FACULTY OF ARTS AND SCIENCES

Dean's Annual Report

May 2008

HARVARD UNIVERSITY

Contents

HARVARD UNIVERSITY
Faculty of Arts and Sciences

Office of the Dean

University Hall
Cambridge, Massachusetts 02138

May 2008

Dear Colleagues and Friends,

It is my pleasure and privilege to write to you, as deans of the Faculty of Arts and Sciences have done annually since the FAS was formed in 1890. You have in front of you the Dean's Annual Report that documents the activities of the FAS from September 2006 through February 2008. This report departs from the tradition of past Dean's Letters in that it is primarily retrospective. Along with the two Letters last year from the late Dean Jeremy R. Knowles, Amory Houghton Professor of Chemistry and Biochemistry and Harvard University Distinguished Service Professor, which focused on FAS finances and faculty growth and renewal, this report completes the official record of what the FAS accomplished during that time period.

This Annual Report also marks the start of a new tradition, one that is meant to match the natural rhythm of our organization. Each spring I will publish a retrospective annual report summarizing the accomplishments of the previous academic year and closing the books on the previous fiscal year. Then, each fall I will issue a prospective letter that will describe the priorities for the current academic year.

As my staff and I assembled the report this year, it became abundantly clear that a number of individuals deserve special recognition for their leadership and for the large and positive changes they accomplished. Many of the achievements began with President Lawrence Summers, Charles W. Eliot University Professor, or with Dean William C. Kirby, Edith and Benjamin Geisinger Professor of History and Harvard University Distinguished Service Professor, both of whom deserve our congratulations. We also wish to thank President Derek Bok, 300th Anniversary University Research Professor, and Dean Knowles, who returned and ably led the institution in a transitional year. Our recent loss of Dean Knowles is acute, with fresh memories of his presence last year.

Deans Benedict Gross, George Vasmer Leverett Professor of Mathematics, and David Pilbeam, Henry Ford II Professor of Human Evolution, have been active, engaged, and imaginative stewards of the College—as were Deans Peter Ellison, John Cowles Professor of Anthropology, and Theda Skocpol, Victor S. Thomas Professor of Government and Sociology, of the Graduate School. Dean David Cutler, Otto Eckstein Professor of Applied Economics, has admirably led the Social Sciences as its first Divisional Dean, as did Dean Maria Tatar, John L. Loeb Professor of Germanic Languages and Literatures, for the Arts and Humanities division. Chair of the Life Sciences Council Douglas Melton, Thomas Dudley Cabot Professor of the Natural Sciences, steered the Life Sciences Council with

energy and innovation. Finally, Venkatesh Narayanamurti, John A. and Elizabeth S. Armstrong Professor of Engineering and Applied Sciences and Professor of Physics, deserves our sincere thanks for ushering into existence the School of Engineering and Applied Sciences, Harvard's first new School in over 70 years. After 10 years as Dean, first of the Division and now the School of Engineering and Applied Sciences, Dean Narayanamurti will step down from this position in September 2008 to devote more time to teaching.

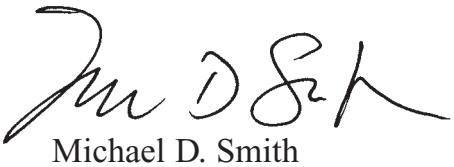
I look forward to serving you and President Drew Gilpin Faust in all of our common pursuits. I am honored to be joined by Professor Evelynn Hammonds, Barbara Gutmann Rosenkrantz Professor of the History of Science and Professor of African and African American Studies, who will be the Dean of Harvard College, and Dean Allan Brandt, Amalie Moses Kass Professor of the History of Medicine and Professor of the History of Science, who is now Dean of the Graduate School of Arts and Sciences. Dean Jeremy Bloxham, Mallinckrodt Professor of Geophysics and Professor of Computational Science, and Dean Diana Sorensen, James F. Rothenberg Professor of Romance Languages and Literatures and Professor of Comparative Literature, will persist in their excellent efforts as Divisional Deans for the Sciences and Arts and Humanities, respectively. I am also pleased that Stephen Kosslyn, John Lindsley Professor of Psychology, will join us as Divisional Dean for the Social Sciences.

In the end, we—the faculty—are assisted by an administrative staff of great talent and experience, joined by extraordinary students with whom we engage in scholarship and learning, and supported by loyal alumni and friends who cheer and advise us along the way.

Let me thank you for your many expressions of support and good wishes as I have taken up the deanship. The tasks before us are complex and compelling, firmly grounded by our fundamental commitments to the discovery and dissemination of knowledge. As this report reflects, the past 18 months have set a strong foundation for our future.

I look forward to the work that we'll do together.

Sincerely yours,



Michael D. Smith

Dean of the Faculty of Arts and Sciences
Gordon McKay Professor of Computer Science and Electrical Engineering

Executive Summary

The period from September 2006 through February 2008 saw important developments in many areas of FAS, but none more than in the undergraduate program of Harvard College. The most visible of the curricular developments was the adoption of the General Education program last year; the program will serve our students and faculty well into this still-new century. It, however, is only one of several significant changes affecting our undergraduates. We also secured more opportunities for students to study, work, and do research abroad. Closer to Cambridge, we found additional space in beautifully-renovated and new facilities alike for student activities outside the classroom. And finally, we undertook and have begun to act upon a comprehensive study of our undergraduate Houses.

During this time period, we also developed new programs for graduate students, including a funding and teaching model that enables them to make better and more productive use of their time here and to complete their programs in a timely fashion. For both undergraduates and graduate students, financial aid toward tuition and living costs increased.

The faculty continued to develop and successfully secure funding for new research centers in all of our divisions. These centers are better integrated than ever with both our research and teaching missions. Similarly, our libraries, ever under the strain of the increasing cost of materials and the need to provide information in digital forms, have nonetheless managed greatly to improve services to scholars and our students.

Ties have been forged with our sister Schools at Harvard. A new school within the Faculty of Arts and Sciences—the School of Engineering and Applied Sciences (SEAS)—demonstrates Harvard's significant commitment and long history of contributions to technology and society. The Division of Continuing Education reports growing enrollments locally and abroad, and it has recently completed several state-of-the-art classrooms in support of its leading work in distance education.

Though our space needs are ever increasing, the past 18 months have seen us complete four new buildings that provide first-rate environments for our expanding faculty: the Center for Government and International Studies (CGIS), a new Biological Research Infrastructure (BRI), the Laboratory for Integrated Science and Engineering (LISE) for the physical and engineering sciences, and finally, the soon-to-open Northwest Building.

As has been long planned, we have continued to see impressive growth in our numbers of faculty. Few universities in the world can boast the relative expansion that we have achieved in the past five years. Additions to our faculty have strengthened

important areas of research and teaching across all of the FAS divisions. The map of our collective knowledge and curiosity has expanded remarkably.

Financially, the FAS saw growth in both its operating revenue and its operating expenses. Through careful fiscal management and strong endowment returns, we ended the fiscal year 2007 (July 1, 2006 through June 30, 2007) with an operating surplus of $11.2 million, though trends in both revenues and expenses indicate that we will be spending the reserves we have built over the past few years to fund ongoing projects and our new aspirations.

The College

We have begun to implement significant changes resulting from the undergraduate Curricular Review. We now see the results of this work. At the same time, we have had dramatic increases in the number of applicants to the College.

Admissions

Classes of 2010 and 2011. The Classes of 2010 and 2011 emerged from strikingly high applicant pools (22,754 for the Class of 2010 and 22,955 applicants for this year's freshmen). Harvard's yield remains the highest among its peer institutions. For the fourth year in a row, women outnumbered men in our freshman class. These classes continue to represent a wide spectrum of minority and international students and unusual economic diversity.

Financial Aid. Harvard's financial aid program provided $103 million in undergraduate scholarships for 2007–2008, a 6.8 percent increase over the previous year, and a 57 percent increase over the past six years. Two-thirds of Harvard undergraduates receive some form of financial aid, including scholarships, loans, and jobs, with 50 percent receiving need-based institutional scholarships. The average grant portion of student aid packages is now just under $33,000. Grants have increased at a faster rate than the rate at which tuition has increased, and thus it has become less expensive on average each year for an undergraduate to attend Harvard.

Approximately 25 percent of the members of the Class of 2011 are eligible for Harvard's Financial Aid Initiative (HFAI) for low-income families, which requires no parental contribution from those with annual incomes under $60,000 and a significantly reduced contribution for those whose incomes range from $60,000 to $80,000. Since the program began three years ago, there has been a 33 percent increase in the number of first-year students who come from the affected income groups.

In December 2007, Harvard significantly expanded financial aid to relieve pressure on middle-income families. In this pioneering effort, which went into effect immediately and has since been emulated by other schools, families with incomes between $120,000 and $180,000 and assets typical for these income levels will pay, on average, 10 percent of their income toward the costs of attending Harvard. Families with incomes of $120,000 or less contribute on a declining scale from an average of 10 percent to zero. Families with incomes at $60,000 and below have no expected parent contribution. This "Zero to 10 Percent Standard" drastically reduces the cost of a Harvard education; the new policy also eliminates student loans (replacing them with increased University grants) and removes home equity from the calculation of financial packages. Harvard will likely spend an additional $18–20 million a year on this program to help middle-income families.

Early Admissions. Harvard's September 2006 decision to end Early Action went into effect in 2007–2008. For more than 30 years, Harvard's non-binding Early Action policy, in contrast to other schools' Early Decision policy, notified early applicants in December of their admissions status, but did not require a commitment to attend until May. This approach allowed students to apply to other colleges in the "regular action" cycle and compare financial aid packages.

Harvard's new policy, designed to further ease pressure on high school students, not only permits more thoughtful decisions about which colleges are the best match for them, but also reduces the ways that early-admission programs tend to disadvantage students from modest economic backgrounds.

Class of 2012. Students and secondary school counselors have responded positively to the changes that went into effect this year. The applicant pool for the Class of 2012 reached 27,462. This shattered previous records and resulted in the most selective admission rate in Harvard College's history: 7.1 percent.

UNDERGRADUATE EDUCATION

We have brought to life many of the recommendations and proposals that have emerged from the five-year Harvard College Curricular Review. These projects have engaged our faculty, administrators, and students in productive and collaborative efforts across the curriculum to improve the educational experience of our talented undergraduates.

The Task Force on Teaching and Career Development, convened in 2006–2007, produced *A Compact to Enhance Teaching and Learning at Harvard*, which argues for the importance of sustained efforts in the difficult but important area of course development and assessment. The Faculty voted in February of this year to make

course evaluations mandatory for courses with five or more students and to allow the assessment period to remain open until after completion of a course's final exam. This represents a small but important first step toward a reinvigorated culture of teaching in the FAS and the development of effective assessment of teaching and learning.

General Education. The new program in General Education is the most significant of the proposals that the Faculty adopted as part of the Curricular Review. Voted into existence in Spring 2007, "Gen Ed" embraces a distinctly different approach than that of the 30-year old Core Curriculum. Whereas the Core Curriculum focused on discipline-based ways of thinking and knowing, General Education puts forth broad subject areas worthy of students' exploration. In each of these eight areas—aesthetic and interpretive understanding; culture and belief; empirical and mathematical reasoning; ethical reasoning; the science of living systems; the science of the physical universe; societies of the world; and the United States in the world—the program urges connections between what students learn in the classroom and the lives they will lead after college. In addition to exposing students to important and diverse areas of study, a significant goal of this program is to awaken and develop in students a sense of their own agency as thinking citizens of the world.

