Dean for Undergraduate Education

During the past year, the Office of the Dean for Undergraduate Education (DUE) has seen important progress in a number of areas critical to student life and learning at MIT. The first section of this report contains highlights of efforts in the Dean's Office and in several of the offices that report to the dean. Many more highlights are contained in the sections relevant to the individual offices.

Through the Office of Academic Services, the Office of Minority Education, and other support offices, we are making important progress in enhancing advising and mentoring for undergraduates. These efforts are coordinated with the Committee on the Undergraduate Program, which—in collaboration with the Committee on Student Life—recently issued a report calling for a more systemic effort in this area by the faculty and departments.

Through excellent work by the Admissions Office and the Student Financial Services Office (SFS), we once again increased our undergraduate admissions yield to a record level, this year to 67 percent. The enrolled class continues the tradition in recent years of a remarkably talented and diverse group of young scholars. SFS was able to make important progress this year in shaping our loan offerings to be competitive even in the face of undesirable changes in federal regulations.

The Careers Office continues to serve more students, including many graduate students. We are seeing many more companies visiting as the economic recovery has its effect.

The Edgerton Center saw a major increase in its activities this past year, as significant outside funding emerged. This center continues to play an important role in providing opportunities for students to pursue nontraditional educational activities outside the classroom. Edgerton Center member Amy Smith was honored this past year with a MacArthur Foundation grant for her leadership in providing opportunities for students to participate in significant public service work overseas.

The Office of the Registrar, in addition to its many other tasks, continues to manage successfully our classroom inventory in a very tight environment. This task will be especially difficult during the next two years, as the Physics–DMSE construction project will take about 18 classrooms offline.

The Cambridge-MIT Exchange (CME) continues to attract many MIT and Cambridge students who want a study abroad opportunity. We have largely completed the process of embedding the support activities for CME in DUE. We are working hard, with the Development Office, to find funds to support the incremental student expenses for the foreseeable future. We are also in the process of establishing a general study abroad office, which will provide an information source and starting point for students interested in a variety of international opportunities.

Many members of DUE are involved in important ways in the activities of the Task Force on the Undergraduate Educational Commons. With the task force expected to

issue a report late in calendar year 2005, we expect DUE to be heavily involved in implementing its recommendations. This is an exciting opportunity for leadership of critical educational change.

The Teaching and Learning Laboratory (TLL) has made important progress in providing resources and training for teaching assistants (TAs) at MIT. While TA training will likely remain largely the responsibility of individual departments, TLL is playing an important role in coordinating activities, providing some resources centrally, and disseminating best practices.

Most of the Student Services Information Technology (SSIT) group was moved administratively to Information Services & Technology (IS&T) as of July 1, 2005. This critical development and support group, which has responsibility for the various pieces of the Student Information System, has long lacked sufficient resources for the jobs it was expected to perform. With important changes in the organization and philosophy of IS&T in the past two years, the dean and the vice president for IS&T concluded that in the long run, SSIT would be able to accomplish its goals best by being part of the IS&T Administrative and Student System group.

Robert P. Redwine
Dean
Professor of Physics

More information about the Office of the Dean for Undergraduate Education can be found online at http://web.mit.edu/due/.

Office of Academic Services

Notable changes and new efforts in the Office of Academic Services (OAS) in AY2005 focused on building collaborations across numerous offices and on expanding the availability and delivery of academic information and data, thus enhancing advising and mentoring for our students.

Examples of collaboration include providing information and training to various advisors and mentors, such as housemasters and Department of Athletics, Physical Education, and Recreation (DAPER) coaches and staff. As a result, the network of advisors and mentors able to support our students, particularly freshmen, has been expanded. OAS collaborated with other DUE offices to improve both information content and use of technology. One salient example is the review and report on SSIT, involving DUE, the Office of the Dean for Student Life (DSL), and IS&T. Another is the piloting and implementing of revised forms for the Institute-wide Subject Evaluation process and our participation in Sakai, a university consortium, to develop an online evaluation instrument.

A second theme is the increased availability and delivery of academic information, including the introduction of U-Info, which provides a single point of entry to academic information for students and their advisors. In addition, the enhanced first-year site provides information and advice for freshman, advisors, and others. The increase in information for and data about students, particularly freshmen, has resulted in improved capacity for advising and development of supportive academic programming.

Another OAS highlight was the recent announcement that Farhan Merali '05 has been named a Jack Kent Cooke Graduate Scholarship winner. This program, only recently a national scholarship program available to MIT students through OAS, already has become known as highly competitive and prestigious.

We do wish to note with concern a recent trend in the faculty funding of the Undergraduate Research Opportunities Program (UROP). Over the past few years, faculty expenditures in support of UROP students have decreased significantly. There has been a slight increase in monies distributed through the Academic Resource Center (ARC)/UROP Office from annual gifts and endowment income.

In providing these services in support of MIT's academic mission, OAS is organized into three working groups: Academic Information and Communication (AIC), ARC, and Faculty and Alumni Support (FAS).

Academic Information and Communication

AIC collaborates with others in DUE to ensure the accuracy of academic information and to improve its delivery using technology, primarily web based. AIC also supports the technology that underlies many of the programs offered throughout OAS.

New Initiatives

- The new website U-Info, http://web.mit.edu/uinfo/, a gateway to academic information for undergraduates and their advisors, was introduced. It now has 165 pages of content and is linked from the top MIT pages and from WebSIS.
- AIC worked with FAS and the DUE Office of Special Projects to expand the new Scholarships and Fellowships website, http://web.mit.edu/scholarships/, which now features 18 scholarships and will continue to grow.
- AIC also worked closely with FAS to introduce a new Subject Evaluation form for Humanities, Arts, and Social Sciences. Analysis was completed of last year's testing of the new Science and Engineering form, and that form was implemented for use Institute-wide. A new web report generation option was added to the Subject Evaluation system.
- A staff member served on the SSIT Advisory Group and was instrumental in gathering and analyzing information and writing the group's final report, which described the condition of the Student Information System, identified unmet IT needs in DUE and the Office of the Dean for Student Life, and documented the lack of necessary resources.
- Through the SSIT Advisory Group, AIC staff raised awareness of the need for support for FileMaker systems housing critical functions and sensitive data.

Consequently, the director of IS&T created the Department Database Application Development Project.

- An AIC staff member served on the project team and provided FileMaker expertise to the Information Technology Architecture Group's effort to draft a position paper on FileMaker, which resulted in recommending new database development and support services from IS&T.
- A staff member initiated discussions with the Committee on Student Information Policy about data privacy procedures used in outsourcing IT projects. This led to the establishment of new guidelines, procedures, and contractual legal language.
- A staff member led the Institute-wide Content Management System Project, which completed its final report, recommending three products, two of which are now in pilot stage.

Functional Enhancements

- AIC is managing the migration of the office's FileMaker databases to FileMaker 7. This year a migration plan was developed for all systems, and the first project, upgrading the database for the Committee on the Academic Performance, was completed.
- A needs analysis was conducted for the first-year database, and a needs analysis was begun for Subject Evaluation.
- Additional reporting capabilities on 5th-week performance were added to the first-year database.

Academic Resource Center

ARC provides high-quality, student-centered services to all undergraduates, especially to freshmen, to significantly enhance their academic success, social adjustment, and assimilation to the Institute while recognizing the many needs, diversity, and uniqueness of students at MIT. This office is responsible for freshman programming, including advanced placement/transfer credit processing, orientation, academic advising, choice of major, learning strategies, and other academic support. Additionally, ARC manages, operates, and oversees UROP, coordinates the Independent Activities Period (IAP), and provides staff support to the Committee on Academic Performance (CAP).

New Initiatives

- ARC staff are collaborating with SSIT on a new system that will allow students to submit UROP research proposals via a web interface. Most faculty and departmental administrators will have access to this system and will be able to review student proposals prior to final ARC review.
- A graduate student intern was hired to review ARC programs and resources and determine how we can better prepare MIT freshmen as they begin to transition to the sophomore year. Efforts included development of new web content offering information and advice on sophomore transition, development of freshman advisor training materials, and a personal data form passed to the sophomore year advisor.

- With MIT Medical, MIT Police, and the Office of Student Conduct, ARC submitted a proposal to the US Department of Justice requesting support of the MIT Violence Education, Prevention, and Response Project. In addition to the Orientation rape awareness program, we have proposed to implement new programs and training to address aggressive, harassing, and stalking behavior against students.
- In collaboration with DAPER, ARC developed an academic resource program for presentation to each team; trained coaches in the 5th-week flag process and appropriate response/resources; notified coaches of flagged freshman athletes; and identified and developed a cadre of associate advisors to be mentors for these teams. In AY2005 we went from the test case of one sport to include faculty coaches representing 11 sports.
- In response to 5th-week flag data, tutors were hired who offered study sessions two evenings prior to all math/science quizzes. Thirty-six sessions were offered; attendance ranged from 10 to 50 students, depending on the subject.

Functional Enhancements

- We further enhanced the freshman database that provides data and reports on all subpopulations ARC tracks, improving our ability to develop intervention strategies and programming to ensure end-of-term success. Faculty and administrators in other areas (Admissions, housemasters, DAPER, Learning Communities, F/ASIP, ROTC) were trained in resources and intervention. Data from flags for their students are being provided to them for their discretionary intervention/support to help freshmen utilize appropriate resources.
- ARC enhanced and expanded the capabilities of the CAP FileMaker database. The new database condenses into a single screen all CAP actions and history on an individual student and includes "real-time" updates of nonstatic student data directly from the Data Warehouse.
- We continued to offer a comprehensive professional development program for freshman advisors, including special workshops for new advisors. Fifty-nine faculty or teaching staff and 131 administrators advised 1,089 freshmen; for the Class of 2008, this included offering 70 freshman advising seminars.
- ARC completed the 5th year of the Residence-Based Advising Program for all freshmen living in McCormick and Next House, with 228 students participating.
- During IAP, 675 approved noncredit activities and 89 for-credit subjects were offered. Thirty-two academic departments, 64 Association of Student Activities–recognized student groups, and 11 nonstudent groups sponsored activities or subjects.
- Trained housemasters representing seven undergraduate residences in the 5th-week flag process provided information on available resources, appropriate intervention response, and notified the individual housemasters of their flagged residents.
- The ARC Student Advisory Board (ARCSAB) worked with staff to create an annual calendar of events, provided content for The Associate Link newsletter, served on UROP panels, assisted with the Choice of Major Fair, and participated in usability testing for our websites. Example programs designed by the board

included "No Flip Flops Allowed: Preparing for Winter at MIT!" and "Choosing a Major: Finding the Right Path for You." These freshmen programs were very successful, with high attendance and excellent feedback from students.

- To facilitate freshman exploration, ARC organized a department-wide fall Choice of Major Fair; Class '59 Luncheon featuring four alumni; programming with the ARCSAB ("Choosing a Major: Finding the Right Path for You"); and residential Choice of Major fairs in Burton-Connor, New House, McCormick Hall, and Next House with associate advisors. ARC expanded the coordination and communication of department open houses via the first-year website and a weekly email.
- Nine freshman preorientation programs (FPOPs) were offered in AY2005. A total of 437 first-year students applied, and 377 were placed in an FPOP. The four academic programs—Mechanical Engineering, Civil and Environmental Engineering, Ocean Engineering, and Nuclear Engineering—were substantially oversubscribed.

UROP Activities

- During summer 2004, a total of 868 students participated in UROP; 97% of the research was conducted for pay, 1% for credit, and 2% on a voluntary basis.
- In AY2005, 1,545 undergraduates participated in UROP; 56% of the research was conducted for pay, 42% for credit, and 2% on a voluntary basis.
- During summer 2004 and AY2005, 45% of the students were female and 55% male. While nonunderrepresented minority participation was 39%, underrepresented minority participation was 23%. Almost 25% of first-year students participated in UROP during the year or the following summer.

