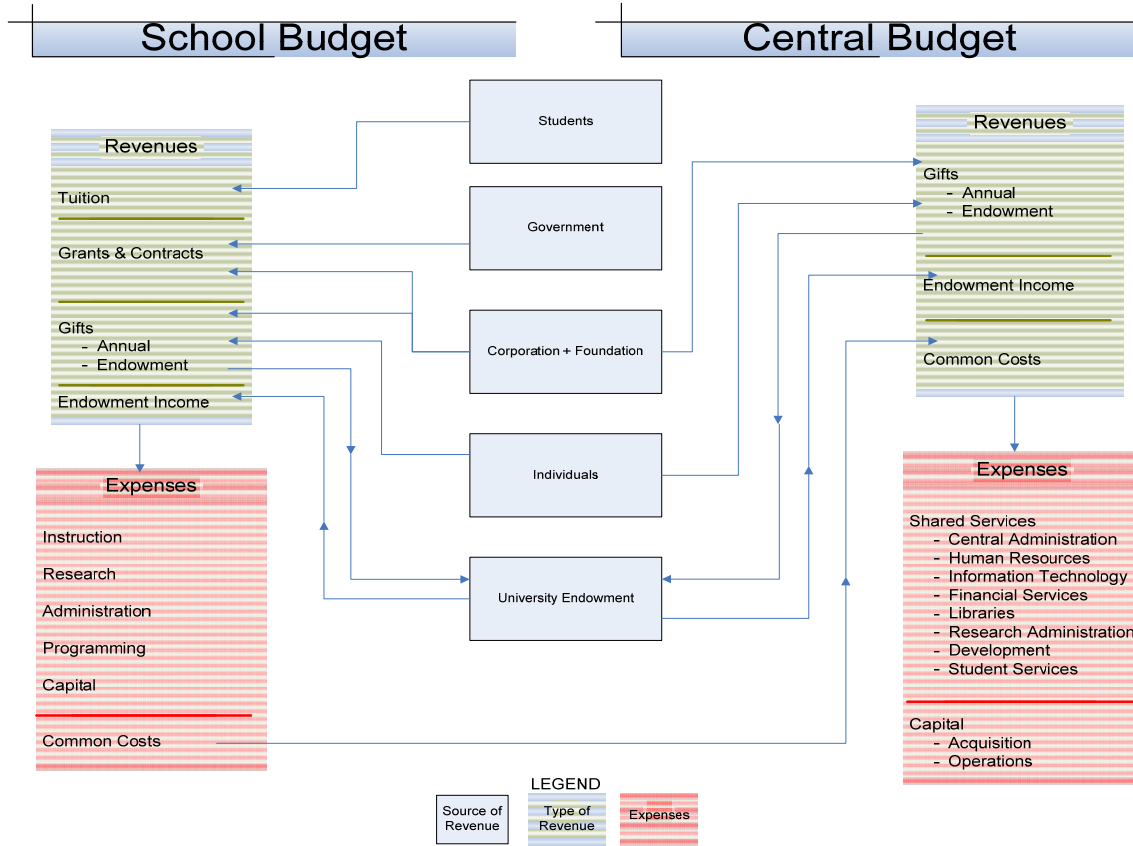
Section 6: Linking Institutional Planning and Budgeting Processes

The outcomes of the institutional assessment and planning described in the previous section of the Periodic Review Report require the University to make financial as well as academic decisions. Those decisions are implemented through a budgetary system designed to ensure that Columbia's financial resources are allocated in a manner that supports its institutional aspirations and goals. Columbia has a distributed financial structure that places substantial budgetary responsibility in the hands of the schools while ensuring central oversight and direction. The University both manages and capitalizes on the resulting complexity through the integration of a set of planning and budgeting processes that take place at all levels of the institution.

While all schools support the broader teaching, research and service missions of the University, they differ in the degree to which one or more are emphasized within their individual missions. Similarly, planning and resource allocation processes vary by school, with the University's decentralized financial model supporting these differences.

The current decentralized, yet integrated, financial structure was put in place in fiscal year 1995 following a number of years in which the University struggled financially, and the schools and administrative units experienced persistent deficits. As shown in the chart below, all revenues generated by the schools remain with them, and the schools are responsible for all expenses associated with their internal operations. Each also transfers to the central administration an amount that reflects its share of the common costs associated with central institutional functions.