The first new courses created for General Education will be launched in Fall 2008. Faculty members and departments may also propose existing courses, with or without modifications, for possible General Education credit.

The Class of 2013 will be the first to enter entirely under the new system, although many in the Class of 2012 will be able to choose whether they wish to complete requirements for the Core Curriculum or General Education. During the transition (i.e., until at least 2012), the College will maintain a strong Core program for those students choosing to fulfill its requirements.

General Education is shepherded by the FAS Standing Committee on General Education, one of several standing committees that were formed under the aegis of the Curricular Review. In an effort to bring together the leaders of these several groups, the membership of the Educational Policy Committee (EPC) was structured in the academic year 2007–2008 so that it includes the chairs of the Life Sciences Education Committee (LSEC), the Committee on Learning in Science and Engineering (COLSE), the standing committees on Advising and Counseling, General Education, Pedagogical Improvement, and Writing and Speaking, as well as the chairs of newly-formed committees that study our language requirement and activity-based learning. In addition to representing their particular areas, the committee leaders have together identified common goals and challenges. The EPC meetings have helped to ensure that changes made to the curriculum occur in a coordinated fashion, and in a way that serves the overall vision of the Curricular Review. The EPC's historical function of

reviewing changes to concentrations and secondary fields has continued, but now such reviews occur in the context of the larger curricular discussions.

Freshman Seminars. In the past decade, the Freshman Seminar Program has blossomed into a College success story. Since 2000, the number of seminars has grown by more than 200 percent, from 36 courses in 2000–2001 to 122 in 2007–2008. These small-group courses provide students with close faculty attention and allow students to explore their interests in an environment free of pressure from letter grades. This past year, for the first time, faculty from every School in the University offered a seminar, on topics ranging from "Human Rights in Peace and War" to "Complexity in Works of Art: *Ulysses* and *Hamlet*" to "The Neurophysiology of Vision."

Student interest in Freshman Seminars is at an all-time high, and we hear time and time again that the students who take advantage of the program find the experience to be an extremely positive one, and—for many—an experience that affects their intellectual focus throughout their time at Harvard.

In 2007–2008, 1,085 members of the Class of 2011 enrolled in Freshman Seminars. A noticeable number (99) of these students took more than one Freshman Seminar, for a total course enrollment of 1,184. 2006–2007 showed similar success, with more than 1,064 freshmen enrolled in seminars, 108 of whom took two seminars, for a total of 1,172 enrollments.

Tenured FAS faculty taught roughly 40 percent of this year's seminars. FAS ladder faculty in the junior ranks taught approximately 10 percent of the offerings, and lecturers 26 percent. The program is also enriched by faculty from Harvard's other Schools, with full professors from beyond the FAS teaching an estimated 16 percent of the seminars, non-FAS assistant and associate professors teaching six percent, and lecturers two percent.

Science Education. Innovation in science education has been especially vigorous in the past few years, with new courses designed to welcome more students into the sciences and to engage further those students already leaning toward a science concentration. Guided by the vision of the Life Sciences Education Committee, the College launched foundational courses in the Life Sciences (Life Sciences 1a and 1b) in Fall 2005. Parallel courses in the Physical Sciences (Physical Sciences 1, 2, and 3) debuted in Fall 2006. All of these courses introduce students to specific areas of study within the context of broader applications in contemporary science and technology. They were designed, and are constantly assessed, with careful attention to pedagogy as well as to content. In recognition that incoming undergraduates arrive with highly variable preparation in science, the College launched in Fall 2007 Life and Physical Sciences A, a course that provides stronger training in basic chemistry and biology, to prepare students for gateway courses in the life and physical sciences.

The Committee on Learning in Science and Engineering has offered a compelling vision of hands-on, interdisciplinary lab-based courses for students, including those students not contemplating a career in science or engineering. In 2008, COLSE began an evaluation of the current portfolio of teaching labs, with an eye toward developing new facilities in the Northwest Building and, as appropriate, renovating the Science Center and other science buildings. New facilities will enable us better to integrate into the undergraduate curriculum the latest research discoveries, while at the same time increasing students' awareness of pressing societal concerns as they learn the fundamentals of science.

New programs, such as the highly successful, 10-week Program for Research in Science and Engineering (PRISE), which first launched in the summer of 2006, indicate the College's renewed effort to bring undergraduates into labs and more directly into the orbit of attention of faculty mentors and a community of peers. PRISE, created in response to a recommendation by the Task Force on Women in Science and Engineering, offers an enriched environment of intellectual and social support for students pursuing summer research with faculty at the FAS, Harvard Medical School (HMS), the School of Public Health (SPH), affiliated research institutes and hospitals, and other units across the University. Lab research is supplemented by PRISE's intensive program of evening lectures by distinguished faculty, seminars offering practical career advice, and cultural and recreational outings. Applications for the summer of 2006 totaled 185; of these, 128 students were accepted, and 119 chose to come. For the summer of 2007, 265 applications were received; 139 were selected, and 111 students participated.

Our colleagues at the School of Engineering and Applied Sciences have also made advances in undergraduate education. The School has built new classrooms, dedicated teaching labs, and invested in staff to help faculty improve their teaching and course development. SEAS remains committed to its vision of shaping the "renaissance engineer"—students prepared to be global citizens, with fulfilling careers.

Concentrations and Secondary Fields. Figure 1 illustrates the number of undergraduate concentrators by division, from 1998 to 2008. In the spring of 2006, the Faculty voted to establish Secondary Fields: focused coursework (i.e., four to six half-courses) in one area outside a student's concentration. By giving students this option, we encourage undergraduates to widen their intellectual horizons, and to explore an area of scholarship that they might otherwise not have pursued in such depth. The first Secondary Field programs became available in Spring 2007. At the time of this writing, over 600 students are participating in the 40-plus programs now available.

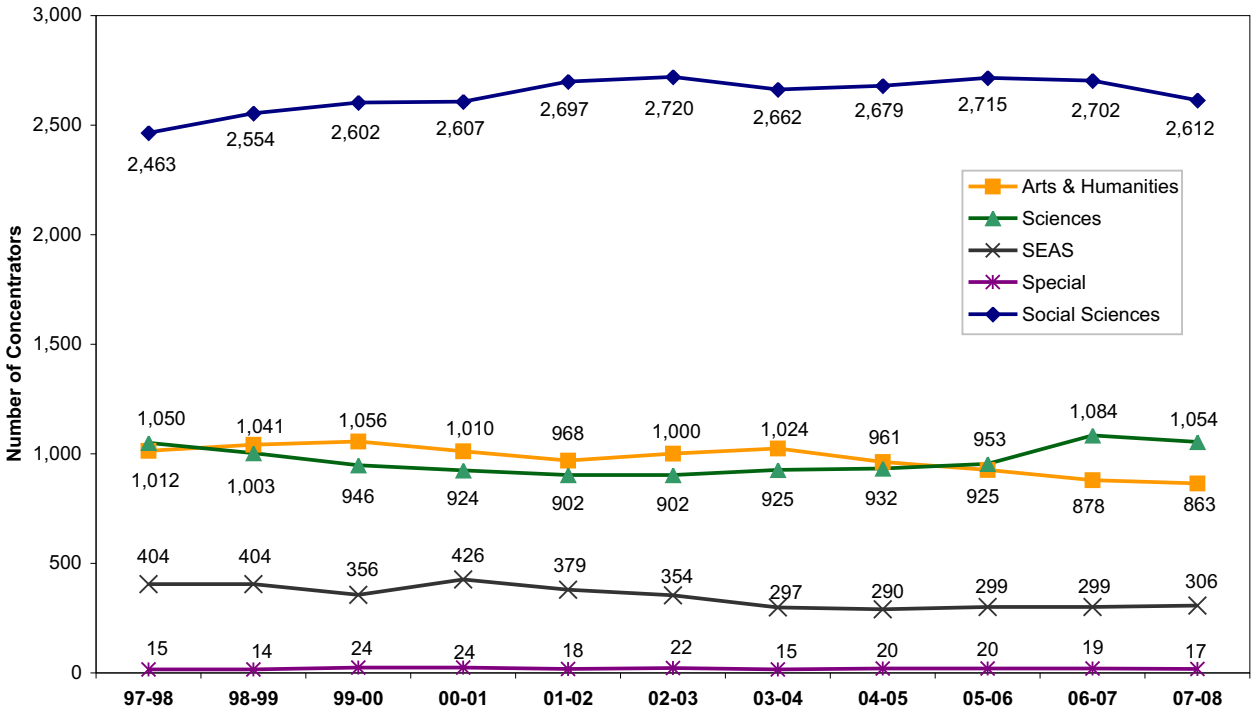


Figure 1: Undergraduate Concentrators by Division, 1998–2008. Excludes students studying abroad or on a leave of absence. All data shown are as of the end of fall term, except for 2007–2008, where the data are as of spring term. Women, Gender, and Sexuality Studies migrated from the Arts and Humanities to the Social Sciences in 07–08. For the purposes of this graph, WGS is counted as a Social Science.

Advising. Better academic advising for undergraduates—at every stage of progress toward the degree—has been a strong theme of our curricular reform. We knew, and continue to remind ourselves, that even the best assembly of courses does not constitute a good education without a sure, exploratory, and incremental path through the curriculum, one guided by attentive advice along the way. In the past two years, the Advising Programs Office (APO), created in February 2006, has made great progress.

One essential improvement has been the engagement of more faculty in advising. All first-year students still have a residential adviser (i.e., a freshman proctor), but over three-quarters of the Class of 2011 were also matched with a faculty member or other non-residential figure who serves as an academic adviser. Freshmen gave their academic advisers high evaluations, across a range of criteria. In addition, the Peer Advising Fellows program, now in its second year, connects freshmen to upperclass students who not only provide individual academic advising but also work to generate larger communities of friendship and support for freshmen, among entryways and across dorms.

Members of the Class of 2010 were the first to declare their concentrations according to the new timetable (i.e., at the end of the fall semester of their sophomore year). To support students in this important decision, and to extend the network of support formed during their freshman year, the APO launched a sophomore advising program in Fall 2007. The program, which matches sophomores with resident tutors in their Houses, has so far met with success, fortifying House life as well as academic advising. Overall satisfaction has been high, with 87 percent of students describing themselves as "satisfied" or "very satisfied," and 95 percent of students rating their advisers as highly accessible and approachable, two factors that correlate strongly with satisfaction in advising experiences.

Intensive training is available for all advisers. All Peer Advising Fellows this year attended 20 hours of training, with six-hour sessions required of sophomore advisers for the new House-based program. The majority of Freshman Advisers attended training this past September, and over 100 concentration-advising personnel trained to use the Advising Network Portal, an online tool that helps students and advisers share information and communicate.

Pre-concentration advising has been further bolstered by the creation of a September Concentration Fair, attended by every department and thousands of students, and concentration open houses held by departments the week before fall classes begin. "Advising Fortnight," held in the spring of freshman year, offers over 70 advising events, including departmental open houses, interdisciplinary panels, House events, meals, talks, and student panels.