UROP Funding Allocations

	Summer 2003 & AY2003	Summer 2004 & AY2004
Faculty allocations	$4,188,715	$3,352,341
UROP Office funding	$1,972,964	$2,092,926

Overall, the total funding of undergraduate research projects decreased from $6,161,679 to $5,445,267. This represents a decrease of 12% and follows a 15.7% decrease in the prior year. Faculty allocations have decreased at a significant rate over the past three years. Funding remains a challenge even while the number of submitted proposals has remained constant.

- UROP's book-value endowment is $10.5M. Several new endowments were established this year: the Jordan Baruch '47, Cathy Comeau '87 Memorial, Roger Roseman '66, Jacqueline Schonholtz '87 Memorial, Todd Allen Smith '74, and New Horizon UROP funds. ARC will continue to work with and support the efforts of the Fund Development staff to identify new sources of financial support for UROP.

- UROP's IAP Research Mentor Program continues to be a highly effective means of preparing freshmen for UROPs. Twenty-seven experienced UROP students and a faculty member provided guidance to 64 freshmen while working on their ongoing research.

Faculty and Alumni Support

FAS provides services to support educational initiatives of faculty and to draw alumni into the education of our students. It also works closely with AIC to provide academic information to support educational efforts.

New Initiatives

- FAS led the team to revise Science/Engineering and Humanities, Arts, and Social Sciences Subject Evaluation forms to focus more on teaching and learning metrics. A number of OAS staff were instrumental in piloting and implementing these forms this year.
- An FAS staff member is serving as MIT's content expert in working with Sakai to develop an online Subject Evaluation instrument able to meet MIT's future needs.
- Following discussion with the History Office, FAS agreed to coordinate administrative functions for the Harry S. Truman Scholarship.
- FAS assumed further responsibility for supporting the growing Service Learning program in the areas of finances, budgeting, and donor support.

Functional Enhancements

- FAS worked with AIC, the Office of Special Projects, and the Graduate Students Office to develop standard wording, templates, and content for the Scholarships and Fellowships website information.
- FAS managed the alumni-sponsored funding process for DUE and the Classes of 1951, 1955, 1972, and 1999. Three times as many proposals were submitted as three years ago, and approximately $180,000 was awarded in support of undergraduate education and teaching.
- Staff members provided administrative support and oversight to a number of scholarship and fellowship programs. This year an MIT student was chosen as a Jack Kent Cooke scholar, a new and highly competitive award.

Staffing Changes

Two new hires occurred in AY2005. Matthew E. Davis was hired as support staff for AIC. André Dixon was hired as support staff for UROP/CAP in ARC. Andre's hire increases the diversity of the office to include three staff self-identifying as underrepresented minorities.

J. Kim Vandiver
Dean for Undergraduate Research
Professor of Mechanical and Ocean Engineering

More information about the Office of Academic Services can be found online at http://web.mit.edu.acserv/.

Admissions Office

The goal of the Admissions Office is to identify, recruit, select, and enroll the best students in science, engineering, and technology in the world. We admit all undergraduate students (freshmen and transfers) and serve as a clearinghouse for graduate application paperwork. We work closely with the Student Financial Services Office, the Academic Resource Center, the Registrar's Office, the President's Office, the Alumni Association, the Office of Minority Education, and the Committee on Undergraduate Admissions and Financial Aid at various times throughout the year, and with other offices reporting to the dean for undergraduate education, the Office of the Dean for Student Life, the Department of Facilities, and academic departments during Campus Preview Weekend.

Accomplishments

We had 10,442 freshman applicants, a decrease of less than 1% over last year. Our applications have been leveling off for five years now. This is primarily due to a major trend seen here and at other schools as well: a continued decline in interest in computer science. International applications have reversed their decline and increased 2% this year. We anticipated a slight increase in our yield this year and admitted a lower percentage of applicants than ever. We admitted 1,495 students (14% of the applicant pool) to enroll a freshman class of 990. It appears that we had an even higher yield than anticipated (67%, up from 65% last year), so we will enroll between 990 and 1,000 freshmen. We admitted 10 transfer students and expect to enroll 9 of them.

Diversity in the incoming class is strong. As self-reported,

- 14% are underrepresented minorities
- 24% are Asian Americans
- 39% are Caucasian
- 10% are international, representing 61 countries
- 46% are women

Campus Preview Weekend (CPW) was large and successful. A record 57% of admitted prefrosh attended (848), accompanied by 685 parents. Overall yield of the participants of CPW was 77%.

In September 2004, the MIT Admissions Office launched an extensive web portal designed specifically for high school students who are interested in learning more about MIT. Called MyMIT, the portal serves as a dynamic bridge between the Institute and prospective MIT students. It transcends standard viewbooks and other print materials by taking full advantage of the web by allowing the Admissions Office to interact with users and address their specific questions, preferences, and needs. The portal has allowed prospective students to actually join the MIT community. MyMIT plugs applicants into the daily adventures of 10 MIT students and three admissions and financial aid staff members, offering snapshots of student life, discoveries and research, classes, clubs, events, and everything in between. Applicants can get tips and advice on the application process and then apply online and track their applications. Led by the communications manager (a position created last year to oversee the portal),

the Admissions staff worked hard this year to assemble a team of talented student writers who now serve as the "front line" for MyMIT. This "primary source" approach has established a high level of trust with the target audience, while simultaneously delivering the correct messages about MIT's culture and ideals. The response has been overwhelming. Traffic to the site has been consistently high, and communities that formed online through MyMIT were prevalent "in real life" at CPW, no doubt affecting yield. With the inevitable challenges of launching a new site now behind us, we look forward to an even stronger communications performance in the coming cycle.

The Educational Council is growing. Some 8% more alumni were appointed as educational counselors (ECs) in the past year, for a record 2,326 currently serving; 29% of these are women; 5% are underrepresented minorities. ECs interviewed 70% of eligible freshman applicants and sponsored 57 receptions for admitted students.

Staffing Changes

The Admissions Office is made up of 14 administrative and 20 support staff, consisting of 20 females and 9 males. Of these, 21 are Caucasian, 3 are African American, 3 are Asian, 2 are Hispanic male, and 1 is Hispanic female.

Marilee Jones
Dean of Admissions

More information about the Admissions Office can be found online at http://web.mit.edu/admissions/.

MIT Careers Office

The mission of the MIT Careers Office (MITCO) is two-fold: (1) to support students' career preparation, helping them develop the self-understanding, skills, life experience, and confidence to reach their goals, and (2) to assist employers and graduate schools wishing to attract MIT students and alumni. The Careers Office provides counseling, self-assessment, career workshops, panels and symposia, recruiting, preprofessional advising, PhD transition groups, internships, and other experiential learning and coaching in job search skills and strategies. These resources help students transition from university to professional life.

The Task Force on Student Life and Learning report states that "The leaders of tomorrow will be technically proficient, but they will also work well with others, adapt quickly to organizational and technological change, and understand the needs of the communities in which they work and live." Part of the educational vision of the Careers Office is to help students see the importance of this broader skill set, find opportunities to develop it, and start to clarify goals early in their MIT career. We do this by (1) creating venues for students to interact with alumni, employers, graduate program representatives, and peers; (2) encouraging and facilitating real-world experiences that enable them to benefit from formal and informal mentorship; and (3) helping them identify potential applications of their values, skills, and interests.

Accomplishments

We increased the visibility of our programs, which resulted in a rise in student usage for the fifth consecutive year. Sixty-two percent of student visits were by undergraduates and 38% were by graduate students. Appointments (including walk-ins and 43 undesignated appointments) increased by 17% (to 3,758) in FY2005. Walk-ins (1,237) increased by 5%, while counseling sessions (2,521) increased by nearly 33%. Of 1,979 undergraduate visits (up 22% since FY2004), 469 were by freshmen, 416 by sophomores, 470 by juniors, and 624 by seniors. Of 1,225 graduate student visits (a 26% increase over FY2004), 682 were by masters (a 23% increase over FY2004) and 541 were by doctoral candidates (a 29% increase over FY2004). We had 92 visits by postdocs, 357 visits by alumni (21% fewer than last year, which correlates with economic recovery), and 54 visits by MIT employees and others. The amount of email advising we provided in April, May, and June 2005—2,000 instances—provides a snapshot of the impact of this activity.

We coordinated recruiting visits by 474 employers, 7.24% more than last year. The number of resumes submitted (32,588) decreased by 9.6%, while the number of interviews (6,941) increased by 9.3%. (Two possible explanations are that students are focusing their searches more effectively and employers are adjusting their requirements to better match the applicant pool.) Financial services (18.33%), consulting (14.2%), investment banking (9%), and computers (9%) accounted for 50%, and biotech and pharmaceutical firms accounted for 5% of recruiters.

We raised $58,000 in new revenue from employer fees for on-campus recruiting, closing a gap in revenue lost since 1998. This new fee has had minimal effect on employer presence at MIT.

With a new team in place, MITCO redefined the scope of services, structure, and operations of the Employer Relations area. We introduced an online system that enables employers to request their own dates, rather than require phone conversations with staff. Using our existing headcount, we created a technical assistant position to provide in-house technical support for on-campus recruiting and other key functions. We also established a local Employer Relations networking group to benchmark with other schools, create a forum for new ideas, and share problem solving and best practices. We are reevaluating our front desk protocol and procedures to improve customer support.

We enhanced programmatic support of Career Week and worked with Career Fair and Science & Engineering Business Club leaders to define and launch new collaboration among student groups. As a result, 50 percent more finance and consulting employers attended the 2004 Career Fair.

We designed and administered several new surveys and a new approach to our annual Graduating Student Survey, enabling us to assess our services and inform stakeholders of learning outcomes and other results. Findings attest to value added in many areas, including graduate student services, the Freshman/Alumni Summer Internship Program (F/ASIP), Prehealth Advising, on-campus recruiting, and employer/alumni events.

The office worked with IS&T to develop and administer our online Graduating Student Survey, resulting in improved accuracy, robustness of the data set, and consistency with Institute survey protocols (the survey was previously administered in-house; in recent years, it has had support from an outside consultant). We substantially rewrote questions to provide better information on demographics, satisfaction with services, success factors, and so on. As of June 30, 2005, with a 66% response rate (1,434 students), 39% of undergraduates had made plans to work, 44% planned to attend graduate school, and 17% reported that they would travel, take time off, get a second bachelor's degree, do public service, or were finalizing plans. We anticipate matching or exceeding last year's response rate of 74% when the 2005 process ends in August. The 2005 survey report will be available on our website this fall.

We implemented new efforts to make MITCO more visible, especially to freshmen and early-stage graduate students. Working with the Publishing Services Bureau, we created and rolled out our first departmental logo and branding effort. We also optimized CPW to introduce MIT Careers Office to several hundred prefrosh and their parents at a departmental open house and F/ASIP and Prehealth Advising presentations. We collaborated with the Graduate Students Office, the Graduate Student Council, (GSC) and academic departments on early outreach to graduate students at orientation.

The office undertook extensive team-based strategic planning and benchmarking with peer schools as part of the Institute's five-year strategic planning process. This has led to plans for new events and procedures, including Freshmen/Sophomore Career Week in spring 2006 and a card-swipe system to replace a manual tracking system.

We promoted alumni engagement with MIT to serve both student and alumni career development; engaged alums in MITCO career programs; worked with an MIT alumnus and the Development Office to create and get support for a midcareer alumni demo project; presented our services to the NYC Alumni Club; and worked with the local Alumni Club to plan the first regional Ivy+ Alumni Career Fair, to be hosted by MIT in April 2006.

Assistant director Hannah Bernstein worked with Dean Peggy Enders to prepare for the transition of study abroad activities. The function of advising undergraduates about non–MIT-affiliated study abroad will move to Dean Enders' office this fall, centralizing advice about both MIT and non–MIT-affiliated study abroad and making it more visible. In AY2005, MITCO provided administrative support for 26 undergraduates to study at non–MIT-affiliated schools.