Revenue and Expense Flows



These arrangements provide the schools with incentives to be both entrepreneurial and fiscally disciplined. They encourage the schools to generate new revenues and control expenditures and give them the means to redirect their financial resources as their academic priorities and needs change. They make the schools accountable for maintaining balanced budgets and enable the center to monitor their financial activities. Finally, they provide the center with resources to invest selectively to further University-wide objectives, to meet needs that the schools cannot handle on their own and to ensure that the University's overall institutional goals are supported.

The current budgeting system has had a number of positive outcomes. Faculty and staff have become more fiscally aware, and units now budget in a more purposeful, yet conservative manner. Reserves and contingency funds have been created to buffer against near-term financial shifts and to enable speedy responses to unforeseen needs that might arise during the fiscal year. Some units have worked to diversify their revenue streams, and all units are much better positioned to respond to sudden economic shifts, such as occurred in 2008. Lastly, the change in financial structure has promoted a culture where information is routinely generated at all levels of the University, from the unit level to the central administrative leadership to the Board of Trustees, in support of monitoring, trend analysis and decision-making. This enables senior

leadership to maintain oversight and control and to ensure that the efforts of the schools support and advance the University's overall institutional mission.

The Provost oversees the academic programs of the University while the Senior Executive Vice President manages its administrative and student services. Both, therefore, play a central role in the University's budget system. The Executive Vice President for Finance, who reports to the Senior Executive Vice President, serves as the chief financial officer of the University, while the Vice President for Budget and Financial Planning, who reports jointly to the Provost and the Executive Vice President for Finance, directs the actual preparation of the University's operating and capital budgets. These central officers are aided in managing the University's budget by several consultative and decision-making bodies, including the Business Issues Group (BISS) which provides central oversight of the budget. The role of these committees will be described after providing an overview of how the University's operating and capital budgets work.

Common Budgeting System

Operating Budget

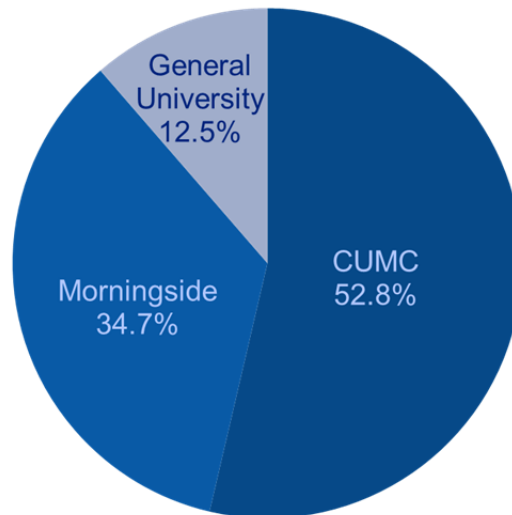
The operating budget is constructed using a method that employs detailed budgeting of all accounts within a common University-wide framework, with standard reporting formats reconciled to the audited financial statements. It is a bottom-up process in which a detailed "all funds" budget is prepared by each academic and administrative unit. Revenues and expenses associated with unrestricted and restricted funds are budgeted in detail, including gifts, endowments, and government grants and contracts.

The budget is built on a web-based system, which allows for efficient input and reporting capabilities and for real-time updating, monitoring and analysis at multiple levels from the individual departments to the University's Office of Management and Budget. Schools create their budgets within the same chart of accounts used to record actual revenue and expense activity, utilizing a standard format that is related explicitly to the presentation of University financial information in its audited financial statements. (See the table on the following page for a summary of the Fiscal Year 2010 Consolidated Operating Budget [COB].) Once approved, their budgets are loaded into the accounting system to facilitate the creation of standard monthly reports that permit estimate-to-actual tracking to occur throughout the year and at any level of aggregation. Each unit updates its estimates of revenues and expenses three times a year, at the end of each of the first three quarters. This supports the production of meaningful interim financial information for the University's leadership.