Education Abroad. The international dimensions of a Harvard College education also continue to expand. The educational value of living, studying, or working abroad and the immense personal growth that can result from such experiences have become important components of the Harvard College curriculum. The total number of Harvard undergraduates participating in an international experience—study, research, internships, service, and work—is quickly approaching one-quarter of the College population, with travel to nearly 100 countries around the world.

In 2007–2008, 222 undergraduates studied abroad during term-time for Harvard degree credit, compared to 245 students in the previous year. In contrast to this small decline, the number of students who chose to study abroad during the summer rose by 36 percent—from 304 in Summer 2006 to 414 in Summer 2007—thanks in part to grants from the Office of International Programs and generous alumni donors.

Notably, many more Harvard undergraduates took part in Harvard Summer School's expanding array of faculty-led programs abroad. Twenty-one programs in Summer 2007 hosted 248 College students (as well as several students from other universities), compared to 190 Harvard undergraduates the year before. The Summer School is offering 25 programs in 2008.

STUDENT LIFE

Students continue to demonstrate their ability to learn and create both inside and beyond the classroom. But the plain fact is that we have more worthwhile student activities than adequate space. As Dean of the College, Benedict Gross was particularly adamant in his support for better student-activity space, and the results of his efforts are now evident:

- In October 2006, the Student Organization Center at Hilles (SOCH), a 40,000 square foot renovation of the former Hilles Library in the Radcliffe Quad, opened as a home for student-organization offices, with a coffee bar, two collaborative working zones, a music practice room and recording studio, and meeting spaces for the nearly 400 recognized student groups at the College.
- In April 2007, the Cambridge Queen's Head opened in Loker Commons, providing a restaurant, bar, and social area for all Harvard affiliates.
- In October 2007, President Drew Faust and the FAS and College Deans presided over a ribbon-cutting ceremony at the New College Theatre. This 35,300 square foot building preserves the historic façade of the former Hasty Pudding Theatre, while providing students with a state-of-the-art 272-seat theatre with multi-purpose and rehearsal spaces.
- In November 2007, the Malkin Athletic Center (MAC) reopened to the Harvard community with renovations made possible by the MAC Challenge and gifts from many donors. The renovations included: new flooring for the basketball court, entirely redone locker rooms, improved fire-suppression systems, brand-new plumbing and carpeting, better lighting, and many other essential improvements. This spring, new exercise equipment was also installed.

In 2007, the FAS and the College began strategic planning for a major new investment in the Houses. Even with an average of $12.7 million spent annually on capital maintenance and renewal, a number of the Houses are nearly 80 years old and testing the limits of their infrastructure. Renewal of all our Houses will require resources at a very high level.

After a year-long effort, the Space Assessment Committee (a group of House Masters and administrators) completed a comprehensive review of all residential space and identified housing practices that will maximize space usage. The results of this study, coupled with the findings of the recently completed House Capital Renewal Study, show that, while the Houses have been well maintained over the years, the buildings require considerable renovation and reorganization of the student living spaces. This necessity provides us with an opportunity: to consider the role of the

Houses in the larger undergraduate program and to make changes that better support a student body that is markedly different from that for which the Houses were first built.

The Graduate School of Arts and Sciences

Admissions. The Graduate School has maintained its high selectivity. In 2006–2007, the Graduate School broke previous records with its applicant pool, with 10,066 applying for entrance in Fall 2007 (up from 9,694 applying for entrance in Fall 2006). GSAS accepted only 11.8 percent of the total applicant pool and only 10.5 percent of the Ph.D. applicant pool. The overall yield declined slightly, from 62 percent in 2006 to 58 percent in 2007.

This year, the applicant pool swelled further to 10,120, with 12 percent receiving acceptances and 11 percent admitted from the Ph.D. pool. We look forward to learning what the yield will be, after this report goes to print.

Figure 2 and Figure 3 illustrate the composition of the graduate student body and the numbers of newly-matriculating students in each academic year.

Graduate Student Support. Thanks to the work of Dean Theda Skocpol and, before her, Dean Peter Ellison, GSAS now guarantees dissertation completion fellowships to all eligible candidates in the social sciences and humanities. Moreover, the steady improvement of the stipend for entering Ph.D. students in the social sciences and humanities—beginning in 2006–2007 and culminating in the recent announcement of a 10.8 percent increase for 2008–2009—will bring Harvard's standard stipend better in line with what is offered by peer institutions. Harvard's recent addition of two summers of support, for a total of four summers, will help make Harvard's packages more competitive.

During Fall 2007, GSAS worked with the Harvard University Science and Engineering Committee (HUSEC) and with the deans of the FAS, Harvard Medical School, the School of Engineering and Applied Sciences, and the School of Public Health to arrange incremental funding, beginning in Fall 2008, for larger entering Ph.D. classes in the natural sciences and engineering.

These improvements to FAS-based graduate programs will cost in the neighborhood of an additional $7 million every year, which includes $4 million for the sciences (funded through HUSEC) and approximately $3 million provided for the humanities and social sciences.

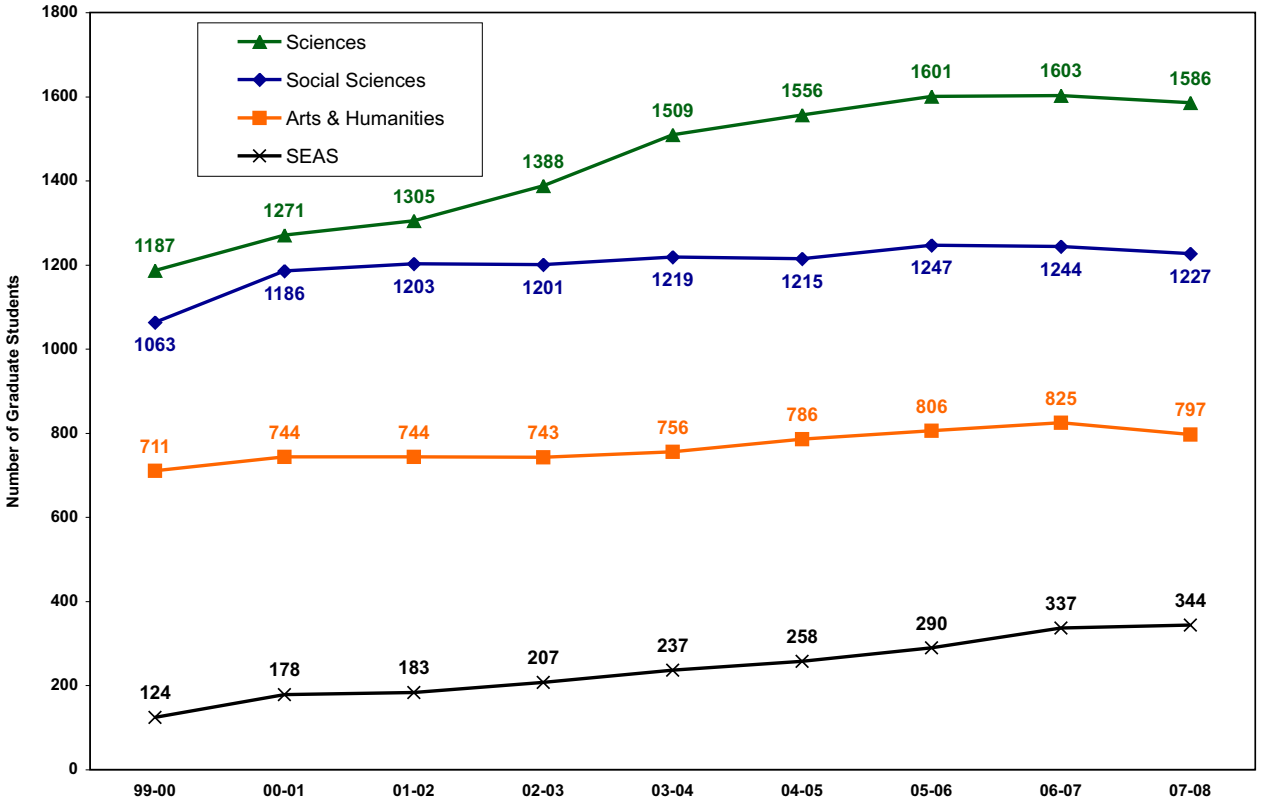


Figure 2: Total Graduate Students by Division, 2000–2008. Includes graduate students in inter-Faculty Ph.D. programs.

New Doctoral Programs and Secondary Fields. GSAS has worked with interested faculty to develop a new Ph.D. program in Film and Visual Studies, which was formally adopted by FAS Faculty vote in February 2008. The program will begin admitting Ph.D. students for Fall 2009.

Working with faculty from SEAS and the Harvard Business School, GSAS reformulated the Ph.D. program in Information, Technology and Management. It has relaunched as the Ph.D. program in Science, Technology and Management.

Six programs have established new "secondary fields" in Ph.D. studies, in African and African American Studies, Film and Visual Studies, Linguistics, Romance Languages, several subfields of Classics, and Medieval Studies. A secondary field in Ph.D. studies consists of four or five graduate courses within a discipline, interdisciplinary area, or intellectually coherent subfield.

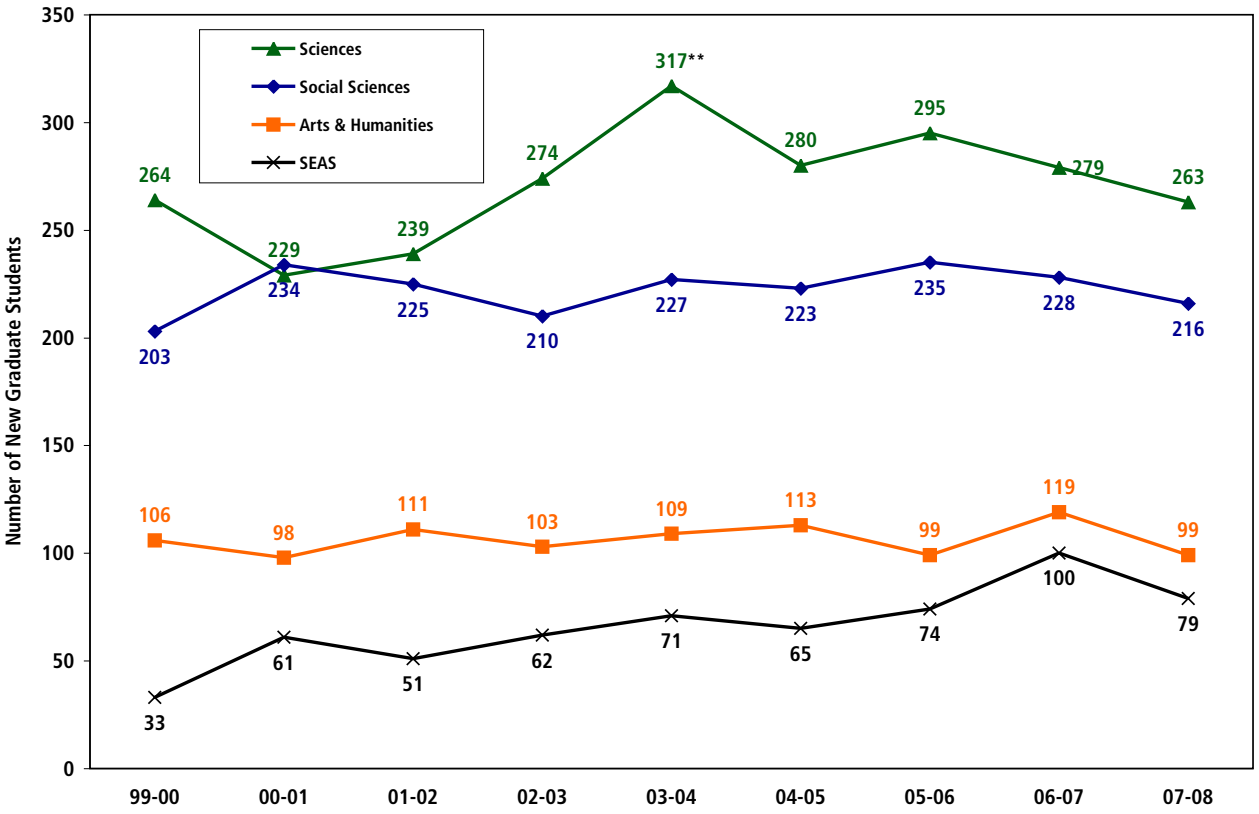


Figure 3: New Graduate Students by Division, 2000–2008. Includes graduate students in inter-Faculty Ph.D. programs. **Biostatistics Program introduced in GSAS this year (65 students).