In its 8th year, F/ASIP (SP.800/SP.801) improved retention, placement success, and learning outcomes. Eighty percent of freshmen who completed the first half of F/ASIP found internships in their chosen fields, including computer science, finance, biotech, research/lab work, and teaching overseas. Retention was up 10% (77 students), partly as a result of spreading seminars throughout the year so students had more time to adjust to MIT. F/ASIP enabled 100 freshmen to develop the interpersonal and professional skills needed to find and succeed in summer internships and paired them with alumni mentors at their internship sites.

MITCO implemented the Alumni Mentor program, which matched upperclass students who completed and excelled in F/ASIP with a small group of current students to provide an additional layer of mentoring to freshmen. The office piloted the Workplace Dynamics seminar, which provided early exposure to issues surrounding communication, negotiation, teamwork, and leadership. These relationships and life skills were beneficial not only in the internship search but also in helping freshmen transition to MIT.

We provided support to 158 MIT applicants to medical school (67 undergraduates, 4 graduate students, 79 alumni, and 8 nondegree applicants), culminating in acceptance rates of 82% for undergraduates, 100% for graduate students, and 71% for alumni (the national acceptance rate for all applicants was 49%). The average GPA for accepted undergraduates was 3.77/4.0 and the average MCAT score was 35.08. A total of 132 MIT candidates (17% seniors) applied to law school (up from 110 last year), and 76% were admitted. The average GPA for all accepted MIT applicants to law school was 3.28/4.0, and their average LSAT score was 164.

We recruited seven new underrepresented Prehealth advisors for our large female and growing minority Prehealth cohorts through outreach to MIT and Boston medical communities and local alumni practitioners. This helped offset attrition due to the new policy restricting advisors from serving as both admissions committee members and Prehealth advisors.

We saved significant time and money and raised revenue by increasing the use of our Premedical Credential Service (up 12% to 140 applicants.) Electronic transmission of recommendation packets rose to 67%, and DHL mailings dropped from 41% to 32%.

We launched a centralized, online MITCO calendar that enables us to market externally (to students, staff, and the MIT community) and to be aware internally of learning opportunities available through programs and events of other MITCO staff.

We presented graduate student career programs and services that drew high numbers of graduate students interested in nonacademic and academic careers. Graduate student participation in both workshop/special events (up 36% to 1993) and office visits (up 26%) accounted for most of MITCO's increased usage this year. There was sustained interest in established programs, and we added a new program on preparing for academic interviews. Many of our graduate student programs are offered at the department level and are tailored to the needs of specific groups. Benchmarking with peer institutions identified MIT's graduate and postdoc career services as an area of relative strength nationally. The Graduate Student Career Development Team participated in GSC-sponsored focus groups of faculty, students, and administrators on advisor-advisee relations related to career advising.

We developed resources for students interested in environmental and energy careers, working with the Laboratory for Energy and the Environment. We also created a new IAP alumni panel, an environmental careers website, and other resources.

Finally, MITCO contributed to Institute initiatives. Deborah Liverman served on the MLK King Breakfast Planning Committee and, with the School of Engineering, presented a career workshop to 100 minority high school students at the National Society of Black Engineers National Conference. John Nonnamaker worked with an Institute team evaluating MIT survey processes. The Graduate Student Team and MITCO director participated in the dean for graduate students' Collaborative Network. Elizabeth Reed served on the Committee on Discipline and the Council on Family and Work and will participate in the search committee for a new dean for undergraduate education. Three staff were freshman advisors. Staff also engaged in many outside professional and community service activities at the local and national levels.

Staffing Changes

An internal promotion and four new colleagues fortified an already excellent staff. John Nonnamaker was promoted to associate director for graduate student career development. Our diversity fellow, Malaika Silcott, was hired as career development counselor, replacing Saqi Ghosh, who went to work for MonsterTrak. In October, we hired Robert Richard as associate director to lead Employer Relations. Melissa Ackerman joined us in June as coordinator of On-Campus Recruiting. She replaces Carole Ferrari, who retired in March after 16 years of dedicated service. Bill Rivers has added critically needed expertise as our technical assistant since October.

Elizabeth Reed
Director

More information about the MIT Careers Office can be found online at http://web.mit.edu/career/www/.

Edgerton Center

The mission of the Edgerton Center is to uphold the legacy of Harold "Doc" Edgerton by

- Promoting hands-on learning, including sponsoring student technical competition teams, offering service learning classes, and supporting inventors
- Maintaining MIT's expertise in high-speed and scientific photography
- Building ties to the broader community through our K–12 educational outreach program

This past fall, staff member Amy Smith was named a 2004 MacArthur fellow. The MacArthur Foundation cited her work as "an inventor and teacher dedicated to developing technologies that optimize limited resources and solve seemingly intractable problems in developing countries." This also describes the thrust of the International Development Initiative (IDI), a collaborative Service Learning program of the Edgerton Center and the Public Service Center.

This past year the director, Professor J. Kim Vandiver, and Professor Eric Klopfer, the director of the Teacher Education Program, were encouraged by President Hockfield

to bring together representatives of the MIT community who provide K–12 outreach programs. The purpose was to look for opportunities to coordinate MIT's efforts in providing resources and support to the K–12 community. The response to the call was quite remarkable: more than 35 representatives of departments, labs, and centers with K–12 outreach programs gathered for the very first meeting. Resulting activities are described more fully in the section on Outreach.

International Development Initiative

In collaboration with the Public Service Center, we support a range of international development activities that are carried out by our faculty and students. We have developed a year-round sequence of opportunities for our students and staff to engage in the following humanitarian engineering projects:

- D-Lab classes
- Grants to faculty
- Fellowships to students
- IDEAS competition

These four activities provide a variety of options for our students to engage in projects in developing countries. This past year, approximately 100 students and staff traveled to nine different developing countries to work on projects. Both IAP and summer are popular times for staff and student travel. A few facts about two of these programs follow.

D-Lab (http://web.mit.edu/d-lab) is a sequence of subjects that educates MIT students about the technical challenges faced by communities in the developing world and provides our students with an opportunity to use their engineering skills to make a positive contribution to these communities. D-Lab has an annual cycle with four components:

- A fall subject in which students learn about international development and appropriate technology through case studies and guest speakers. They form country-specific teams to study the culture and language.
- A field trip during IAP to identify technical problems that are faced by communities in the target country.
- A spring term design seminar in which students develop solutions to the problems identified during the IAP field trip.
- An extended trip back to the country over the summer to implement and test the solutions developed in the design classes.

The MIT IDEAS Competition (a joint project with the Public Service Center) encourages MIT students to work in teams to develop and implement projects that make a positive change in the world. Entries are judged by a panel of experts who focus on the innovation, feasibility, and community impact of the projects. The IDEAS staff provide feedback, assign mentors, and give project development grants to all viable teams. Winning teams receive awards of $2,000–$5,000 to further develop and implement their projects and are supported by an intensive project-planning retreat and ongoing consultation with the IDEAS staff.

In this 4th year of the competition, 15 teams submitted final proposals, and $24,000 of prize money was awarded to 8 teams. The winning projects included a remote-controlled robot for performing minimally invasive lung biopsies, a pedal-powered washing machine for communities that lack electricity, a refrigerated backpack for transporting vaccines in remote communities of developing countries, and an internet medical triaging system for India.

This year, IDEAS also initiated an annual conference for the organizers of community service and social entrepreneurship competitions around the world.

K–12 Educational Outreach

Our Outreach Program continues to be a window onto MIT for local school children, with 896 Cambridge Public School students (50 groups from 4th through 8th grade classrooms) visiting the center during the 2004–2005 school year to conduct hands-on science activities. We also provide these activities to other community groups (other schools, scout groups, home-school groups, etc.). For the previous academic year, activities offered to non-Cambridge groups brought in another 1,043 students for a total of 1,939 students (K–12) performing hands-on science activities at MIT. Since its inception over seven years ago, the Edgerton Center Outreach Program has provided free programming at MIT for over 11,600 children and teachers from the greater Boston area. The Outreach Program is partially supported by the Center for Environmental Health Sciences. In turn, we provide a portion of the outreach programming that their grant requires.

The Outreach Program continues to partner with the Center for Materials Science and Engineering to provide two weeks of science day camps each summer.

The Edgerton Center hosts the engineering design component of the Minority Introduction to Engineering, Entrepreneurship, and Science (MITE^{2}S) program and hosts the Saturday enrichment program for high school students known as the SEED Academy.

The Edgerton Center has recently been an integral part of the formation of an Institute-wide consortium of K–12 Educational Outreach providers. This group, comprised of more than 35 outreach programs spanning nearly all departments, as well as many centers and laboratories, has been meeting since January 2005. These meetings have been an effort to better inform the community, both local and national, and ourselves of the wide variety and depth of our offerings. An online listing has been created of those groups participating, and a searchable database of programming is due to be completed by September 2005. This group was asked to be part of the new MIT president's inaugural week celebrations, and approximately 20 of the member group/programs presented their programs in a K–12 midway at the Stata Center. The group has begun discussions with the headmaster of the John D. O'Bryant School in Roxbury. We hope to elevate the school's role as a math/science exam school.

Academic Offerings

The Strobe Project Lab (6.163) continues to be heavily oversubscribed, and our other regular offerings in electronics, robotics, and digital imaging are also popular: 6.070/SP.705 Electronics Project Lab, SP.747 Creative Imaging, and SP.702 Intro to Digital Electronics (formerly 6.S28) are long-term favorites that are regularly oversubscribed. Our staff oversaw two advanced undergraduate projects for Electrical Engineering and Computer Science students.

Service Learning classes at the Edgerton Center, another joint project with the Public Service Center, is in its 4th year. Service Learning classes are now available in many departments across campus. In the spring of 2005, the Edgerton Center offered eight subjects with public service goals to 60 students. These subjects included D-Lab and the Public Service Design seminars.

Technical Imaging

The center is still the Institute's go-to place for high-speed imaging. Our high-speed video systems were used by seven research groups and several Institute subjects over the past year. In 2005 our weeklong summer short course, 6.51s High-Speed Imaging, hosted 22 attendees from government, academia, and industry.

We have, in collaboration with DAPER, completed a d'Arbeloff-funded project, High-Speed Imaging for Physical Education (PE), which enables active learning opportunities for PE instructors, students, coaches, and athletes. The main objective of this work is to engage MIT undergraduates with a PE learning opportunity that is both exciting and more closely integrated into the academic mainstream. An additional objective of our proposal is to forge links between DAPER and the academic programs of the Institute.

Student Shop and Hands-on Resources for MIT students

The Edgerton Center Student Shop is located in Building 44, across from the Electrical Engineering and Computer Sciences buildings on Vassar Street. The shop is an important resource to MIT graduate and undergraduate students. Students can receive training at the shop and, once trained, are able to use the shop resources for independent projects. The shop is open until 8 PM four evenings a week and on Saturday afternoon (for a total of 56 hours of operation per week). With an annual grant to the shop from the Lemelson endowment funds, we continue to upgrade the its capital equipment.

Approximately 7,000 student hours are logged in the shop each year. These students typically represent 16 departments and programs from the schools of Engineering, Science, Architecture and Planning, and the Health Sciences and Technology program.

Support for Student Clubs and Teams

The Stratford Foundation has offered generous financial support to greatly expand the center's ability to support student-initiated hands-on projects. Over the last year we have increased from 12 to 19 clubs and teams. We provide centralized institutional recognition and support for these teams, financial support, access to a pool of common tools and resources, and space to carry out their work. We operate a club work space in

E60 and provide a garage shop for the Solar Electric Vehicle Team and the Formula SAE team.

Staff Changes

Fred Cote, the shop manager since it opened its door in the spring of 1998, is retiring on July 8, 2005. The Institute presented Fred with the James N. Murphy Award in recognition of his dedication to helping MIT students. We send him our best wishes for a long and happy retirement.