Total University	2,010
Consolidated Operating Budget	Actual
(In \$000s)	
I. Direct Revenues and Support	
A. Tuition and fees	
1. Tuition and fees	926,636
2. Less financial aid grants	(260,457)
Net Tuition & Fees	666,179
B. Government grants and contracts	
1. Direct	617,990
2. Indirect	182,394
C. Private gifts, grants, and contracts	
1. Gifts	154,602
2. Private grants and contracts	
a. Direct	151,791
b. Indirect	15,504
D. Other educational and research activities	
1. Patent and license	77,991
2. Other	96,749
E. Patient Care	
1. Faculty Practice	497,588
2. Hospital Affiliations	256,040
3. MSA	18,941
4. Other	<u>12,936</u>
Subtotal Patient Care	785,506
F. Investment income and gains utilized	389,441
G. Sales and services of auxiliary enterprises	107,902
H. State aid and I. Other sources	<u>11,481</u>
<i>Total Direct Revenues & Support</i>	3,257,529
II. Indirect Sources	<u>0</u>
GRAND TOTAL SOURCES	<u>3,257,529</u>
III. Direct Expenses	
A. Instruction, research, and educational administration	
1. Instruction and Educational Administration	
a. Instruction and faculty support	539,096
b. Student services	59,614
c. External affairs and fundraising	44,891
d. Non-tuition financial aid expense	78,559
e. General and financial administration	116,789
f. Information technology	22,061
g. Other - Instruction-related	<u>312,521</u>
Subtotal III.A.1	1,173,532
2. Research	480,016
B. Patient Care	
1. Faculty Practice	407,776
2. Hospital Affiliations	264,521
3. MSA	14,939
4. Other	<u>11,492</u>
Subtotal Patient Care	698,728
C. Library	60,179
D. Operation and maintenance of plant	162,134
E. Institutional Support	203,552
F. Auxiliary enterprises	53,514
G. Debt Service	162,656
H. Major Equipment	34,749
I. Other	<u>41,248</u>
<i>Total Direct Expenses</i>	3,070,309
IV. Indirect Uses	<u>0</u>
GRAND TOTAL USES	<u>3,070,309</u>
Change in current funds from operating activities	<u>187,220</u>
V. Transfers FROM(TO) non-operating funds	
A. Capital Projects	(133,898)
B. Endowment	16,674
C. Student Loan and Agency funds	(1,677)
D. Non-Operating & Prior Year Adjustments	<u>38,791</u>
<i>Total transfers from/(to) non-operating funds</i>	(80,110)
Net change in current fund balance	<u>107,110</u>
VI. Current Fund Balance	
A. Beginning balance	808,637
B. Ending balance	915,747

Financial information is organized around three sectors – the Morningside Campus, the Columbia University Medical Center (CUMC) and the General University. (The graph below shows the distribution of direct revenues across the three sectors.) The two academic sectors (Morningside and CUMC) collect 100% of the University’s tuition revenue as well as all gift and endowment income and all grant and contract revenues generated by their respective schools, departments and Faculties. Expense budgets for the academic sectors include faculty salaries, financial aid, and the administrative support services associated with the schools and departments, as well as the common cost, or overhead, contributions to the General University budget. The General University sector includes expenses associated with central administrative support functions, along with general costs such as insurance and utilities, auxiliary enterprises (undergraduate housing, dining and health services), and faculty and graduate student housing. It derives its income chiefly from the common cost assessments on the schools but also from endowments designated by their donors for purposes supported by the central budget.

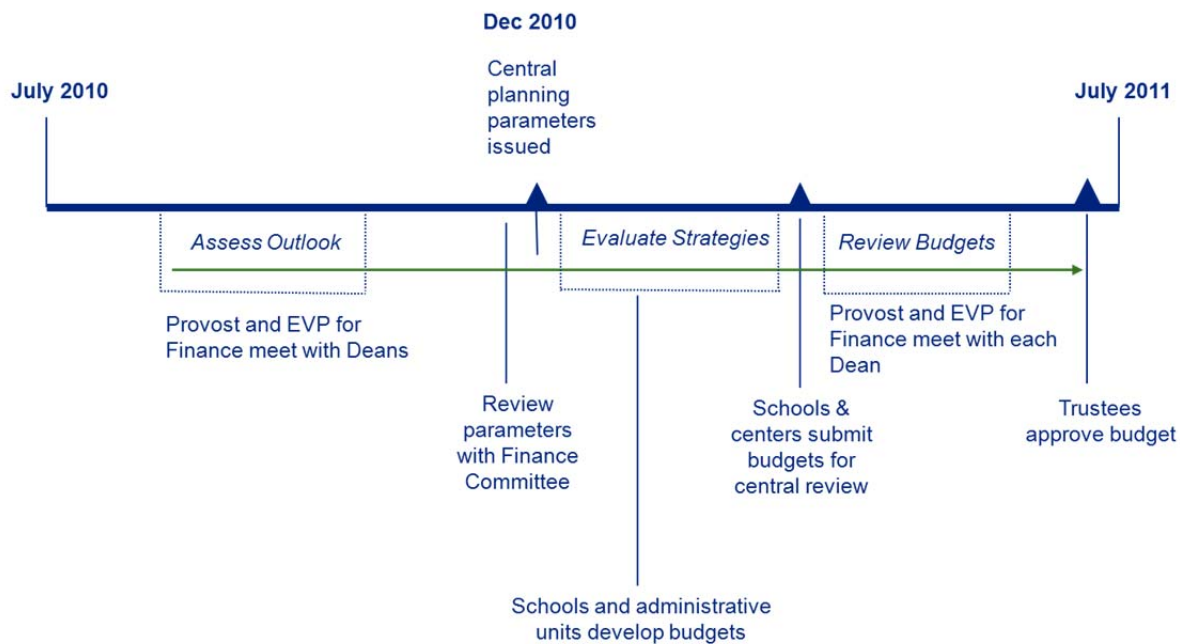
Distribution of Direct Revenues Fiscal Year 2010