THE SCHOOL OF ENGINEERING AND APPLIED SCIENCES

School of Engineering and Applied Sciences Academic Year 2007–2008	
Total Number of Faculty[1]	70
Total Undergraduate Concentrators[2]	306/306
Total Graduate Students[3]	344
New Graduate Students[3]	79

[1] Refers to faculty holding a ladder appointment on July 1, 2007.
[2] Refers to concentrators as of spring semester, with/without study-abroad students. Excludes all students on leaves of absence.
[3] Includes students in inter-Faculty Ph.D. programs.

In December 2006, the FAS unanimously voted to recommend to the Harvard Corporation and Board of Overseers that the Division of Engineering and Applied Sciences (DEAS) change its name to the School of Engineering and Applied Sciences. Following the FAS vote, the Corporation and Board of Overseers formally approved the measure in February 2007.

The change in status from a Division to a School highlights the dramatic renewal and growth of engineering and applied sciences during the past decade, recognizes the increasingly integral role the field plays in education and research, and showcases the University's strong commitment to exploring both the frontiers of knowledge and the practical consequences of discovery. While the transition has provided increased visibility and autonomy, SEAS is a school within the FAS. The "school within a school" structure reflects SEAS's close ties to the College and the undergraduate programs, the Graduate School of Arts and Sciences, and increasingly strong links across the physical and life sciences.

To fulfill better such a mission, SEAS has expanded its faculty from 50 on July 1, 1998 to 70 on July 1, 2007 (with 87 total participating faculty). The expansion was directed at strengthening traditional and foundational disciplines (such as applied mathematics), filling intellectual gaps (in areas such as electrical engineering and computer science), and in nurturing emerging areas such as bioengineering, nanotechnology, energy and environmental technologies, and computational sciences.

Thanks to such efforts, the quality and visibility of SEAS's academic programs have continued to evolve and strengthen, interdisciplinary research has thrived, and the School has become better positioned to maximize its positive impact on the campus, society, and the world.

Enhancing Education. In the past year, SEAS has been actively engaged in creating new courses (a portal course for engineering), building teaching labs (a space for CAD/CAM, mechanics, and photonics is due in September), and reconsidering what "design" means.

Interest in engineering as a concentration choice among incoming undergraduates has risen from nine percent to 11 percent over the past two years. In parallel with national trends, after a dip in enrollment in computer science programs, SEAS's numbers have stabilized and begun to rise. During the past years the graduate student population has gradually risen to 344 (up from 258 three years ago). The program has also maintained a high degree of selectivity and quality, with fewer than 13 percent of students who apply being admitted.

SEAS and HMS have established a joint committee with the goal of developing a cross-School program in bioengineering. In the last few years, SEAS has recruited

five new faculty with research interests related to bioengineering, built an undergraduate lab for bioengineering, and added courses to its curriculum.

Advancing Research. Interdisciplinary initiatives, such as the National Science Foundation-sponsored Materials Research Science and Engineering Center (MRSEC) and the Nanoscale Science and Engineering Center (NSEC) and the seed-funded Center for Research on Computation and Society (CRCS), continue to thrive at SEAS. The recently formed Kavli Institute for Bionano Science and Technology (led by David Weitz, Mallinckrodt Professor of Physics and of Applied Physics, and George Whitesides, Woodford L. and Ann A. Flowers University Professor) began to fulfill its initial aims with the appointment of four postdoctoral fellows.

In 2007, SEAS established the BASF Advanced Research Initiative, a greater than $20-million initiative with strong ties to departments and Schools throughout the University. Participants will pursue projects in applied physics, physics, applied mathematics, chemical biology, systems biology, bioengineering, and materials science. In these and other ways, SEAS is expanding its interactions with industry—a key priority for the School.

Making an Impact. SEAS is committed to solving some of society's most pressing practical challenges (e.g., in energy, computation, or low-cost medical devices for the developing world). For example:

- Undergraduates recently created a Harvard chapter of Engineers Without Borders, a non-profit humanitarian organization established to partner with developing communities around the world in order to improve their quality of life.
- In collaboration with SPH, SEAS researchers led a promising study suggesting that an inhaled tuberculosis vaccine may be more effective than the standard injected vaccine and may be ideal for use in the developing world.
- Computer scientists worked with industry partners to create what will likely be the first open, urban-scale sensor network testbed in Cambridge.

THE DIVISIONS

THE ARTS AND HUMANITIES

The Arts and Humanities Academic Year 2007–2008	
Total Number of Faculty[4]	210
Total Undergraduate Concentrators[5]	888/863
Total Graduate Students[6]	797
New Graduate Students[6]	99

In the fall of 2007, the Humanities Division became "Arts and Humanities," much better reflecting the work done in its departments and programs. Not only are the arts studied in many of the departments of the Humanities, but they are also produced—in Visual and Environmental Studies (in film, painting, photography, and sculpture), in Music (both in composition and performance), and in English (in all forms of creative writing), to cite a few and obvious examples. In November 2007, President Faust charged a University Task Force on the Arts to think about the appropriate role of the arts in a research university and also about the specific ways in which Harvard might better leverage its existing professional and scholarly commitments to the arts. Stephen Greenblatt, Cogan University Professor, chairs a task force that includes Divisional Dean Diana Sorensen.

In all of the Division's great diversity of scholarship, teaching, and production, the development of innovative courses has been a high priority. Some new courses will become part of the General Education program; some will fulfill departmental requirements; and some will serve as electives. Dean Sorensen plans to continue working with colleagues to develop interdisciplinary courses that draw richly on digital resources. The first of these courses is "Travel and Transformation on the High Seas: An Imaginary Journey in the Early 17th Century," taught by Professor Greenblatt.

Bringing humanities colleagues together is one of the advantages of the divisional structure. Dean Sorensen works closely with the Humanities Center, for example, to

[4] Refers to faculty holding a ladder appointment on July 1, 2007.
[5] Refers to concentrators as of spring semester, with/without study-abroad students. Excludes all students on leaves of absence.
[6] Includes students in inter-Faculty Ph.D. programs.

foster interdisciplinary connections in and beyond the Division. A greatly successful program is the Humanities Center's bi-weekly lunch series for new faculty. Another series, supported by the Division, called "The Humanities, My Way in the World," also debuted this year and helps undergraduates envision career paths that can unfold from a concentration in the Arts and Humanities. The new doctoral program in Film and Visual Studies also promises to institutionalize existing and anticipated channels between disciplines.

Dean Sorensen and the Division have also focused special attention on the teaching of foreign languages. A study of language teaching, enrollments, and effectiveness begun in 2006–2007 has produced a special committee, the Foreign Language Advisory Group. The group will issue recommendations to guide pedagogy, study abroad, the links between language and literature, and the possibilities of teaching languages across the curriculum.

The Division has undertaken several projects in the past two years to provide more support for faculty and students. The creation of a Digital Humanities Committee and the appointment of a Director for Research Computing in the Arts and Humanities signal Division-wide efforts to integrate digital resources and strategies into teaching, coursework, and faculty collaborations. The Poetry I-site—a labor of love among faculty, graduate students, the Widener Library, and the Instructional Computing Group—will launch later this year.

THE SOCIAL SCIENCES

The Social Sciences Academic Year 2007–2008	
Total Number of Faculty[7]	252
Total Undergraduate Concentrators[8]	2,676/2,612
Total Graduate Students[9]	1,227
New Graduate Students[9]	216

[7] Refers to faculty holding a ladder appointment on July 1, 2007.
[8] Refers to concentrators as of spring semester, with/without study-abroad students. Excludes all students on leaves of absence.
[9] Includes students in inter-Faculty Ph.D. programs.

Over the course of his tenure as Divisional Dean, a period of notable expansion for the Division, Dean David Cutler has worked well and thoughtfully with his colleagues to strengthen the Social Sciences.

More than half of all Harvard undergraduates now concentrate in the social sciences, a significant increase from even a decade ago. Non-concentrators also take social-science courses and enroll formally as secondary concentrators. Many of the challenges in the Division stem from the disproportion in numbers between so many students and available faculty. To allow for more sustained student interaction with faculty and other advisers, several of the larger departments—Government, History, and Psychology—have revamped their advising programs.

Substantial progress has also occurred in addressing the need for more teaching coverage. Decanal resources to hire additional faculty—and to have faculty from other Harvard Schools teach in the FAS—have been instrumental in improving opportunities for small-group instruction.

The Social Sciences have not only long-established connections with the Arts and Humanities and Science Divisions, but also strong research and teaching ties to other Harvard Schools. This year, President Drew Faust, Provost Steven Hyman, Dean Cutler, and leaders in the social sciences have discussed how better to bring together the University's social sciences. A task force on the social sciences, which includes representatives from across the University, is being created to consider the question of how to support academic programs in the social sciences that reflect disciplinary intersection. The planning for this committee is underway, with a group meeting this spring to chart a path for a larger social-science planning effort.

Already the FAS has started to draw together disparate groups. For example, we have created a secondary concentration in health policy for undergraduates, a program that draws on faculty in public health, medicine, public policy, economics, business, and sociology. This is but one example of inter-School cooperation in the social sciences, and one that shows how the University's scholarly resources can enrich undergraduate education.

THE SCIENCES

The Sciences Academic Year 2007–2008	
Total Number of Faculty[10]	180
Total Undergraduate Concentrators[11]	1,077/1,054
Total Graduate Students[12]	1,586
New Graduate Students[12]	263

In Fall 2007, then-Dean for the Physical Sciences Jeremy Bloxham agreed to serve as Dean for the Sciences, integrating the Life Sciences and Physical Sciences Divisions. This structural change merely reflected what has been apparent for some years in the sciences, namely the increasingly porous boundary between the life and physical sciences. Indeed, recent appointments have spanned departments as diverse as Physics and Molecular and Cellular Biology, or Mathematics and Organismic and Evolutionary Biology; further, recent expansions to our undergraduate concentrations have included interdisciplinary areas such as Chemical and Physical Biology, among others.