We are pleased to announce that Mr. Stephen Banzaert has joined our staff as a part-time instructor. An MIT alum, Steve's duties include administering and assisting in teaching the Public Service Design seminars and assisting in the supervision of the clubs and teams. Alan Armstrong, Kurt Kornbluth, and Andrew Heafitz have also joined the staff as part-time instructors. Kurt and Alan work with the IDI program. Andrew teaches the Humanitarian Demining subject and is an instructor at the student shop.

J. Kim Vandiver
Director
Professor of Mechanical and Ocean Engineering
Dean for Undergraduate Research

More information about the Edgerton Center can be found online at http://web.mit.edu/edgerton/main/html.

Office of Minority Education

The mission of the Office of Minority Education (OME) is to provide effective academic enrichment programs to enhance matriculation, promote higher retention and greater excellence in underrepresented minority (African American, Mexican American, Puerto Rican, and Native American) students' academic and general educational achievements, and to encourage their pursuits of higher degrees and professional careers. OME supports MIT's academic mission of providing the best possible education for all students and serving the nation's need to have underrepresented or underserved students in science and engineering fields pursue higher education and success in these fields.

This year, OME continued to provide underrepresented minority students with a cadre of academic enrichment programs designed to enhance their opportunities to succeed at MIT. The staff of OME continues to heighten their visibility, accessibility, and increase the quality of services offered to the underrepresented students. OME staff participated in an array of Institute committees, programs, and other initiatives during AY2005.

Project Interphase

Project Interphase is one of MIT's major commitments to students of a variety of ethnic backgrounds to ensure their academic and social success at MIT. Project Interphase is a rigorous eight-week residential, academic enrichment, confidence- and community-

building program for admitted freshmen who will benefit from support in their transition to MIT. As students gain experience in self-reliance and time management, they also make friends and become better oriented to MIT. Project Interphase is designed to provide academic support, build confidence, enhance matriculation, and promote success in participants. This year's academic staff of tenured faculty and instructors, with the assistance of graduate and undergraduate students, made up the teaching core of Project Interphase. Faculty and tutors are major contributors in preparing students to face the rigors of MIT. Through teaching, advising, and serving as mentors, they fulfill an invaluable role in the intellectual development of the program participants. Project Interphase alumni represent a high percentage of the tutor core for the academic component of the program. The academic metric for Project Interphase focuses on how many students receive advance placement for calculus and how many of the participants receive academic warnings in the first year. A number of students were successful in receiving advanced placement credits for 18.01. We still see a small cohort of students who receive warnings during the fall term.

Seminar XL

This year Seminar XL continued to be an effective academic enrichment program for first-year underrepresented minority and nonminority students. Participants who enrolled in the program were divided into small interactive study groups that covered calculus, physics, chemistry, and other freshmen core courses. These groups met twice a week for 1.5 hours during the fall and spring terms. All study groups were coordinated by XL facilitators who are current upperclass and graduate students. In fall 2004 we offered seminars in 8.01T, 5.111, and 18.012A. In spring 2005 we offered seminars in 3.091, 8.02, and 18.02, serving a total of 36 students. Facilitators oversee the interactive discussion of course material covered in the respective subjects of calculus, physics, chemistry, and computer science.

Tutorial Services Room

OME's Tutorial Services Room (TSR) continued to provide effective academic support to a broad range of underrepresented minority and nonminority students. TSR is managed by a select group of upperclass students who receive close supervision from the associate dean/interim director. OME employed over 50 tutors from an array of ethnic backgrounds and disciplines to tutor in over 40 subjects. The associate dean/interim director interviewed, hired, and trained tutors and staff for the program. This year, tutors conducted tutorial sessions in courses from 15 departments, as well as the core freshmen curriculum for the fall and spring terms. Freshmen remain our most frequent users (67%), as do female users (65%). We modified our hours of operation to meet the increased demand for TSR services. Our old hours of operation were Monday–Thursday from 2:00 to 10:00 PM and Friday–Saturday from 2:00 to 6:00 PM. Our new hours of operation are Monday–Thursday from 12 noon to 10:00 PM and Friday–Sunday from 2:00 to 6:00 PM. TSR provided over 1,000 service hours in AY2005.

Industrial Advisory Council for Minority Education

The purpose of the Industrial Advisory Council for Minority Education (IACME) is to provide a variety of opportunities to participate in the realization of OME's goals. To

that end, members of IACME provided financial support for OME to offer effective academic and professional development programs to assist student organizations such as the American Indian Science and Engineering Society, Mexican American Engineers and Scientists, the National Society of Black Engineers, and the Society of Hispanic Professional Engineers. IACME members supported students' participation in cultural organizations by providing financial support to those organizations that promote improving the quality of life of students of color. During the academic year, IACME supported numerous events covering personal, group, and professional development.

In addition, members of IACME have formed a subcommittee to develop a curriculum for leadership development for minority students in engineering and science. The focus of the committee is to provide a day-and-a-half training module for students who are in leadership roles or for students who have demonstrated leadership potential in their organizations.

Office of Minority Education Student Advisory Council

The Office of Minority Education Student Advisory Council (OMESAC) provides a mechanism for minority students to bring their concerns and issues to the associate dean for undergraduate education and the director of OME. The membership of OMESAC includes 12 student organizations that represent both professional and culturally focused organizations.

Minority Scholarships

OME continues to be a repository of information for internships and scholarships that target underrepresented minority students. Many companies and foundations continue to focus support on underrepresented minority students. Their goal is to continue to provide financial and professional support to increase the number of students of color in the engineering and science professions.

Kim Beamon
Associate Dean and Interim Director

More information about the Office of Minority Education can be found online at http://web.mit.edu/ome/.

Office of the Registrar

The Office of the Registrar promotes the educational goals of MIT by

- Conveying accurate, timely information to the MIT community and beyond and providing services related to enrollment, registration, and graduation
- Implementing and enforcing academic and administrative policies related to the above
- Creating, updating, preserving, and issuing academic records for past and current students and alumni

- Developing and communicating official subject, schedule, and curricular program information
- Managing and maintaining classroom space

In fulfilling its mission, the Office of the Registrar works with the Faculty, Institute/faculty committees, departments, staff, and students to guide and assist in developing and modifying educational policies and procedures in accordance with Institute policy and local, state, and federal laws. The office will continue to gather, maintain, interpret, and share information through new technologies, broadened capacities, and enhanced communications in the areas that the Institute has entrusted to its charge.

Accomplishments

The Institute continued to rely on the Registrar's Office in various and complex ways. The staff worked extremely hard in sustaining educational initiatives and handling exceptions that arose. We continued to exploit the robustness of the MIT Student Information System (MITSIS) in meeting all of the challenges within this dynamic environment.

Technological Highlights

In partnership with Student Services Information Technology (SSIT), we

- Implemented an online degree application, which allows students to easily submit and modify information related to their graduation and participation in Commencement
- Implemented an online degree tracking system, which allows departments to easily verify degree applications and monitor the status of their students
- Implemented an online system to help the Information Center with ticket distribution for Commencement
- Worked with the International Students Office to implement an application on WebSIS for students to report Student and Exchange Visitor Information System (SEVIS) addresses in compliance with US government requirements
- Worked with the associate dean in DSL to set up a Dean-on-Call query from the Data Warehouse

Policy Work

This year, Registrar's Office staff

- Worked with the Computation for Design and Optimization program on the establishment of a new SM degree
- Worked with the Singapore–MIT Alliance in developing rational tuition and degree awarding schemes
- Worked with the Sloan School of Management on tuition, audit, and degree issues in support of their revised Executive program
- Worked with Student Financial Services and SSIT to implement changes in the tracking of student status for final-term undergraduates
- Worked with the Graduate Students Office to redesign the Graduate Student Petition form

- Worked with the Careers Office to write guidelines and design a request form for the dean's certification process
- Worked with MIT lawyers in drafting new contract language that protects student information
- Worked with Student Support Services and the International Students Office on retroactive withdrawal procedures

Operational Highlights

Office staff

- Worked with the Committee on Curricula (COC) to approve 132 new undergraduate subjects (including a new Institute lab subject and 10 communication-intensive HASS subjects). The committee also reviewed and approved 507 substantial changes to existing subjects, 5 Subcommittee on the Communication Requirement (SOCR)–approved communication-intensive major subjects, and 16 communication-intensive HASS subjects
- Worked with the Committee on Graduate School Programs to approve 103 new graduate subjects as well as 527 substantial changes to existing subjects
- Worked with COC to approve a new SB in biological engineering, a new minor in management, a new minor in archeology and materials, the merger of Course 13 and Course 2, and major curriculum changes to Course 1 and Course 24
- Worked with the Reference Publications Office on the feasibility analysis for a CD version of the *MIT Bulletin*
- Scheduled and allocated rooms for approximately 2,400 subjects for both the fall and spring terms
- Developed a schedule plan to address the loss of 18 classrooms as a result of the PDSI project
- Communicated with faculty, staff, and students about a new degree tracking system; all performance measures in introducing these new items to the community were met
- Worked with the Audit Division in review of the Office of the Registrar's functions, including grading, tuition, and registration; the audit report indicated a very clean operation
- Responded to over 1,500 requests for data, including a focused effort to provide the Task Force on Undergraduate Education a range of data and analysis

Classroom Management Highlights

This year, we

- Led the effort for the design documents for the renovation of a new classroom, 26-142 (renovation completed in April 2005)
- Replaced video projectors in 4-231, 4-237, and 10-250
- Shared with the Sloan School of Management the costs of replacing 40 new tablet armchairs for E51-361
- Installed fan coil units for classroom cooling, along with new ceilings, lighting, and lighting control systems in 4-159 and 4-163

- Shared with the Department of Civil and Environmental Engineering the cost of new carpeting in 48-308 and 48-316
- Replaced motorized projection screens in E25-111, E51-345, and 1-190
- Replaced carpeting in 5-233
- Installed a new ceiling and lighting system in 13-1143
- Provided new exam tables for 50-340

Registration

In AY2005, student enrollment was 10,320, compared with 10,340 in AY2004. There were 4,136 undergraduates (4,112 the previous year) and 6,184 graduate students (6,228 the previous year). The international student population was 2,485, representing 7 percent of the undergraduate and 35 percent of the graduate populations. These students were citizens of 110 countries. (Students with permanent residence status are included with US citizens.)

In AY2005 there were 3,601 women students (1,765 undergraduate and 1,836 graduate) at the Institute, compared with 3,537 (1,739 undergraduate and 1,798 graduate) in AY2004. In September 2004, 462 first-year women entered MIT, representing 43 percent of the freshman class of 1,083 students.

In AY2005 there were, as self-reported by students, 2,934 minority students (1,939 undergraduate and 995 graduate) at the Institute, compared with 2,898 (1,961 undergraduate and 937 graduate) in AY2004. Minority students included 366 African Americans (non-Hispanic), 86 Native Americans, 647 Hispanic Americans, and 1,835 Asian Americans. The first-year class entering in September 2004 included 493 minority students, representing 46 percent of the class.

Degrees Awarded

Degrees awarded by the Institute in AY2005 included 1,220 bachelor's degrees, 1,544 master's degrees, 13 engineer's degrees, and 581 doctoral degrees—a total of 3,358 (compared with 3,301 in AY2004).

Personnel Changes

Piero Chacon became a permanent staff member as coordinator, Academic Records Services.

Mary Callahan
Registrar

More information about the Office of the Registrar can be found online at http://web.mit.edu/registrar/.

ROTC Programs

Air Force Reserve Officers Training Corps

The mission of the Air Force Reserve Officers Training Corps (AFROTC) is to produce leaders for the US Air Force and to build better citizens for America.

Year-end Enrollment in AFROTC as of June 2005

	Freshmen	Sophomores	Juniors	Seniors	Total
MIT	7	3	4	9	23
Harvard	2	1	0	1	4
Tufts	1	1	3	0	5
Wellesley	1	0	1	0	2
Total	**11**	**5**	**8**	**10**	**34**

Accomplishments

This was another exceptional year for us, with improvements in overall cadet scores, retention, and morale. We attained our goals with one fewer cadre member and transitioning with a new staff member on board.