The annual budgeting process begins in late summer when the Office of Management and Budget assesses the general economic health of the University and its external environment. Early in the fall, the Provost and Executive Vice President for Finance convene meetings with individual deans to discuss the status of their schools, and conversations are held with central administrative and student services leaders to discuss potential new needs looming on the horizon. Using information garnered from these activities, the Executive Vice President for Finance and the Office of Management and Budget prepare analyses of alternative scenarios for increasing the common costs which are then discussed with the Council of Deans. Following those conversations, the Executive Vice President for Finance reviews the proposed central planning parameters with the Finance Committee of the University’s Board of Trustees.

In December, the approved central planning parameters are distributed to the academic and administrative units which are required to submit preliminary budgets by the end of March. These are reviewed by the Office of Management and Budget, and the Provost conducts budget hearings with the individual deans. Following these hearings, the individual school budgets are consolidated into the two academic sector budgets of the University and these, together with the roll-up of the General University sector, are assembled into the Consolidated Operating Budget (COB) which is presented to the University Trustees' Finance Committee and through it to the full Board of Trustees of the University for approval at the June meeting.

Annual Budget Planning Timeframe



One of the key features of the budgeting system is the use of a common set of planning parameters, centrally defined factors the schools need in order to construct their budgets. The central planning parameters are set at the end of the fall semester by the Business Issues Group (BISS) in consultation with the Council of Deans. The parameters include guidelines on:

- endowment payout (subject to approval by the Trustees);
- common cost charges;
- fringe benefits rates;
- administrative salary increases;

- operating contributions to the housing expansion plan (based on utilization);
- indirect cost rate negotiated with the federal government;
- contributions to the Academic Quality Fund (a fund used by the Provost to support new academic initiatives with one-time infusions of funding) ;
- internal interest rates and borrowing assumptions; and
- contributions to the site acquisition fund.

Using these parameters, the schools create their annual budgets which they submit with an accompanying narrative that highlights the strategic and operating considerations that shaped their budget decisions, discusses how the schools are responding to broader economic trends, and identifies how they are directing resources to meet their highest needs. The narrative also identifies potential vulnerabilities and describes contingency plans to achieve a balanced budget should any of those vulnerabilities materialize. Among the other topics the narratives address are:

- applicant pools and enrollment demand, tuition rate assumptions and comparative tuition positioning with respect to peers, and financial aid needs;
- recent trends and the outlook for annual and other giving;
- the state of the external environment for research funding;
- competitive factors and curricular changes influencing proposed instructional salaries and faculty size; and
- administrative staffing and any proposed areas of growth and/or consolidation.

In addition to the qualitative narrative, schools are also asked to provide a statistical appendix that supports their budget submissions and enables more detailed review by senior leadership. The statistical appendix includes information on the following:

- full-time equivalent student enrollments and financial aid by degree program;
- total pledges, gift cash receipts, and annual giving;
- the number of budgeted tenure and tenure-eligible faculty, the salary budget for them, and the expected rate of salary increase;

- the number of non-tenure eligible faculty across all categories, including continuing faculty as well as visitors and adjuncts, with accompanying salary data; and
- changes to administrative staffing.

The budget narrative and accompanying statistical appendix provide a basis for the annual review by senior leadership and serve as a focus of conversations during the spring semester budget hearings held with each dean.