Collaborations across the sciences form the core of our new science buildings. LISE (the Laboratory for Integrated Science and Engineering) provides facilities that are used by faculty from nearly all of our science departments, while in the Northwest Building the frontiers of science will be pushed in new directions with the Center for Systems Biology and the Center for Brain Science. Although these two initiatives have their intellectual home in Molecular and Cellular Biology, they engage faculty ranging from Astronomy to Psychology.

In addition to interdepartmental collaborations, this year has seen our faculty and departments working more broadly with colleagues across the University. HUSEC (the Harvard University Science and Engineering Committee), chaired by Provost Hyman, brings together faculty from the FAS (including SEAS), Harvard Medical School (including the Harvard-affiliated hospitals), and the School of Public Health to create and nurture scientific collaborations across both the disciplines and the

[10] Refers to faculty holding a ladder appointment on July 1, 2007. Does not include Benjamin Peirce Lecturers.

[11] Refers to concentrators as of spring semester, with/without study-abroad students. Excludes all students on leaves of absence.

[12] Includes students in inter-Faculty Ph.D. programs.

Schools. Additionally, HUSEC, which had its first meeting in Spring 2007, provides a forum for the University's science-planning process and acts as a driving force for the development of innovative, interdisciplinary science education. As we expand to new areas of scientific research, especially those that cross boundaries, HUSEC will foster the development of educational components for both undergraduate and graduate students. To date, HUSEC has earmarked funds for first-year science graduate students and has developed a program to seed-fund new interdisciplinary efforts.

Beyond providing a funding mechanism for interdisciplinary science, HUSEC has facilitated the development of a vision for bioengineering at the University and has considered proposals for the growth of science education and research in Allston. Bioengineering, which spans the FAS, SEAS, and the Medical School, is an important area for growth in collaborative science and engineering.

The most visible result of this cross-School science planning is the launch of the Department of Stem Cell and Regenerative Biology (SCRB), a joint department of the FAS and the Medical School approved by the Corporation in Spring 2007. In many ways, the FAS served as an incubator for this effort, contributing faculty, graduate training, and laboratory space to its early efforts. SCRB is led jointly by Douglas Melton, Thomas Dudley Cabot Professor of the Natural Sciences and former chair of the FAS Life Sciences Council, and David Scadden, Gerald and Darlene Jordan Professor of Medicine at HMS and the Massachusetts General Hospital. SCRB will forge connections between basic science and human health, linking developmental biology, stem cell biology, and human biology. SCRB also plans to offer an undergraduate concentration, furthering the engagement of Medical School faculty in the FAS.

THE FACULTY

The renewal, composition, and size of the faculty have been the focus of recent deans, as they have sought to shape the future intellectual landscape of the arts and sciences. In his Annual Letter of May 2006, Dean William C. Kirby described not only achievements and aspirations for the growth of the faculty, but also the shared intention to diversify the faculty, an important matter to which we will return below. In his Letter of April 2007, Dean Jeremy R. Knowles emphasized both the opportunities afforded by growth, especially a "third wave" of growth in the sciences made possible by new facilities, and the extraordinary renewal afforded by the replacement of departing faculty.

Faculty Growth and Renewal. The goal for incremental growth had been set in the Faculty's academic plan at 750 for ladder faculty. Our progress toward that goal is displayed in Figures 4 and 5, showing total growth as well as growth in each division. As we plan for the future, we may choose to increase beyond that number, for all of the old arguments for a larger faculty still hold: our strength as an institution derives directly from the faculty; we are smaller in faculty size than many of our peers, with the same intellectual needs; and we can better carry out our responsibilities to students with a larger faculty.

Diversity. The Faculty has made some significant strides in encouraging and achieving greater diversity in our ranks, thanks in part to the efforts of Professor Lisa Martin, faculty chair of the Standing Committee on Women, Senior Advisor to the Dean, and Clarence Dillon Professor of International Affairs. But there is clearly more to be done. The September 2007 annual report on diversity in the FAS brings to light some encouraging trends. In academic year 2006–2007, 30 percent of all tenured positions were offered to women, the highest rate since 2000–2001, and a considerable increase over the previous five years. Also in 2006–2007, 43 percent of tenure-track offers went to women, the highest rate that had been seen recently. Recruitment of women in the social sciences has been quite successful. According to a snapshot of the faculty as of July 1, 2007, 53 percent of tenure-track faculty in the social sciences are women. But in the natural science departments the proportion of women in untenured ladder positions has only held steady.

Numbers of minority faculty have increased slowly, but steadily over time. As of July 1, 2007, 24.9 percent of tenure-track faculty were minorities, a notable increase from 20.5 percent in 2004–2005. The natural and social sciences saw growth in this regard, while the humanities saw some decline during this period. In the tenured ranks, the percentage of minority faculty rose from 9.4 percent to 10.9 percent. The social sciences and humanities recorded growth, and numbers in the natural sciences held steady.

Numbers are only one measure of progress. We must mentor junior faculty (and not only women and minorities), provide support for research and teaching, and help ensure a balance between the demands of work and non-work life for young faculty. All of our faculty should come to feel that they are well represented in decision-making and that they have a stake in the Faculty's future.

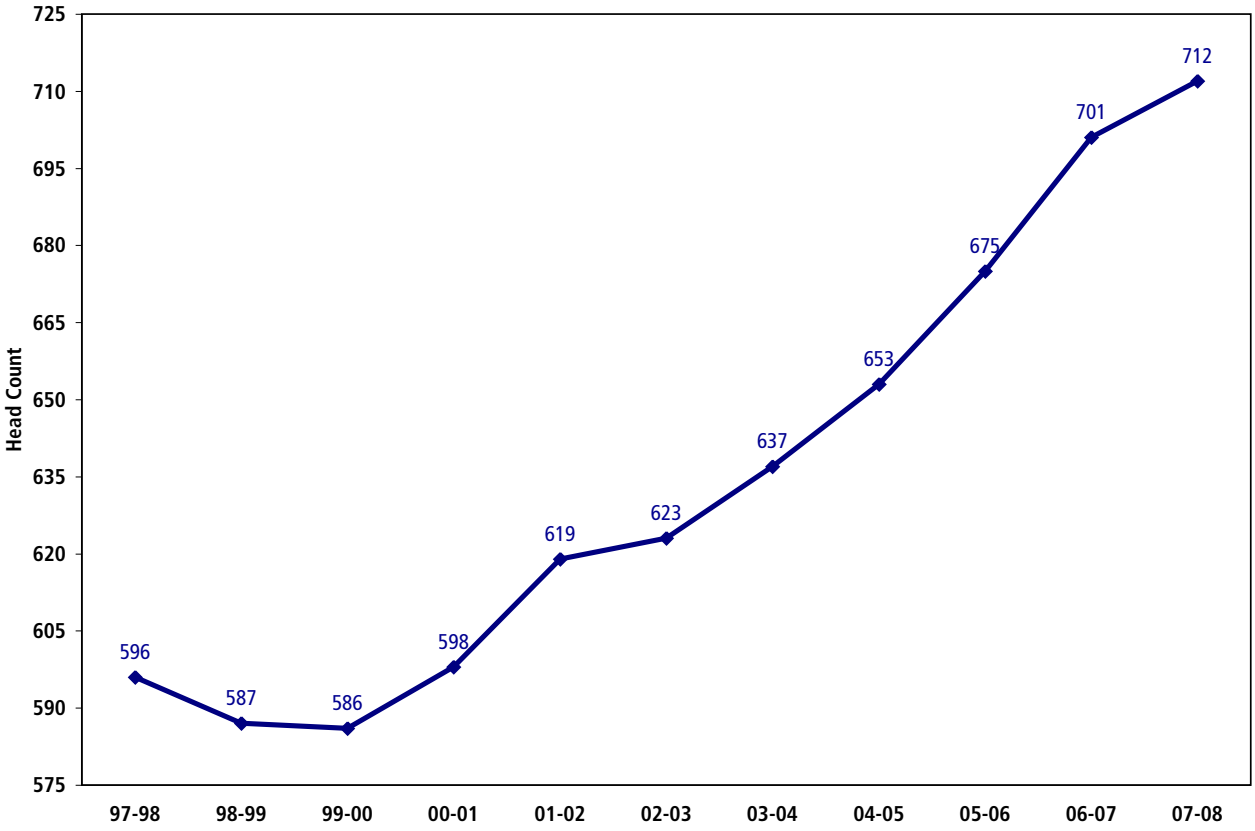


Figure 4: Ladder Faculty Head Counts, 1998–2008. Total number of faculty holding a ladder appointment at the start of the academic year (July 1st). Does not include Benjamin Peirce Lecturers.

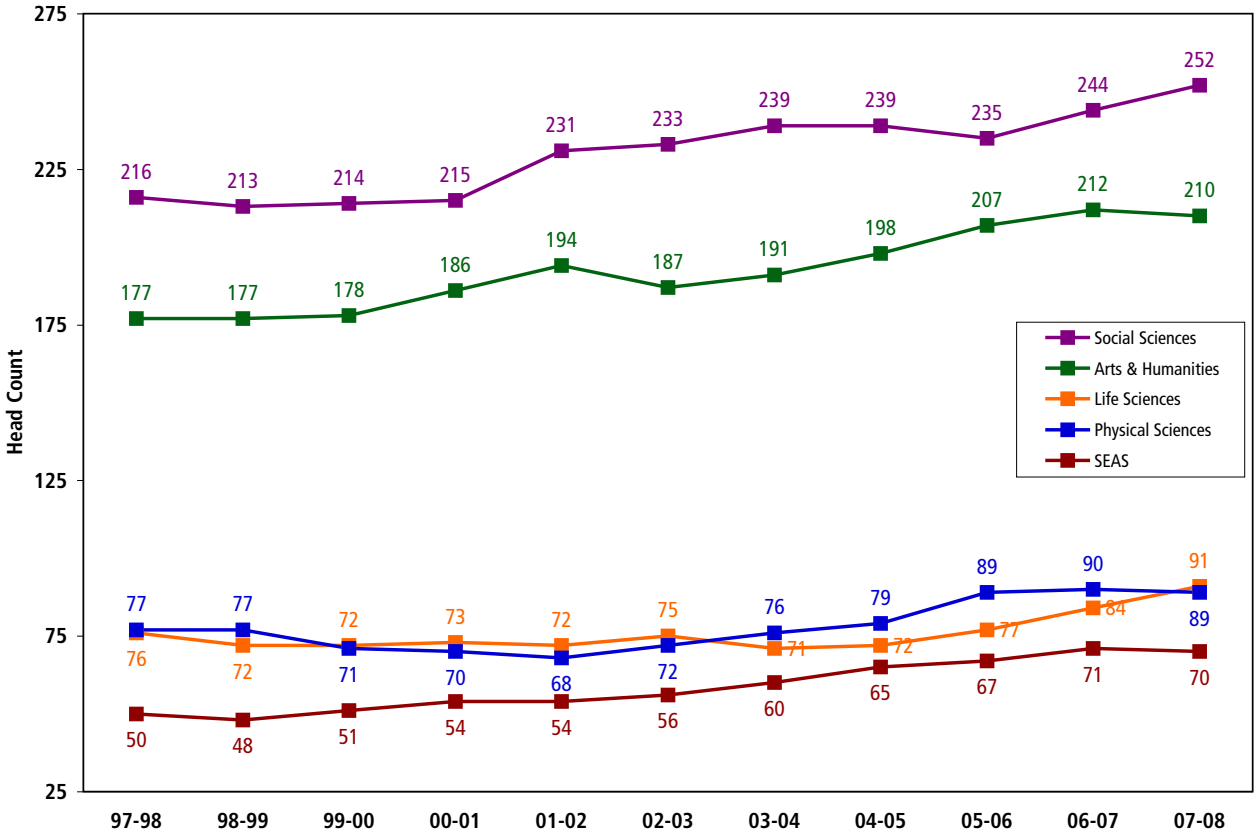


Figure 5: Ladder Faculty Head Counts by Division, 1998–2008. Total number of faculty holding a ladder appointment at the start of the academic year (July 1st). Does not include Benjamin Peirce Lecturers.