We saw a continuing improvement in the quality of our cadet corps. The current enrollment is 34, and we anticipate 50 students in autumn of 2005, including the incoming freshmen class. Our focus continues to be on recruiting high-quality inbound scholarship recipients in the 2008 and 2009 classes. This is a deliberate result of the restrictions in enrollment allocations to the earlier class groups.

Motivation among our cadets and cadre has been superb. In the junior class, four out of four applicants were selected to become either a pilot or navigator. We have 17 cadets involved in US Air Force–sponsored summer activities.

One notable event was the introductory meeting with our new MIT president, Dr. Susan Hockfield. We discussed ROTC initiatives and university support of our efforts. In addition, each of the presidents of the four schools we support attended and spoke at our commissioning ceremonies. We also participated in an award ceremony honoring General John Jumper, the US Air Force chief of staff, during his visit to MIT for the National Security Policy Awards dinner. We also established the Air Force ROTC Alumni Fund to drive alumni funds for up-and-coming retention programs.

We started the new academic year with the second annual cadet wing staff offsite, completing drafts for 19 documents that defined how the wing would operate during the fall term. This allowed them to establish the wing structure and guidelines before the term begins. In September, we also held New Student Orientation at Fort Devens Army Reserve Training area for 11 new recruits. The US Army Reserve provided terrific support; dining and lodging were well done. We were able to use their confidence

course this year and also took advantage of their leadership reaction course and physical training area. In November, we sponsored a Veterans Week Program, starting with a tri-service Prisoner of War/Missing-in-Action (POW/MIA) ceremony and 24-hour vigil on the steps of the MIT student center. We also marched in the Boston Veterans Day Parade. Also in November, we continued our second annual base visit for freshman students to Hanscom Air Force Base, an all-day event with nine active duty speakers, a base tour, and lunch with personnel from the medical and services organizations. In December we had our annual dining-in, with guest speaker Lt Col Scott Henderson, an AF National Securities fellow at MIT. During the spring term, we had several tri-service events with our Army and Navy ROTC counterparts. These included the Tri-Service Military Ball, a field day sports competition, and a pass-in-review and awards ceremony.

Our most popular student events were the base visit in October and guest speaker events throughout the year. In October, we took 19 students to Patrick Air Force Base in Florida, touring the Kennedy Space Center.

Our guest speakers included MIT professors, active duty/retired general officers, and several active duty Air Force fellows and students. Notables were Gen John Jumper, Professor John Deutch (former CIA director), Professor Barry Posen (Ford International professor of political science at MIT), Lt Gen Don Cromer (former commander of the Space Systems Division), Rear Admiral Jacob Shuford (president of the Naval War College), and Brig Gen Richard Hassan (director, Air Force Senior Leader Management Office).

In extracurricular activities, we inducted seven new cadets into the Arnold Air Society and sent one cadet to the annual National Conclave. We also flew 10 sorties in the Flight Orientation Program out of Hanscom AFB, which continues to be a huge hit with the freshmen. We also organized a trip for six cadets and cadre to visit Otis Air National Guard in southern Massachusetts.

We were also successful in involving nearly 40 Air Force Institute of Technology graduate students in our cadet Physical Training sessions—a great motivator for all cadets involved.

Staffing Changes

Staff Sergeant Andrew Sparks replaced Technical Sergeant Ricard, who accepted an assignment at Fort Meade.

Lt Col Timothy Slauenwhite from Air Force Space Command will replace Col Paul Rojko, who will retire this summer.

Colonel Paul Rojko
United States Air Force

More information about the Air Force ROTC program can be found online at http://web.mit.edu/afrotc/www/.

Army Reserve Officers Training Corps

The mission of the Army Reserve Officers Training Corps (AROTC) is to develop, train, and commission the future officer leadership for our US Army by providing instruction and training in military science subjects with a focus on leadership development.

We commissioned 10 officers this year. As of May 2005, 45 students were enrolled in the AROTC program. Of those, 18 are minority (40%) and 13 are women (29%).

Enrollment in AROTC as of May 2005

	Freshmen	Sophomores	Juniors	Seniors	Total
MIT	5	2	1	2	10
Harvard	5	2	4	4	15
Wellesley	1	0	2	1	4
Tufts	0	3	2	2	7
Other	5	2	2	0	9
Total	**16**	**9**	**11**	**9**	**45**

Reorganization

Our higher headquarters recently increased the number of cadre in our department from eight to 10. We are currently interviewing people to fill our vacant positions.

Accomplishments

- Of our graduating seniors, 9 of 12 achieved "best qualified" ratings during summer training, surpassing all other units nationwide.
- Department cadre taught 15.305 Leadership and Management, accredited by the Sloan School of Management for the sixth consecutive year.
- The department head/professor of military science serves as a freshman advisor.
- The department inducted Brig Gen (Retired) Rogers Finch '41, Mr. Lawrence Castro '64, and Col Judith Lemire '81 into the ROTC Hall of Fame.
- Harvard University has made great strides in facilitating student interest and participation in ROTC. President Summers spoke of Harvard's close partnership with MIT during his commissioning address in Harvard Yard.
- We've established close ties with the Institute for Soldier Nanotechnologies (ISN), a nearly $100M US Army/MIT research endeavor to enhance soldier survivability. The MIT student chapter entered MIT's first annual Soldier Design Competition. ISN sponsored this contest to encourage teams of MIT students, staff, and alumni to develop innovative approaches to some of the engineering challenges faced by today's soldiers.
- We've reenergized the MIT student chapter of the Society of American Military Engineers; the student chapter subsequently earned designation as a "distinguished" post.

Individual Cadre Achievements

- Lt Col Baker and Master Sergeant Benjamin Belcher retired this year after more than 20 years of service.

Plans for the Future

- The army assigned four new instructors: Lt Col Leo McGonagle, Capt Eric McKinney, Capt Jason Oberton, and Mr. Norman Michaud.
- The army has increased our mission from 12 commissions per year to 15, with a particular focus on commissioning more officers with math, science, and engineering degrees.
- We've also been tasked to commission two nurses each year from North Shore schools (Endicott and Salem State Colleges) to help fill the critical army-wide nurse shortfall.

Lieutenant Colonel Brian L. Baker
United States Army

More information about the Army ROTC can be found online at http://web.mit.edu/armyrotc/.

Naval Reserve Officers Training Corps

The mission of the Naval Reserve Officers Training Corps (NROTC) program at MIT is "to develop midshipmen mentally, morally, and physically and imbue them with the highest ideals of duty and loyalty, and with the core values of honor, courage and commitment in order to commission college graduates as naval officers who possess a basic professional background, are motivated toward careers in the naval service, and have the potential for future development in mind and character so as to assume the highest responsibilities of command, citizenship, and government."

At MIT, the officers and staff assigned to the Naval Science Department are committed to ensuring that every midshipman balances his or her time and energy to realize the tremendous benefits of an MIT, Harvard, or Tufts education along with the professional development opportunities afforded by the NROTC program.

During the 2004–2005 academic year, 12 midshipmen from MIT, Harvard, and Tufts were commissioned as ensigns and second lieutenants. Program enrollment just prior to June Commencement is presented in the following table.

The Navy's financial assistance for MIT NROTC students totaled $954,800 for the year. We are expecting approximately 20 new freshmen to enter the program this year.

Year-end enrollment in NROTC as of June 2005

	Freshmen	Sophomores	Juniors	Seniors	Total
MIT	8	6	8	8	30
Harvard	1	10	7	3	21
Tufts	0	5	6	1	12
Total	**9**	**21**	**21**	**12**	**63**

Accomplishments

AY2005 was most successful in many regards. Following is a summary of key accomplishments.

During the summer, all scholarship midshipmen participate in active duty training with deployed naval units. Last summer, midshipmen served aboard submarines, maritime patrol aircraft, aircraft carriers, and amphibious assault ships, to name a few. This training provides invaluable experience for their future careers as naval officers.

Instruction was completed in nine naval science courses. These classes are convened at 7:30 AM so as not to interfere with the academic schedules of the host and affiliate universities. These classes are monitored by the visiting professor of naval science at a frequency appropriate to ensure a high quality of instruction. Last year Harvard instituted van transportation to/from our MIT unit for their students; this year Tufts did the same.

The MIT NROTC unit hosted various navy and non-navy guests, including Admiral Gregory Johnson (commander, US Naval Forces Europe and Joint Force Command, Naples), the master chief petty officer of the navy, Terrence D. Scott (the top US Navy enlisted member), and the officers of the Seawolf class submarine USS *Connecticut.*

MIT midshipmen are involved in numerous activities throughout the year. In the fall, an annual formal ball was held to celebrate the birthdays of both the US Navy and Marine Corps. Midshipmen participated in the Veterans Day Parade in Boston and the 24-hour POW/MIA Vigil held each year at MIT. The midshipmen battalion was also active in community service, including cleaning up and painting fences along the Esplanade, supporting the New England Shelter for Homeless Veterans, and hosting a Military Excellence Competition for area navy junior ROTC high schools. Midshipmen participated in military excellence competitions at Villanova, Cornell, George Washington University, and Holy Cross. An annual sailing regatta was held at the MIT sailing pavilion in April, in which NROTC units from the entire East Coast competed. An annual tri-service ball was held in the spring in coordination with the Air Force and Army ROTC. The midshipmen battalion ended the year by hosting the tri-service ROTC Pass-in-Review ceremony on Berry Astroturf Field, where the guest speaker was Rear Admiral John Kelly (commander, Navy Warfare Development Command).

We completed another year of leadership experience gained from participating in a largely self-run organization. The MIT NROTC midshipmen are responsible for handling all the operational, financial, and other core responsibilities that any large organization requires. This provides valuable leadership lessons and tools, which midshipmen also must learn how to pass on as they are rotated through the organization.

Midshipmen utilize their leadership and management skills in ways that have benefited their respective school communities. Midshipmen were teaching assistants for classes, held executive board positions on their school's chapter of national organizations, served in leadership positions within their dormitories and fraternities to build community within their living groups, led bible study and church groups, and played key roles in their school athletic teams, such as soccer, crew, lacrosse, ballroom dance, squash, swimming, basketball, and football.

The culmination of four years of training was reached on June 3, 2005, as eight MIT Naval ROTC students, along with 10 MIT Army and Air Force ROTC cadets, were commissioned as ensigns and 2nd lieutenants in a service alongside the USS *Constitution* at Charlestown Navy Yard. The guest of honor, Brig Gen Richard Hassan (director, Air Force Senior Leader Management Office), gave an inspiring speech to the new officers at the ceremony.

Staffing Changes

Hails

- Our new executive officer, Commander Daniel P. Marshall, reported aboard on May 10, 2005. A naval flight officer by trade, he is from Garden City, MI, and now resides in Cambridge with his wife, Mounika.
- Lt Vanessa Melofchik, a naval flight officer, arrived March 2005 to assume the position of freshman class advisor and to instruct in maritime history.
- Our new marine officer instructor, Capt John F. Griffin, USMC, reported aboard on June 1, 2005. An infantry officer by trade, he is from Quincy, MA, and now resides in Walpole with his wife Jean and their two children, Jack and Abby.

Farewells

- Lt Rob Holmes departed the area in June 2005 to make his transition to civilian employment.
- Major Erik Kobs departs the area in August to attend the Naval Warfare College in Newport, RI.
- Our executive officer, Commander Gary Smilowitz, retired after completing 20 years of honorable service to our navy.

Captain Robert D. Holland
United States Navy

More information about the Naval ROTC can be found online at http://navyrotc.mit.edu/.

Special Projects Office

The Special Projects Office assists with the development of DUE initiatives and supports a number of special educational activities and faculty committees.