Capital Budget

The University has in place a comprehensive capital budgeting process that ensures that the capital needs of the institution are addressed in a timely and financially responsible manner. The level of review it involves varies as a function of the cost of the project and the sources of funding. The preparation of the capital budget is handled in the following manner:

- Schools initiate planning for capital projects and work with Columbia University Facilities to develop project documents that include information about the purpose and scope of the project, estimated costs and funding sources.
- All project documents are then reviewed by the Office of Management and Budget to confirm the availability of the necessary funding.
- Projects costing \$500,000 or more and those that require the utilization of University-issued debt are submitted for approval by the Capital Budget Issues Group (Capital-BISS).
- Following approval by Capital-BISS, projects costing \$2 million or more and those utilizing University-issued debt with a total cost of \$1 million or more are forwarded to the Physical Assets Committee of the Board of Trustees for review and approval.

Budget-Related Planning Structures

The previous section of this self-study outlined a number of school-specific and institutional-level planning and assessment activities that shape the academic agenda and guide resource allocation decisions. There are a number of advisory and decision-making bodies at all levels of the institution that help to integrate the resulting plans into the University's ongoing budget structure. The most important of these are the following:

- The *Budget Issues Group* (BISS) is chaired by the Provost and includes the Senior Executive Vice President, the Executive Vice President for Finance, the Vice President for Budget and Financial Planning, and the Vice Provost who supports the Provost on financial matters. It meets every other week throughout the year to

develop policies and procedures for allocating resources and managing them in support of institutional priorities.

- The *Capital Budget Issues Group* (Capital-BISS) is chaired by the Provost, and includes the Senior Executive Vice President, the Executive Vice President for Finance, the Vice President for Budget and Financial Planning, the Executive Vice President for Columbia University Facilities, and the University Treasurer. Capital-BISS reviews all capital projects costing \$500,000 or more as well as those costing less than \$500,000 that require some level of central University support.
- The *Provost's Faculty Advisory Committee* (PFAC) was established in spring 2011 to provide advice on the intellectual, physical and financial plans that fall within the purview of the Office of the Provost. It has twelve faculty who are chosen from across the University and serve staggered, three-year, non-renewable terms.
- The *Council of Deans* is comprised of the deans of the sixteen schools, with the Provosts of Barnard College and Teachers College, the Vice President for Information Services and University Librarian, and the Director of the Lamont-Doherty Earth Observatory attending in an *ex officio* capacity. In addition to serving as a forum for discussing academic policies and issues, the Council plays an important role at key points in the development of the University's budget, as described earlier in this section of the University's Periodic Review Report.
- The *University Senate*, a University-wide body consisting of faculty, students and other members of the University community, considers matters that are of University-wide concern, affect more than one school, or pertain to affiliation agreements with other institutions. Within its areas of jurisdiction, resolutions passed by the Senate are final unless they require Trustee concurrence. Two committees of the Senate are of particular importance in the budget-planning process. The Budget Review Committee reviews the annual budget after its adoption by the Trustees to ensure its general conformity with the short- and long-range priorities of the University, while the Campus Planning and Physical Development Committee performs a similar function with respect to the implementation of plans and projects affecting the University's physical development.
- The *Undergraduate Term Bill Committee* is chaired by the Provost and meets from late fall through the winter to formulate the recommendation to the University's Trustees on the coming year's undergraduate term bill. Members include the deans of the three undergraduate schools and the heads of all of the units that receive support through charges on the term bill, including information technology, athletics, housing, dining, health services and student programming.

- The *Finance Committee of the Board of Trustees* reviews the proposed annual operating and capital budgets and recommends to the full Board whether they should be approved, reviews the planning assumptions behind the budgets as they are developed, and monitors actual expenditures over the course of the year. In cooperation with the Trustees' Committee on Physical Assets, it also reviews and approves the University's capital plans and authorizes the purchase, leasing and sale of real property.

In addition to the standing committee structures described above, the Provost routinely convenes special working groups and task forces to address particular academic and/or administrative priorities or challenges. Each of these special committees produces reports and recommendations with significant implications for the direction of particular academic and financial functions at the University. Recent examples of these *ad hoc* committees include the Task Force on Undergraduate Education and the Science Planning and Review Committee described in Section 3 of this Periodic Review Report on major challenges and current opportunities. Another example was the Task Force on Fringe Benefits Programs which the Provost, in consultation with the Senior Executive Vice President and the Executive Vice President for Health and Biomedical Sciences, established in fall 2010 to provide advice on how the University's fringe benefits programs can be structured to continue to provide high-quality benefits on a fiscally sound basis. As an outgrowth of the work of the Task Force, the University will establish a standing committee to advise Columbia University Human Resources, the Provost and the Senior Executive Vice President on the structure and funding of the University's fringe benefits programs.