THE DIVISION OF CONTINUING EDUCATION

The Division of Continuing Education (DCE) continues to record rising enrollments for the Extension School, the Summer School, and the Harvard Institute for Learning in Retirement. Preliminary figures for 2007–2008 suggest a two-percent increase in final Extension School student enrollments and a four-percent increase in final course enrollment. In 2007, 5,560 students enrolled in the Summer School, a seven-percent increase from 2006, with 29 percent of the students hailing from 99 foreign countries. The Harvard Institute for Learning in Retirement celebrated its 30th anniversary in 2007, with a total of 563 members and a record-high number of courses offered.

The Extension School anticipates considerable future growth in its applied professional-studies programs. In 2006–2007, the new ALM in Management program got off to a promising start, producing 18 graduates. Participation leapt this year, with more than 90 students expected to graduate. Demand continues to grow in the

Extension School's programs in biotechnology, environmental management, journalism, and information technology, among others.

Two interesting trends have also emerged in the undergraduate ALB degree program. In 2006–2007, admissions rose especially among students who were under 24 years old. In 2007–2008, admissions in both this group and those who were 26 to 30 years old were especially high. In addition, a growing number of students moved to Massachusetts solely to pursue the bachelor's degree.

In the past two years, the Summer School expanded its highly successful programs abroad. It now offers 25 programs across Europe, Asia, Africa, the Americas, and the Middle East. For Harvard undergraduates and graduate students, these programs form an essential part of their educational experience; students from more than 30 other colleges and universities have participated as well.

The distance-education program continues to grow steadily, bringing DCE students into increasing contact with faculty around the University. In 2006–2007, the Extension School offered 104 distance courses, and the 2007 Summer School offered 10 courses. In 2007–2008, Extension School students chose from 108 distance courses; and according to preliminary numbers, the 2008 Summer School will again offer 10.

In 2006–2007, DCE renovated 6,000 square feet of space at One Story Street to create five high-end classrooms designed to maximize the distance-learning experience. DCE also conducted a formal evaluation of an initiative begun in 2000, the online offering of Harvard College courses to DCE students. As one of the Extension School's areas of potential growth, distance education offers intriguing possibilities for Harvard faculty, College students, and Extension School students to interact more with each other and with other classrooms and constituencies around the world.

ADMINISTRATIVE STAFF

The FAS administrative staff directly support students and faculty in academic departments, the libraries, museums, laboratories, research centers, the undergraduate Houses, and student services. They also provide the often-unseen but critical infrastructure of financial, personnel, building, and information technology services. The number of FAS full-time-equivalent staff (FTEs) in October 2007 was 3,400, with about 3.5 percent growth from the previous year. As the faculty has grown in the past few years, additional staff have been added to underpin this faculty growth, for example in increased staffing for research centers. Staff have been added in information technology and in student services. Another area of significant

staff growth reflects greater regulatory responsibilities, as compliance with local, state, and federal regulations has become a growing demand on our daily activities.

Organizational Review. Successful collaboration between faculty and administrative staff has been, and will continue to be, critical for the work of the FAS. Beginning in academic year 2007–2008, we undertook an organizational review of the FAS academic leadership and the administrative positions in support of that leadership. We have identified where we need to clarify responsibilities, delegate authorities, reinforce existing structures, and adjust existing processes, all to prepare for the opportunities and challenges facing the FAS.

Performance Review. The FAS Human Resources (FAS HR) office undertook a multi-year renewed emphasis on staff feedback and evaluation. Such reviews are vital to good management, but have been encouraged as a two-or-more-way discussion between supervisor and employee—helping to identify what has worked, what hasn't, what needs to be done in the coming year, and how it can best be accomplished. To encourage these discussions, FAS HR has developed a website with different aids to evaluation and stands ready to offer advice.

Supervisor Training. Performance review is only part of the important work of supervisors, and FAS HR has also begun a program of supervisor training that includes sessions on financial and institutional ethical responsibility. A small mentoring program has begun and will grow. In all such efforts there is increasing emphasis on staff diversity.

Staff Diversity. While the FAS HR effort is focused on a very broad definition of diversity, it has taken particular note that the FAS (and indeed Harvard as a whole) has fewer racial and ethnic minorities than their proportion in the Greater Boston workforce might predict. We have begun to take steps to improve the situation. A small FAS committee has made proposals that address diversity in our staff, and this effort has the endorsement and support of the Dean of the Faculty of Arts and Sciences. A larger group of FAS staff will be convened to help academic and administrative departments improve minority hiring and to create an atmosphere throughout the FAS that welcomes and encourages a wider diversity of staff.

SPACE

In the past two years, the FAS has continued to actively shape and expand its physical environment, in what has proven to be one of the most significant periods of capital renewal at Harvard in several decades.

As described earlier in this report, the College has undergone numerous transformations, launching the Student Organization Center at Hilles, the Cambridge Queen's Head in Loker Commons, the New College Theatre, and a newly restored Malkin Athletic Center. Moreover, major strategic planning is in the works to renovate the 12 undergraduate Houses.

Equally important during these past 18 months has been the ongoing construction of key science buildings, which greatly expand opportunities for both interdisciplinary research and hands-on learning for students.

The Laboratory for Integrated Science and Engineering opened in June 2007, following three years of construction. This 140,000 square foot building supports research in physics, chemistry, and engineering, as well as related interdisciplinary fields through the Center for Nanoscale Systems. LISE's physical connections to nearby buildings, including those of the School of Engineering and Applied Sciences, make it a hub for faculty collaboration across Schools and departments.

The Northwest Building, scheduled to open to scientists and their research groups in the summer of 2008, and which will be ready for the start of classes in the fall, will provide 485,000 square feet for the Center for Brain Science, the Center for Systems Biology, and research in neuroscience, bioengineering, and biophysics. The Kavli Institute for Bionano Science and Technology and collections from the Museum of Comparative Zoology will also be housed in the Northwest Building. As mentioned earlier in this report, teaching labs in Northwest will play an important role in our science curriculum for undergraduates.

In January 2007, Harvard announced "The Plan for Harvard in Allston," the preliminary framework of a proposed 50-year master plan for new facilities for teaching and research, arts and culture, student housing, open space, athletics, new locations for graduate schools, and improved streets, walkways, parks, and other public amenities.

After extensive community review throughout 2007, the Harvard Allston Science Complex received unanimous approval by the Boston Redevelopment Authority in October 2007. Construction activities have already begun. The new building will house faculty from the Department of Stem Cell and Regenerative Biology (a joint

department of the FAS and HMS), components of a bioengineering initiative involving SEAS and HMS, and HMS's Systems Biology Department.

Sustainability. In Cambridge and Allston, a new commitment to environmental sustainability has taken hold. The FAS has been executing on a commitment to create a cleaner environment, reduce energy consumption, and pursue other practices designed to mitigate climate change and promote a sustainable environment. There have been several notable achievements so far:

- The FAS has adopted Green Building Guidelines, which among other things, require that all FAS projects over five million dollars be certified as meeting the nationally accepted LEED (Leadership in Energy and Environmental Design) Silver standard for green buildings.
- Our Resource Efficiency Program, which hires undergraduates to help promote energy conservation and recycling in the Houses and the Yard dorms, has been very successful. A sustained reduction in the College's electrical consumption and the waste stream (with a corresponding increase in recycling) represents an annual savings of more than $186,000 for the FAS.
- Likewise, the Campus Energy Reduction Program, which focuses on more efficient use of computers, has yielded an estimated $98,000 in savings each year, with corresponding reductions in carbon dioxide.
- Finally, from operations and capital investments that increase the efficiency of FAS buildings, we have saved more than three million dollars since December 2005.

In Fall 2006, Harvard undergraduates voted to ask the FAS to commit to significantly reducing greenhouse gas emissions. A committee of students, staff, and faculty, assisted by the Harvard Green Campus Initiative, has since produced a strategic plan, the "FAS Greenhouse Gas Reduction Plan," to guide these efforts.

Although the FAS has invested in energy-efficient projects and practices for many years, we are now committed to working toward an average annual three-percent reduction in greenhouse gas emissions for the next five years. A rolling series of three- to five-year plans will follow, each providing the opportunity to include emerging best practices and technologies.

THE LIBRARY

The past two years have been eventful ones for the Library. Lamont Library now regularly operates 24 hours a day Monday through Friday, and is open for 30 hours on the weekend, following a two-year trial period which began in Fall 2005. The

Lamont Library Café, which opened in October 2006, has proved extremely popular. Lamont Research Services, which unites the formerly-separate reference staffs of Lamont Library and the Social Sciences Program, opened in September 2007 on Level B.

The Fine Arts Library, the oldest academic library in North America devoted to the history of art and architecture, will relocate from the Fogg Art Museum in Summer 2009, when the Fogg closes for renovation. Large numbers of slides are currently being digitized, fragile items are being placed in protective boxes and envelopes, and various preservation and stabilization treatments are taking place before materials move to interim sites in Littauer and the Sackler Museum.

The Library has improved several of its instructional spaces, renovating the Houghton Seminar Room, for instance, to accommodate the rising use of Harvard's rare collections in undergraduate courses.

More courses are incorporating film and media in both teaching and research assignments. In June 2007 the Harvard Film Archive completed a major renovation of the projection booth in the Carpenter Center lecture hall, replacing the old projectors with state-of-the-art machines.

In addition to building its traditional print collections, the Harvard College Library continues to build online collections that support instruction and are openly accessible. To provide access to rare or delicate materials, the library offers online surrogates. The Harvard-Google Project to digitize public-domain works is running smoothly, with links added to HOLLIS on a weekly basis.

One of the most striking developments in the past two years has been the Library's increased collaboration with faculty, in creative efforts to integrate the Library's resources into teaching and research. Library Liaisons—librarians who establish ongoing relationships with FAS departments or programs—have been working with faculty and instructors to develop more than 200 course research guides that provide detailed advice on how to conduct library research in a variety of subject areas. The liaisons teach library-related classes, provide general reference services to faculty and students, and help instructors identify E-resources to link to from course web pages, giving students direct access to online readings for courses. This effort continues to be an important factor in reducing the size and cost of printed course materials.