Administration of the MIT Communication Requirement

The office coordinates the administration and implementation of the Communication Requirement—in effect for four years—and supports the work of the faculty Subcommittee on the Communication Requirement. We continue working with other offices within DUE—especially the Office of the Registrar and the Office of Academic Services—to improve procedures and clarify policies associated with the requirement. In addition, since effective collaboration among SOCR, the Committee on Academic Performance, and our office is an important aspect of tracking and enforcing students' progress toward completion of the requirement, we work actively to maintain strong communication among these constituencies. Academic year 2005 marked the first year that undergraduates subject to the Communication Requirement were completing their SB programs, and considerable effort was devoted to auditing these students and communicating with their departments regarding missing communication-intensive subjects. The new degree tracking tool developed by the Registrar's Office and SSIT was integral to these efforts.

The office continues to receive proposals for new communication intensive subjects in the major (CI-M) and coordinates their review by SOCR before forwarding them to the Committee on Curricula for final approval. The office also receives petitions from students seeking exception to some aspect of the requirement and advises students on all aspects of its satisfaction. We work with the dean for undergraduate education to assess budget requests associated with CI-M subjects and other components of the requirement and to allocate the support necessary for their delivery.

During AY2005, an advisory group of assessment experts was invited to visit MIT to make recommendations on how we might structure a full-scale assessment of the Communication Requirement. The primary task of AY2006 will be to initiate assessment activities based on these recommendations.

Cambridge-MIT Undergraduate Student Exchange Program

This was the fourth full year of the Cambridge-MIT Undergraduate Student Exchange program (CME) that began as an initiative of the Cambridge-MIT Institute (CMI) and that continues to receive some financial assistance from this UK government–supported initiative. Management has been a responsibility of the Office of the Dean for Undergraduate Education, working with partners at Cambridge University. About 290 students from both sides have participated in the full-year program; 14 MIT departments currently offer this option to their students, including most major engineering and science departments. In late March MIT hosted a two-day meeting that brought together faculty, staff, and students associated with the exchange from both institutions. A major concern of a number of faculty on both sides is the prospect of losing the generous support from CMI that has enabled us to provide grants to students on the exchange, to cover travel expenses for faculty and staff involved in the exchange, and

to fund undergraduate research stipends for Cambridge students at MIT. A number of fundraising initiatives were begun this year both at MIT and at Cambridge, and we hope to work more closely with Resource Development at MIT during this coming year.

This year, CME alumni at MIT established themselves as a student organization: Alumni of the Cambridge-MIT Exchange (ACME). A series of monthly teas was hosted by the group involving distinguished MIT faculty and staff; in late spring we began working with students to launch an ACME website, designed to keep CME alums in contact after their exchange year.

Planning for an Office of Study Abroad and Foreign Scholarships

In November we met with the educational subgroup of the Academic Council to make the case for a more visible and dedicated study abroad office within DUE that would (1) serve as the focal point of information for undergraduates and their advisors about study abroad and foreign scholarship opportunities; (2) provide support to students as they investigate and plan for a term or year away from MIT, while they are away, and when they return to MIT; (3) stimulate the development of new study abroad programs beyond the opportunities that currently exist for MIT undergraduates; (4) provide proactive support and guidance to students applying for certain distinguished foreign scholarships and to the faculty Committee on Foreign Scholarships; and (5) serve as the home for the CME program as well as the Killam Fellowship program (an exchange program with a number of US and Canadian universities). In the spring, our budget request for additional staff to support this effort was approved in part, and we hope by the start of the fall term to have identified a suitable candidate to serve as assistant dean for study abroad and to work with us to establish the new office.

Planning is under way to establish a study abroad option for MIT students at the Universidad Politécnica de Madrid, in Spain. Staff in the office are working with Professor Margery Resnick and a number of other MIT faculty to explore this option with a view to sending up to 10 students to Madrid in spring 2006.

During the year, we continued to work with Professor Linn Hobbs to improve the provision of advice and guidance to students throughout the application and interview process for a number of the distinguished international study grants that require endorsement by MIT. Over 100 students expressed interest in applying for one or more of these competitive programs; 39 MIT students submitted 56 applications. MIT students were awarded 17 foreign scholarships: 3 Marshall Scholarships; 3 Rhodes Scholarships; 1 Churchill (out of 12 awarded nationally); 4 Fulbright Awards; 3 DAAD scholarships; 1 German Marshall Fund Research Fellowship; 1 Charlemagne Scholarship; and 1 Chateaubriand Fellowship. Working with staff in Academic Services, we have made a number of improvements to the Foreign Scholarships website to provide students with detailed instructions and advice about the application and interview process and to publicize the good news about who has received one of these distinguished awards.

MacVicar Faculty Fellows Program

This office has organizational responsibility for the various MacVicar Faculty Fellows programs, including planning the agenda for the monthly fellows' meetings; working with departments and the senior administration as fellows are being nominated and selected; and finally, organizing the annual MacVicar Day Lunch and colloquium. This year's new MacVicar Fellows are professors Haynes Miller, Ruth Perry, and David Pesetsky. They were celebrated at the MacVicar Lunch on Friday, March 4, and at the afternoon colloquium, which this year featured a presentation by senior members of the Task Force on the Undergraduate Educational Commons ("What Should We Achieve in a Four-Year MIT Education?"). The monthly lunch program for the MacVicar Fellows continues to be a stimulating and useful forum on a number of topics related to teaching and learning.

d'Arbeloff Grants Program

The dean for undergraduate education chairs the grants subcommittee that oversees the resources provided through the Alex and Brit d'Arbeloff Fund for Excellence in Education; staff in this office worked with DUE to monitor the progress of initiatives that have been funded in prior years. In early June, a new call for preliminary d'Arbeloff Grant proposals was issued in a letter to the faculty cosigned by Dean Redwine and the chair of the Task Force on the Undergraduate Educational Commons, Robert Silbey. Through this request for ambitious educational proposals, the task force hopes to "stimulate the development of concrete educational experiments that can serve as models for future subject offerings outside the major programs." Three areas are of particular interest to the task force: project-based experiences; the freshman HASS experience; and initiatives that would broaden the fundamental offerings in science and engineering.

Other Curriculum Support Activities

The Committee on the Undergraduate Program (CUP) is staffed and supported by this office, providing valuable links between the work of DUE and that of the faculty committee having responsibility for undergraduate program policy and direction. At the present time, in addition to providing staff support to the committee, we monitored the second year of the exploratory subject experiment for sophomores and reported to CUP on the results of our survey of juniors regarding their use of the exploratory subject option.

We continue to provide high-level staff support to the work of the Task Force on the Educational Commons, now in its second year of deliberations. Over the past year, the office has worked closely with the executive committee of the task force as well as with the working groups that have been charged to focus on specific commons issues and areas. A considerable quantity of MIT educational data has been assembled by office staff to inform these deliberations. In addition to data mined through the Student Information System and student surveys, we worked with the chair of the Committee on Curricula to assemble degree requirement roadmaps from all undergraduate departments for use both by the task force and the COC. The office maintains an

extensive website containing an entire record of task force deliberations (for members only) and an open site that chronicles the work of the task force and its subcommittees.

In addition to working with the task force proper, we advised and supported the work of the Student Advisory Committee, whose report to the task force was presented in late spring.

Over the past year, in addition to organizing over 30 meetings between individual academic departments and the task force, two major events were organized for the task force to communicate its progress to the MIT community. In its largest event to date, the task force provided a status report on its progress to approximately 160 members of the MIT community during the MacVicar Day event held on March 4, 2005. Earlier in the winter, an invitation-only session was held involving about 80 MIT faculty and including the provost and president-elect Hockfield.

In the spirit of providing forums for faculty from various schools and departments to come together to discuss issues of mutual concern or interest, we sponsored regular meetings with all departmental faculty undergraduate officers. Through the auspices of the task force, we have reestablished regular meetings between faculty teaching in the science core with those engineers and scientists involved in core departmental subjects. It is the wish of the task force that more be done to open lines of communication between and among departments and schools, so we plan to expand our efforts in this area over the next year.

Staff in the office worked closely with DUE and with Professor Resnick as the new faculty Committee on Academic Integrity developed a policy statement to be included in a handbook to be issued to all graduate and undergraduate students in the fall. Plans are also under way to provide all faculty information on addressing academic integrity violations.

Special Projects Office

Two staff members in Special Projects were honored with awards for their special contributions to MIT undergraduate education: Anna Frazer was recognized with a DUE Infinite Mile Award for her extraordinary efforts on behalf of the Communication Requirement; earlier in the year, Joanne Straggas received an MIT Excellence Award in the "Innovative Solutions" category.

Our offices have been housed in temporary quarters for the past three years; in June, we moved out of Building 6 to our summer location in Kendall Square. Plans call for our offices to move once again in the late summer, again to temporary space but back to the campus.

Margaret S. Enders
Associate Dean for Undergraduate Education

Student Financial Services

Student Financial Services (SFS) enables students to meet their financial obligations while ensuring access to an MIT education for all qualified students without regard to their financial need. We fulfill this mission by providing comprehensive financial services and counseling through in-house and outsourcing arrangements. While we strive to provide seamless customer service, our office is organized into major units corresponding to our fiduciary responsibilities: Student Accounts, Student Financial Aid, Student and Parent Loans, Student Resource Development and Employment, and the Student Services Center. We have a central administrative unit within our organization to provide general accounting and finance services; oversee our business application environment; implement our master communications strategy; ensure our organizational knowledge and compliance with federal, state, and institutional rules and regulations; and oversee contractual obligations and agreements with our third-party servicers.

We bill and collect tuition, fees, and other Institute charges, and we counsel students and families on payment options and financial management. We administer need-based financial aid programs—from institutional, federal, state, and private sources—for undergraduates and graduate students, counseling them and their families on financial aid and financing options. We manage undergraduate, graduate, and parent educational loan programs, including MIT's Educational Loan Plan for faculty and staff, providing borrowers with advice on debt management strategies. We maintain the stewardship program for institutional scholarship and loan funds, develop term-time and summer student employment opportunities for undergraduate and graduate students, and serve as the human resource office for students and their employers. We strive to work collaboratively with other MIT offices by creating a focal point for student contact and making all administrative tasks—not just those associated with financing an MIT education—less time consuming for students so they can concentrate on their studies, research, and extracurricular activities.

Operating Activities

Tuition, Fees, and Other Major Institute Charges

Tuition, fees, and other major Institute charges assessed through Student Accounts totaled $394,044,257 in 2005, a 6 percent increase over the previous year. Graduate tuition comprised $212,339,743, accounting for 63 percent of tuition, and undergraduate tuition was $124,311,364, or 37 percent. This is the same percentage breakdown as in 2004. Combined finance charges and late payment fees increased 19 percent to $515,013, an indication that students and their families are finding it increasingly difficult to make timely payments.

Operating Activities	
Tuition	$336,651,107
Student Activity Fee	$1,957,200
Housing	$34,171,025
Dining	$3,011,941
Health Insurance	$17,223,193
Medical/Dental	$514,778
MIT Payment Plan Finance Charges	$87,355
Late Payment Fees	$427,658
Total	**$394,044,257**

Student Refunds

We are required to refund money to students when the credits on their student accounts exceed their charges. In 2005 we issued 7,536 refund checks totaling $21,567,574. This represents a significant increase in both the number of refund checks (40 percent) and the dollar volume of refunds (31 percent). Plans are under way to streamline this administrative process by developing a direct deposit option.

Student Receivables

Student accounts receivable as of June 30, 2005, amounted to $5,300,796, an increase of 20 percent from June 30, 2004. Of this amount, 31 percent is for the current summer term, 36 percent is for the AY2005 charges, and the remaining 33 percent is for academic years prior to 2004–2005.

Educational Loan Note Receivables

From 2002 to 2005, educational loan note receivables for all Institute educational loan programs—including Federal Perkins Loans, MIT Technology Loans, the MIT Parent Loan Plan, and MIT Educational Loans to faculty and staff—declined 20 percent from a high of $81,107,639 to $64,629,739. The factors contributing to this trend are decreased usage of the MIT Technology Loan fund by Sloan students as result of the creation of the Sloan CitiAssist Loan Program with Citibank and increased consolidation of federal loans resulting in full payoff of Federal Perkins Loans for some borrowers. We expect a reversal in this trend due to increased reliance on the MIT Technology Loan program by undergraduates who are no longer eligible for federal student loans because of changes in the way the federal government determines financial need.

MIT Educational Loans for Faculty and Staff

In 2005, a total of $1,558,397 was loaned to MIT faculty and staff, a total of $915,944 was collected, and the year-end receivable balance for that program was $4,114,840. In the past five years, the year-end receivable balance in this Institute benefit program has increased 63 percent.

Undergraduate Financial Aid

MIT admits qualified undergraduates without regard to their ability to pay for an MIT education. The MIT financial aid offered to an undergraduate is based only on financial need and MIT meets the full need of all eligible undergraduates. In addition to receiving aid directly from the Institute, MIT undergraduates receive financial aid from federal, state, and private sources. Most federal and state financial aid is based on financial need. Private financial aid is based on financial need and/or merit.

Undergraduate Financial Aid

	Scholarships/Grants		Loans		Employment		Total	
Source	**Amount**	**Students**	**Amount**	**Students**	**Amount**	**Students**	**Amount**	**Students**
Institutional	$50,039,348	2,311	$523,744	157	$4,773,114	1,940	$55,336,206	3,530
Federal	$5,867,246	1,029	$7,159,285	1,644	$1,263,353	651	$14,289,884	2,253
State	$268,325	166	$ 0	0	$ 0	0	$268,325	166
Private	$8,070,759	1,476	$2,113,253	135	$ 0	0	$10,184,012	1,573
Subtotal	**$64,245,678**	**2,985**	**$9,796,282**	**1,829**	**$6,036,467**	**2,591**	**$80,078,427**	**3,817**

In 2005, 3,817 undergraduates, or 92 percent of the 4,136 registered undergraduate students, received $80,078,427 in need- and merit-based financial aid—including scholarships, grants, student loans, and employment—from institutional, federal, state, and private sources. Scholarships and grants comprised 80 percent of undergraduate financial aid, loans were 12 percent, and term-time employment was 8 percent.

Family Incomes of Undergraduate Students

We can derive information about the distribution of undergraduate family incomes based on the known income distribution of undergraduate financial aid applicants and an assumption that all nonaid applicants are in the highest income quintile. Incomes are categorized according to the quintiles from the US Census Bureau Current Population Survey for 2004. Those income quintiles and the percentage of MIT undergraduate families in each quintile are as follows.

Income Distribution of MIT Undergraduates' Families

Income quintile	Income range	% of MIT undergraduates
First	$0–24,116	8.5
Second	$24,117–42,056	7.0
Third	$42,057–64,999	11.0
Fourth	$65,000–98,199	14.0
Fifth	$98,200 and up	59.5

Benchmarking the percentage of undergraduates coming from the first income quintile, MIT compares favorably to the 3 percent figure often cited for the nation's most selective colleges and universities. However, there is reason for concern as MIT's key competitors, such as Harvard and Yale, are increasing their efforts to recruit students from incomes below $40,000 by automatically setting a zero parental contribution in lieu of a contribution calculated according to their need analysis methodology.

Undergraduate Scholarships

Scholarships and grants from all sources totaled $64,245,678, an 11.5 percent increase, with 2,985 (72 percent) of the undergraduates receiving scholarships.

MIT scholarships rose $3,196,978, or 7 percent, with 56 percent of the undergraduates receiving an average MIT scholarship of $21,650. The increase in the average scholarship was 5.5 percent from 2004 to 2005. Approximately 68 percent of MIT scholarships were funded from restricted sources and 32 percent from unrestricted sources.

Undergraduate Student Loans

From 1998 to 2005, undergraduate borrowing decreased significantly, a consequence of lowered self-help expectations and a change in financial aid policy allowing private or outside scholarships to replace loans and work. The lowered self-help requirement has made a discernable difference in the quality of undergraduate life, especially in the pivotal freshmen year, and it has also contributed to declining undergraduate debt, as hoped. Median debt at graduation decreased 34 percent, from $23,640 in 1998 to $15,500 in 2005. Approximately 50 percent of the undergraduates in the graduating class of 2005 borrowed at some point in their undergraduate career. For those borrowing, the range of debt was $1,000 to $186,469, with the 90th percentile at $35,177, and the average debt at $19,748.

During AY2005, 44 percent of undergraduates borrowed $9,796,282, an 8.5 percent decrease, and the average loan was $5,356.

Undergraduate Student Employment

Since 2004, undergraduates have had choices regarding their self-help expectations. They decide how much of their self-help expectation to meet and whether to meet it with loan only, term-time work only, or loan and term-time work. The trend is toward less term-time work, which makes it increasingly difficult to spend Federal Work-Study Program funds, further compounded by decreased eligibility for federal student financial assistance as a result of changes in the way the federal government determines financial need.

Student employment from on-campus employment and employment under the Federal Work-Study Program, including on- and off-campus programs, totaled $6,036,467, with 2,591 students (63 percent) earning $2,330 on average.

Undergraduate Parent Loans

Approximately 10 percent of undergraduate families, or 419 parents, borrowed through a parent loan program administered by MIT. For those parents borrowing, the average loan was $18,450, an 8 percent increase from last year.

Undergraduate Parent Loans

Source	Amount	Parents
Institutional	$597,740	30
Federal	$5,778,860	313
Private	$1,354,358	77
Total	**$7,730,958**	**419**

Graduate Financial Aid

Graduate students are provided with tuition support in connection with research assistant, teaching assistant, and fellowship appointments. These awards are supported from either MIT funds (general Institute budget or nonsponsored funds) or a sponsored program (research projects or sponsored funds). Tuition revenue support from MIT funds is considered financial aid for purposes of generally accepted accounting principles (GAAP) reporting. In addition to these sources of financial aid, which are not administered or reported by Student Financial Services, graduate students are eligible for need-based financial aid, including student loans and employment under the Federal Work-Study Program, which are administered and reported by Student Financial Services.

In 2005, 1,083 graduate students, or 17.5 percent of the 6,184 registered graduate students, received need-based financial aid totaling $37,971,019. Loans totaled $36,839,803, an increase of 8 percent from the prior year, with 1,052 students, or 17 percent, borrowing an average of $35,019. The average amount borrowed rose 10 percent in the past year. Approximately 58 percent of the graduate students who do borrow receive funding from another source such as a research assistantship, teaching assistantship, or fellowship. Graduate students from all five schools borrow, although the majority of borrowing is done by students in the Sloan School of Management. Graduate student employment under the Federal Work-Study Program, including on- and off-campus programs, totaled $1,131,216, with 167 graduate students, or 3 percent, earning $6,774 on average.

Graduate Need-Based Financial Aid

	Loans		Employment		Total	
Source	**Amount**	**Students**	**Amount**	**Students**	**Amount**	**Students**
Institutional	$77,641	5	$ 0	0	$77,641	5
Federal	$15,570,581	836	$ 1,131,216	167	$16,701,797	867
State	$273,796	17	$ 0	0	$273,796	17
Private	$20,917,785	679	$ 0	0	$20,917,785	679
Subtotal	**$36,839,803**	**1,052**	**$1,131,216**	**167**	**$37,971,019**	**1,083**

Other Accomplishments

SFS is committed to expanding its organizational and technological capabilities; fostering high ethical standards; being accountable; striving for continuous improvement; administering human, financial, material, and information resources in a manner that accomplishes its mission while instilling Institute trust; and developing an expansive professional network with other internal and external organizations that impact SFS work. Significant accomplishments within SFS during 2005 are as follows.

- Continued efforts to develop an efficient infrastructure and do it with fewer resources through the reorganization of the Student Accounts and Student and Parent Loans into Student Receivables, thereby eliminating one senior manager position.
- Achieved successful hard launch of MITPAY, transitioning all students from paper to electronic billing as of July 1, 2004, while significantly increasing the cash flow to the Institute at the beginning of each academic term and realizing a 50 percent usage rate for an e-payment option.
- Along with Human Resources and the Controller's Office, continued as a sponsor of the SAP Payroll Project. Led the effort to transition all hourly student employees to direct deposit and to develop an electronic personnel action form to streamline the process by which hourly student employees are hired.
- Created a literacy program by supporting a reading instructor who teaches MIT students how to help children in grades K–8 learn how to read and write.
- Partnered with Admissions to create a state-of-the-art blogging activity on admissions and financial matters. This blogging activity has come to symbolize for the outside world the very essence of MIT, its innovation with technology, its commitment to the truth, and its care of students.
- Supported the Admissions Office's recruitment and yield goals through extensive financial aid outreach and counseling, resulting in a 67 yield for the undergraduate class of 2009.
- Led the effort to engage the provost, treasurer, executive vice president, chancellor, dean for undergraduate education, dean for graduate students, vice president for resource development, executive vice president and CEO of the Alumni Association, and the controller in a comprehensive analysis of student borrowing needs and development of a strategic plan for the most effective,

competitive, and responsible educational loan programs possible to MIT students, both undergraduate and graduate. This initiative resulted in changes to the MIT Technology Loan Program beginning in AY2006.
- Created new functionality on WebSIS to inform all MIT scholarship recipients of the exact source of their MIT scholarship. We hope the present generation of scholarship recipients will be inspired by the generosity of MIT alumni and friends and join the community of MIT donors in the future.
- Initiated a partnership with Housing and SSIT to improve the billing of housing, especially to freshmen families. Successfully completed the project prior to start of AY2006.

Staffing

There were staffing changes in SFS during the past year. Three staff members left and six new staff members arrived. There were two internal promotions, and two staff members had the scope of their positions expanded as the result of a reorganization. The net impact on the diversity of the office as a result of these staffing changes was an increase of three underrepresented minorities: one African American male, one African American female, and one Hispanic female.

Staff who left include Kathleen Manzolillo, student employment representative; George Sotirion, student resource development and employment counselor; and Cynthia Stanton, communications officer. Staff who arrived include DuJuan Browder, staff accountant; Lakitha Garrett, student services representative; Susan Kenney, student services representative; Kimberly Mann, student employment representative; Yohanka Rodriguez, student services representative; and Alice Waugh, communications officer. Gary Ryan was promoted from student services representative to student resource development and employment officer, and Mary Murray from student account counselor to manager of student accounts. In addition to her current responsibilities, Carlene Chisom-Freeman assumed responsibility for Student Accounts and the Student Services Center, and her title was changed from director of student and parent loans to director of student receivables. All collection efforts were centralized, and Eleanor Wolcott assumed responsibility for student account receivables in addition to her responsibility for student and parent loan receivables.

Betsy Hicks
Executive Director

More information about Student Financial Services can be found online at http://web.mit.edu/sfs/.

Student Services Information Technology

The mission of Student Services Information Technology (SSIT) is to provide high-quality information services support to a wide-ranging set of users within the Office of the Dean for Undergraduate Education, the Office of the Dean for Student Life, and MIT. This support focuses on the automation of business processes and information systems to provide students, faculty, and administrators with timely and accurate information and support for administrative functions. SSIT works closely with our clients to ensure a high-quality, reliable product that addresses their needs.

Accomplishments

SSIT has completed many client-focused projects.

The Degree Tracking System, a web-based application that supports the graduation process, completed its initial year of operation including its first June graduating class and Commencement. The system includes an online graduation application and facilities for tracking and approving students' candidacy, ordering diplomas, and managing some Commencement Day activities, such as the publication of the Commencement book. It is used by students, department administrators, and the Registrar's Office.