This spring, in a historic decision, the FAS voted to give the University license to post FAS faculty members' scholarly articles in a University-wide open access repository, making the articles available worldwide for free. Faculty members may waive the license for particular articles if they choose. This move will help promote the dissemination and preservation of significant research; if emulated by other institutions, it has the potential to change the way scholarship is conducted in years to come.

INFORMATION TECHNOLOGY

The FAS continues to improve its support and infrastructure for information technology. A five-year strategic plan launched in July 2006 has resulted in many ongoing enhancements. The IT organization's name has also changed from FASCS to FAS IT.

Faculty use of course websites continues to rise, with approximately 1,100 College and GSAS course sites activated each semester in 2007–2008. This year, 124 courses posted their lectures online, a slight increase over last year. In addition to lecture videos, the Instructional Computing Group (ICG) has helped to host more than 200 collections of video and audio clips for use in FAS courses.

Support for research computing has greatly improved with the hiring of an Executive Director of FAS Research Computing and Directors of Research Computing in the Life Sciences, the Physical Sciences, and the Arts and Humanities, respectively. A similar position is being considered in the Social Sciences, and an Associate Director for High Performance Technical Computing has also been named. Shared high-performance computing and storage clusters have enhanced research computing in the Life Sciences and SEAS, and this model is being extended to the other FAS divisions.

In January 2006, the FAS began a crucial modernization of the campus network, with the goal of completing the process in 2009. The network is already much faster and more stable and will continue to improve noticeably. We now benefit from a more reliable connection to the Internet, ten-fold speed increases to remote Harvard locations, significantly improved wireless connectivity (especially in residence halls), better detection of malicious activities, and improved systems for the authentication and monitoring of computers on the FAS network.

FAS IT has upgraded and replaced key systems, so that a non-functional system "fails over" to a spare. In this way, behind-the-scenes hardware failures need not concern our users, and failed systems can be transparently and quickly restored. Redundancy now better protects important FAS servers, and backup of major systems occurs more frequently. Improved spam blocking and FAS-wide virus protection of the e-mail system make e-mailing less cluttered and safer.

Data-center space to house our computational infrastructure continues to be in short supply, but planning has begun, including with other Boston-area universities, to address our growing needs. We are also improving the electrical and cooling capacities of the existing data centers on campus, as well as adopting measures in these centers that enhance life and physical safety and reduce accidental water damage.

FINANCIAL STATUS

The Faculty of Arts and Sciences has regularly issued a financial report on its revenues and expenses for each fiscal year ending on June 30. The FAS budget is both large (roughly a billion dollars) and highly decentralized (with sizable spending under the direct control of departments, centers, libraries, and museums). The "consolidated budget," described in the tables that follow, is a high-level summary sorted by the functions that collectively characterize the teaching and research mission of the FAS.

The FAS maintained strong financial health in the fiscal year ending June 30, 2007 (FY07), with strong endowment growth and an operating surplus of $11.2 million (one percent of the operating budget). The results are more favorable than expected, due to delays in spending and several large, one-time events. Overall, operating revenue grew by seven percent to $1.02 billion, with steady growth in all revenue categories except sponsored research; operating expenses grew by six percent to $1.01 billion.

Operating Revenues. The FAS operating revenue comprises income from four major categories: student income, endowment income, current-use gifts, and income from grants and contracts (i.e., sponsored research). Except for the income for sponsored research, each revenue category saw growth over fiscal year 2006.

Net student income in the FAS, which grew by six percent over last year, is revenue from tuition and fees offset by money spent in financial-aid scholarships. Undergraduate and graduate tuition income grew (6.7 percent), largely reflecting an increase in the tuition charged, but this growth continues to be outpaced by our steady improvements in financial aid (11 percent growth). The Division of Continuing Education saw its tuition income grow by nearly 20 percent. The sizable increase is largely attributed to expanding enrollments in the Extension and Summer Schools.

FAS **endowment income** grew significantly (11 percent) in FY07. The growth was fueled primarily by an increase in the endowment distribution. The endowment distribution comprises a "normal distribution" and for some endowment funds a "strategic payout." In particular, the recent strong investment returns have allowed the Corporation to approve an *additional* payout, the strategic payout, on selected funds that align with the most important priorities of the FAS.

Better-than-anticipated gains in **current-use gifts** from our alumni and other donors marked FY07. Current-use gifts, available for immediate expenditure and subject to donor restrictions, increased by $4.4 million or seven percent. A notable portion (16 percent) of FY07 current-use funding was designated for stem cell research.

After some years of steady growth in income from **grants and contracts** to faculty, there was a considerable decrease in sponsored research funding in FY07, down slightly more than nine percent from the prior year. The major cause of the decline was in federal funding, primarily in research support from the National Institutes of Health, the National Science Foundation, and the Department of Defense. The decline mirrors trends in national funding.

Figure 6 looks beyond the changes in our income between FY06 and FY07 and illustrates how the FAS's dependence on the different sources of income has changed over the past 15 years. The major change is our increasing dependence on endowment income. Endowment income is now roughly half of our revenues, up from less than 30 percent in FY92.

Though now only 20 percent of our operating revenue, net student income is disproportionately valuable, as it is our major source of unrestricted income. Tuition funds are available to pay any student-related expense, from increased energy costs for classrooms to the cost of new instructors. And because the cost of undergraduate education far exceeds tuition, this income source is always fully used. As we increase our efforts to make Harvard affordable and reduce the educational debt incurred by our students, we can expect to see net student income continue to decline as a proportion of our future operating revenues. This loss will have to be made up elsewhere on our income statement if we are to continue to expand and renew our programs and facilities.

Operating Expenses. Our expenses are sorted by functional categories in the tables listing consolidated operating revenues and expenses, at the end of this report. Underlying the functional categories are the main components of each expense, e.g., compensation for faculty and staff, the operating costs of our libraries, and the material support for teaching and research—equipment, laboratories, and classrooms.

Categories of expense that rose significantly in FY07 include faculty compensation and research start-up, the operation of instructional departments, academic computing, student services, and interest expense on new buildings. In recent years, expansion of the ladder faculty has driven above-inflation increases in the costs of faculty compensation and the support costs of research and scholarship, including staff and buildings.

The total number of faculty offering **instruction**, factoring in new hires and departures, grew during the fiscal year, driving increases to faculty compensation of six percent. Department operating expenses also grew by 11 percent, driven by new staff and the cost of materials needed to support growth in teaching and research activities.

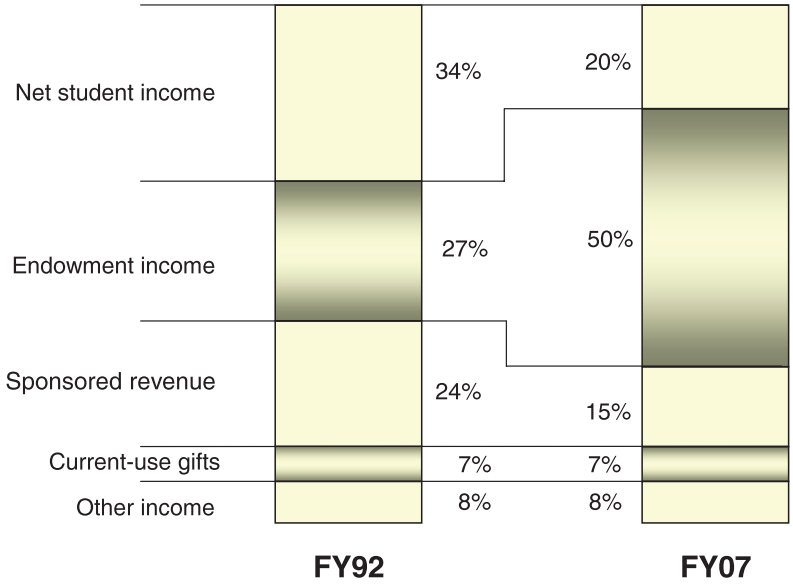


Figure 6: Sources of Income (% of Total). Note: Dumbarton Oaks, the Rowland Institute, and the Center for Hellenic Studies were not part of the FAS in 1992.

FAS-supported **research** costs for faculty start-up funds, as well as centers and institutes, increased significantly, while costs driven by federal and non-federal sponsored research declined, mirroring the decline in sponsored revenues marked above.

In the category of **academic support,** academic computing costs grew by 46 percent, as we undertook large projects to upgrade the campus network, improve research and academic computing infrastructure, and enhance user support.

Advising improvements, the new Harvard College Women's Center, and the operating costs of new social spaces for students, including improvements in Loker Commons and Hilles, have driven an eight-percent increase in the cost of **student services**. **Graduate stipends and other student awards** increased by 11 percent, reflecting the growth in the number of graduate students in the sciences and increased undergraduate student support for study abroad and the Program for Research in Science and Engineering.

With the completion of the Center for Government and International Studies, the Biological Research Infrastructure, and a number of faculty lab renovations, **interest** expenses have grown by 37 percent over the prior year, as the FAS began debt payments on these projects.

In FY07, the FAS transferred Massachusetts Hall to the Central Administration and the building housing the Ukrainian Institute to the Law School, resulting in a funding

transfer of nearly $7 million to the FAS. Per University policy, this one-time transfer was booked as an offset to expenses, thereby masking some of the growth in expenses.

Also during FY07, the FAS decapitalized $100 million of endowment funds. This decapitalization helped the University achieve its spend rate goals for the year, and provided some financial relief to the FAS by helping to fund construction costs that would have otherwise been funded by debt.

Looking Forward. The expense tables do not reveal that some anticipated expenses for FY07 were delayed, temporarily improving our net financial results: further investments in information technology, LISE building occupancy, and faculty hiring were slower than anticipated. These expenses will be registered in future financial reports. The FAS had predicted a net negative outcome for FY07, but as we have seen, some positive gains and delays in spending have again held back the anticipated negative results.

Having quite successfully begun an era of major investment in faculty growth, student support, and new facilities, the FAS has moved beyond a period of building financial reserves in support of those plans. The reserves we have built over the past several years will be spent over the next years to fund ongoing improvements and our new aspirations.

Our increasing dependence on the endowment as a source of revenue will require coordinated and careful financial strategies. Composed of some 6,200 separate funds, the $15.8 billion FAS endowment is 85 percent restricted to purposes specified by donors. While we are fortunate to have a sizable endowment and have experienced significant growth in our endowment income, our challenge is to spend our wealth wisely and carefully. We must use our restricted funds as efficiently as possible within the terms specified by benefactors, so as to maximize the availability of unrestricted income for priority needs. Even as economic indicators worsen, the endowment should provide a steady and appreciable stream of income.

As previous deans have emphasized in annual reports like this one, our future performance as a premier research and educational institution will depend on thoughtful academic planning and a combination of financial strategies. We must continue to use our endowments efficiently, prudently manage our expenses, and contribute to broad University efforts where our objectives are shared. Finally, we will seek new funds when a clear and compelling case can be made for the benefit that these new funds will yield to our students, our institution, and ultimately the world.

Faculty of Arts and Sciences

Consolidated Operating Revenue and Expense for the Fiscal Years ended June 30, 2007 and June 30, 2006

($, in thousands)

	Unrestricted Funds	Designated Funds	Restricted Funds	Sponsored Funds	**FY07 Total**	FY06 (c) Total	% change
REVENUE							
Student Income							
Tuition and Fees							
Undergraduate	215,663	465	0	0	**216,128**	203,214	
Graduate	43,986	0	0	0	**43,986**	40,445	
Continuing Education and Other	47,143	194	0	0	**47,337**	39,555	
Subtotal	306,792	659	0	0	**307,451**	283,214	9%
Lodging and Service Fees	44,098	48	0	0	**44,146**	41,888	
Subtotal	350,890	707	0	0	**351,597**	325,102	8%
Less Scholarships Applied (a)	(52,299)	(3,351)	(82,471)	(8,153)	**(146,274)**	(131,730)	
Net Student Income	298,591	(2,644)	(82,471)	(8,153)	**205,323**	193,372	6%
Investment Income							
Endowment Income	107,552	52,101	335,267	0	**494,920**	445,276	
Interest on Fund Balances	2,938	5,852	7,092	776	**16,658**	14,306	
Subtotal	110,490	57,953	342,359	776	**511,578**	459,582	11%
Gifts for Current Use	21,861	0	46,999	0	**68,860**	64,497	7%
Grants and Contracts							
Federal Grants and Contracts	0	0	0	97,917	**97,917**	108,735	
Non-Federal Grants and Contracts	0	0	0	22,074	**22,074**	23,471	
Indirect Cost Recovery	37,696	309	0	0	**38,005**	41,807	
Subtotal	37,696	309	0	119,991	**157,996**	174,013	-9%
Sales, Services and Program Income	7,542	9,189	5	1	**16,737**	15,070	
Other Income (b)	38,059	18,757	8,480	214	**65,510**	52,510	
Total Operating Revenue	514,239	83,564	315,372	112,829	**1,026,004**	959,044	7.0%

(a) Accounting rules require that the income from tuition and fees be offset by expenditures on scholarships for undergraduates and a portion of the fellowships for graduate students (graduate student stipends are treated as an expense).

(b) e.g., application fees, miscellaneous income, and support from non-FAS departments.

(c) Certain categories have been restated in FY06 for comparative purposes.

Consolidated Operating Revenue and Expense for the Fiscal Years ended June 30, 2007 and June 30, 2006 **($, in thousands)**

	Unrestricted Funds	Designated Funds	Restricted Funds	Sponsored Funds	**FY07 Total**	FY06 Total	% change
EXPENSE							
Education and General							
Instruction							
Faculty Compensation	60,627	432	88,600	271	**149,930**	141,347	
Instructional Support	1,651	0	25,323	0	**26,974**	25,824	
Administrative and Support Staff Compensation	26,329	2,788	10,960	1,508	**41,585**	40,751	
Post Doctoral Fellows and Research Assistants	620	727	5,472	363	**7,182**	5,881	
Operation of Instructional Departments	10,246	3,446	12,477	1,792	**27,961**	25,157	
Division of Continuing Education	38,385	1,171	282	29	**39,867**	35,173	
Faculty Recruitment	73	0	2,151	0	**2,224**	2,483	
Subtotal	137,931	8,564	145,265	3,963	**295,723**	276,616	7%
Research							
Faculty Research and Start-Up	379	633	17,993	3	**19,008**	15,133	
Centers and Institutes	8,686	18,528	47,125	5,576	**79,915**	73,581	
Sponsored Research	1,184	291	122	95,295	**96,892**	102,071	
Subtotal	10,249	19,452	65,240	100,874	**195,815**	190,785	3%
Academic Support							
Libraries	43,912	5,314	21,619	383	**71,228**	69,335	
Museums and Other Cultural Activities	2,119	3,124	9,354	143	**14,740**	14,929	
Instructional Support Services	7,045	2	1,152	47	**8,246**	8,022	
Academic Computing	20,672	493	0	0	**21,165**	14,506	
Academic Support Administration	5,062	704	766	3	**6,535**	6,954	
Dumbarton Oaks	5,186	443	1,077	0	**6,706**	7,093	
Subtotal	83,996	10,080	33,968	576	**128,620**	120,839	6%

Consolidated Operating Revenue and Expense for the Fiscal Years ended June 30, 2007 and June 30, 2006 **($, in thousands)**

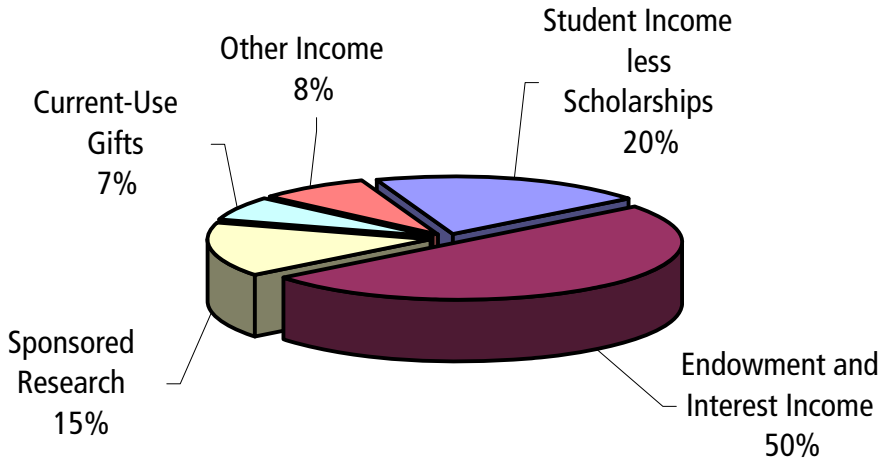
EXPENSE (continued)

	Unrestricted Funds	Designated Funds	Restricted Funds	Sponsored Funds	**FY07 Total**	FY06 Total	% change
Student Services							
Admissions and Financial Aid	9,110	315	318	99	**9,842**	9,581	
Student Counseling and Advising Services	3,684	97	545	17	**4,343**	3,712	
Intercollegiate and Intramural Athletics	14,252	1,044	5,912	0	**21,208**	19,630	
House and Freshman Life	4,625	772	1,392	72	**6,861**	6,415	
Registrar	3,916	(4)	0	0	**3,912**	3,816	
Student Services	10,746	973	3,547	9	**15,275**	13,700	
Subtotal	46,333	3,197	11,714	197	**61,441**	56,854	8%
Graduate Stipends and Other Awards	14,182	3,596	15,362	7,710	**40,850**	36,762	11%
General Administration and Institutional Support							
University Assessments	15,908	17,811	4	0	**33,723**	31,148	
Development	396	15,151	347	0	**15,894**	14,842	
Alumni Relations	1,757	0	0	1	**1,758**	1,926	
Administrative Departments	8,906	(20)	64	0	**8,950**	9,409	
Administrative Computing	1,798	0	0	0	**1,798**	1,881	
Subtotal	28,765	32,942	415	1	**62,123**	59,206	5%
Operations and Maintenance of Buildings	117,277	1,169	24,828	35	**143,309**	138,802	3%
Interest	28,619	821	0	0	**29,440**	21,489	37%
Total Operating Expense	467,352	79,821	296,792	113,356	**957,321**	901,353	6%
Non-Operating Activity (d)	51,021	(13,323)	19,655	97	**57,450**	52,804	
Total Activity	518,373	66,498	316,447	113,453	**1,014,771**	954,157	6%
Increase (Decrease) from Operations	**(4,134)**	**17,066**	**(1,075)**	**(624)**	**11,233**	**4,887**	

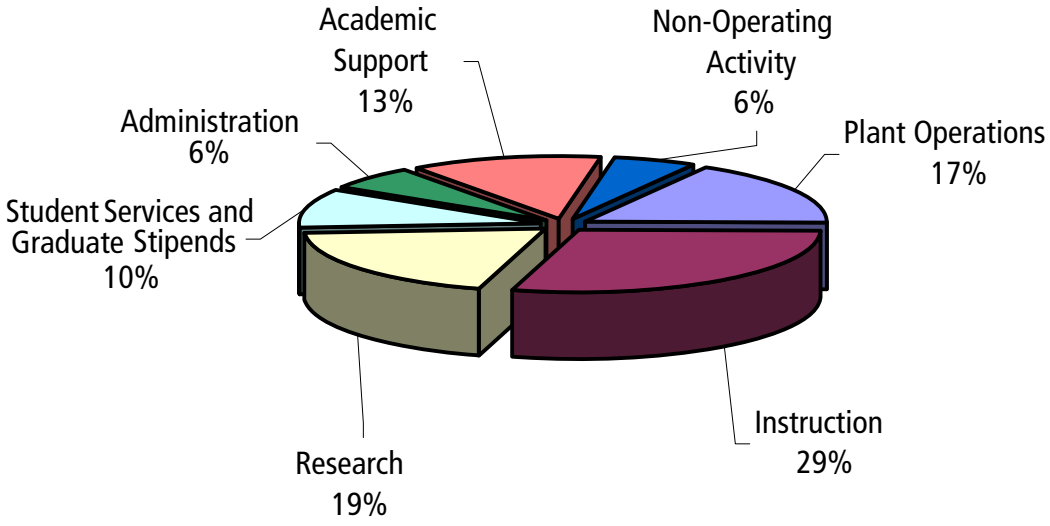
(d) Including transfer of cash reserves to endowment.

FAS Consolidated
All Operating Funds FY2007

Revenue
$1,026m



Expense
$1,015m



FINANCIAL TERMINOLOGY AND DEFINITIONS

The basic terminology of fund accounting—the accounting and reporting system used by most not-for-profit entities—is helpful in understanding the financial statements. **Fund accounting** is a method of segregating resources into categories according to the restrictions placed on their use by funding sources. The operating funds presented in the financial statement are unrestricted funds, unrestricted designated funds, restricted funds (both endowment and current gifts), and sponsored funds. Each fund type is explained below:

Unrestricted funds are those available to pay any expense or acquire any asset. There are no conditions on their use.

Designated funds are legally unrestricted, but their use is limited by internal policies or decisions.

Restricted funds have formal constraints placed on their use. These funds may be used only for the purposes stipulated by the donor, which may or may no longer be aligned with our current academic plans.

Sponsored funds are primarily those received from government agencies and organizations for a specific project or purpose, including financial aid. Non-federal funds received from foundations and corporations are included here if they meet certain tests defining "sponsored projects," including specific budgeting and reporting requirements, the segregation of funds, and the disposition of the products of research.

The distinction between funds available for current use and funds held in the endowment is also used in the statements. **Current-use funds** are available for immediate expenditure, subject to restrictions placed by donors. **Endowment funds** must normally be held in perpetuity for the purposes designated by the donor, and only the annual income distribution from these funds is available to spend. The distribution from unrestricted endowment may be spent for any purpose, but the principal must be held in perpetuity.

The majority of the FAS endowment is held in the General Investment Account (GIA), which is managed by the Harvard Management Company. The **normal income distribution** and the **strategic payout** are established annually by the Corporation and set at levels designed to preserve the value of the endowment in real terms (after inflation). Each year the Corporation targets to spend approximately five percent of the endowment's market value. The actual spend rate achieved each year varies from the target spend rate as market performance causes the actual value of the endowment to differ from the forecast value used in determining the FAS budget.