The Undergraduate Admissions web portal went live in fall 2004. The portal gives applicants the ability to submit their applications online. In addition to this crucial service to potential applicants, the portal also gives the Admissions Office a place where they can reach out to applicants and their families via articles and blogs.

The creation of a content management process gives the Admissions Office staff the ability to dynamically deploy content to the admissions portal at any time. This ensures that new content is added frequently and that the site always looks fresh.

Integration of the MIT News Office RSS feed into the admissions portal gives applicants up-to-date news regarding MIT as a whole as opposed to just the admissions news. This offers applicants a broader view of MIT and ensures that new articles are available on a daily basis.

Admissions wait room staff can now track applications online. As part of the admissions portal, an internal application was created that allows staff to see the status of all components of an application, the dates they were received, and the dates processed. This ensures that all application inquiries from applicants can be turned around almost instantly.

The internal application gives Admissions staff the ability to dynamically create event notifications and create target groups to notify them electronically of these events.

The MITSIS Migration Project was initiated. We established a project to migrate legacy systems to stable and supportable versions of hardware and software; built executive support and sponsorship throughout MIT; established an overall program; and defined and initiated a vendor request for proposal selection process.

We selected and implemented an Issue Tracking system used department-wide for bug and request tracking. This will provide a base to produce metrics to determine potential areas for improvement.

We completed a large part of the programming and migration of old data for the new UROP tracking system. The new system replaces paper applications and antiquated software for maintaining records with a web-based application to allow students to apply for UROP projects; to enable faculty, departments, and the UROP Office to electronically approve applications; and to enable convenient maintenance of UROP information integrated with other student and faculty data in the student database.

We performed the following IT administration and desktop support: SSIT WIN domain migration; deployment of refurbished computers across DUE/DSL offices; and upgrading approximately 164 PCs to WinXP and 106 Macs to OS 10.3.x.

We also accomplished the following:

- Implemented the system infrastructure to support the Undergraduate Admissions web portal
- Provided infrastructure in support of upcoming MITSIS Migration proof of concept
- Worked with SFS to move the Campus Partners data transfer from tape to FTP;
- Worked with SFS to move nongraduate aid disbursement from MITSIS to PowerFaids and implemented a mechanism for posting the data to MITSIS students' accounts
- Completed the PowerFaids to MITSIS data load process, which allows students to view their financial aid information on WebSIS
- Implemented Donor Funding pages on WebSIS, which allows students to see how their MIT grant is funded
- Added student insurance awards to the Course 6 graduate aid data feed process
- Worked with MIT Medical to facilitate the development of the new medical system and to develop a process to post medical data back into MITSIS
- Worked with the Sloan School of Management to develop a system for applicants to submit their GMAT scores for admission evaluation

International students are required to report their home and term addresses to the International Students Office, which reports this information to SEVIS. We worked with ISO to modify WebSIS to collect addresses from international students. This information is then accessed by ISO and submitted to the government.

Independent Activities Period (IAP) coordinators working with the Academic Resource Center requested several new enhancements to the IAP website. These enhancements included the ability to add a joint sponsorship for an IAP event, expanding the registration options, and expanding the character limit on listings.

Internally, SSIT's ad hoc Java Applications Standards Team committee established a common approach to J2EE development projects and environments; set up project

guidelines; defined a common software architecture; and set up an approach to create and maintain common code.

Staffing Changes

After the resignation of SSIT director Robert Rippcondi in May 2004, dean for undergraduate education Bob Redwine formed an advisory committee to assess the current state of SSIT and its ability to meet the IT needs of its stakeholders. In addition, an outside consultant provided an analysis of needs to support the infrastructure of MIT's student information system. Both reports found the SSIT organization in need of additional resources to be able to meet client demands. To begin addressing this need, Dean Redwine and the vice president for Information Services & Technology (IS&T), Jerry Grochow, agreed to request additional SSIT resources and to move the SSIT organization from DUE to IS&T. The organizational move, effective July 1, 2005, is expected to put SSIT in a good position to leverage services from IS&T to provide efficiencies between the organizations. The Desktop Support Team within SSIT will report to the DUE Administration Team as part of this change.

There were a number of staffing changes within SSIT over the course of the year. Infrastructure team leader Kent Dorsey resigned from SSIT in the fall. Dan Hart assumed this position on an interim basis and accepted the position on a regular basis in July 2005. In addition, Eamon Kearns joined SSIT as a programmer/analyst to help support the new admissions recruitment portal, and a second analyst/programmer position is being recruited to support this application. Both Quinton Wall and Maria Fernandez left MIT to pursue other opportunities. Terre Dilworth and John MacDonald were hired to fill IT consultant I positions.

JoAnne Stevenson continued to fill the role of interim SSIT director throughout the year.

JoAnne Stevenson
Interim Director

More information about the Student Services Information Technology can be found online at http://web.mit.edu/ssit/.

Teaching and Learning Laboratory

The Teaching and Learning Laboratory (TLL) was founded in 1997 as a resource for faculty, administrators, and students who share a desire to improve teaching and learning at MIT. Its goals are to strengthen the quality of instruction at the Institute; to further an understanding of the learning process, particularly in science and engineering; and to provide support for the creation and assessment of innovative educational technologies, curricula, and instructional methods.

One of the major accomplishments of AY2005 was the creation of a prototype for the Teaching Assistants Strategy Kit (TASK), a web-based tool designed to help teaching assistants, new faculty, and novice instructors become better teachers. TASK's distinctive feature—short, annotated videos that model good teaching and effective interactions with students—allows users to *see* concrete, practical techniques they can implement in the classroom immediately. Complementary text reinforces the points illustrated in the videos, discusses other effective strategies and tactics, and explores the theory and research that support the techniques suggested.

TASK is being developed jointly by TLL and Columbia University's Center for New Media Teaching and Learning as a nationwide resource for the higher education community. The prototype was developed with funds from the MIT Alumni-Sponsored Funds for Teaching and Education Enhancement and Stephen P. Kaufman, an MIT alumnus. We are currently raising funds to fully develop TASK. TASK can be viewed at http://www.ccnmtl.columbia.edu/projects/task/ (username task; password kit0[zero]5).

As described above, TLL has three broad and interrelated functions: instructional support, assessment and evaluation, and research. TLL's accomplishments in each of these areas are detailed below.

Instructional Support

TLL staff members worked closely with MIT faculty in AY2005 on projects related to educational innovation, while maintaining regularly scheduled programs and services.

Educational Innovation

A major project for TLL in AY2005 was the experiment in pedagogy sponsored by the Cambridge–MIT Institute (CMI). This is a collaboration between MIT's Department of Mechanical Engineering and the Engineering Department at the University of Cambridge (CU). This initiative seeks to transfer successful pedagogical methods between the two institutions: small-group, supervision-like teaching at MIT and active learning pedagogies at CU. In AY2005, it involved six subjects at MIT (2.001–2.006), three colleges at CU, 32 faculty, seven teaching assistants, 450 students, and had a budget of $1.2 million. TLL staff members provided expertise in learning, pedagogy, instructional skills, and assessment to the principal investigators, Professor Warren Seering (Course 2) and Professor Steven Hall (Course 16) at MIT and Professor Rex Britter (Department of Engineering) at CU. (Please see the Assessment and Evaluation section of this report for more on the CMI pedagogical experiments.)

Continuing Programs and Services

TLL continues to offer the services and programs in instructional support that it has since its inception. These include the following:

- Independent Activities Period (IAP) "Better Teaching @ MIT" workshop series. Thanks to the continued efforts of Ms. Cindy Tervalon, who coordinated the series, and Ms. Katy Hurley, who was responsible for publicity, "Better Teaching" continues to have a large audience (~100).

- Orientation for New Graduate Teaching Staff, coordinated by Ms. Tervalon (attended by approximately 125 teaching assistants [Tas] from all schools).
- Teaching workshops for HASS TAs (the first workshops oriented specifically to TAs teaching social science and humanities subjects); MITE2S TAs; Interphase TAs; Mission 2008 teaching fellows; TEAL faculty and TAs; and library staff.
- EdTech Fair. Ms. Hurley was a major contributor to this event, which showcases MIT's efforts in educational technology.

We wish to acknowledge the support of Ms. Brenda Blais in these and other activities.

Miscellaneous

TLL staff met with a number of international delegations, including those from Taiwan, South Africa, and Sweden. We also have established the practice of meeting twice yearly with our colleagues from the Bok Center at Harvard.

Assessment and Evaluation

CMI Pedagogical Experiments

As described above, TLL staff members have played a major role in the CMI pedagogical experiments. Besides consulting on the design of the experiments, we have been key in designing and implementing the assessment of this effort. In this we have collaborated with our CU colleagues in the Centre for Applied Research in Educational Technology. This assessment, which utilized both quantitative and qualitative methodologies, was carried about by a team of 12, with Drs. Rudy Mitchell and Alberta Lipson playing leading roles. Six reports were produced. It was found that MIT students responded extremely favorably to small group teaching, but the addition of this pedagogical method did not have an impact on their homework or exam scores.

The table on the following page details the full range of assessment and evaluation efforts that TLL staff members have been engaged in during the year.

Surveys Developed

As part of these assessment efforts, the following surveys were created: Heat Exchanger Survey (2), Small Group Learning Experience Survey, Virtual Tutor Needs Assessment Survey, Engineering Student Design Team Survey, 18.03 Mathlet Survey, Material Science Lab Survey, MetaMedia Survey, HST Endothelium Survey, HST Respiratory Mechanics Survey, Introductory Biology Lab Survey, Exploratory Subjects Survey, Interphase Student Survey, and Terrascope Student Survey.

Consultation

TLL staff members provided consultation to a number of faculty, doctoral students, and representatives from the Student Committee on Educational Policy on assessment. Of note is Dr. Lipson's collaboration with the Public Service Center on an IAP workshop on this topic.

Teaching and Learning Laboratory Assessment and Evaluation Efforts, AY 2005

Subject/Study	Scope of Investigation	Status	Researcher
7.01 concept laboratory	Assessment of the introduction of a concept lab	Complete	R. Mitchell
AP/Fee	Data analysis	Complete	A. Lipson
CU student experience	Interviews with CU students who were on the Exchange	Complete	R. Mitchell
Exploratory subjects	Student survey	Complete	A. Lipson
HST.527	Assessment of new subject	Complete	R. Mitchell
iLab	Experiments, including at CU		J. Fischer
Interphase	Student satisfaction survey	Complete	A. Lipson
Mission 200X	Interviews of seniors who took Mission 2004 as freshmen	Complete	A. Lipson
Physical Intelligence	Assessment on a new interdisciplinary subject between Draper Laboratory and Course 2	Analysis	T. Clay
Summer Institute in Materials Science and Material Culture (SIMSMC)	Assessment of Summer Institute for faculty at liberal arts colleges; included as part of SIMSMC's report to the National Science Foundation	Complete	R. Mitchell
Terrascope	Student satisfaction survey	Complete	A. Lipson

Research and Scholarship

Papers

A. Lipson (2005). "The Impact of Computer Simulations on Student Learning in Science: A View from the Literature." Working Paper.

Presentations

T. Winkler, R. Mitchell, and J. Venegas. "Computer Simulation and a Realistic Simulator in Conjunction with the New Educational Style 'How People Learn' (HPL) to Improve Learning Achievements." Annual Meeting of American Society for Engineering Education, June 2005.

L. Breslow. "We May Speak the Same Language, but . . . Pedagogical and Curriculum Reform by the Cambridge-MIT Institute." International Society for the Scholarship of Teaching and Learning first annual conference, October 2004 (with Drs. David Good, Suzanne Greenwald, and Joshua Jacobs).

L. Breslow. "Student-to-Student Interaction: Why and How to Use It in the Classroom." Invited workshop, Harvard Macy Institute, Harvard Medical International, June 2004.

L. Breslow. "College-level Learning: Lessons in Educational Innovation from MIT." Invited talk, Institute for Science Instruction and Study, Southern Connecticut State University, June 2004.

L. Breslow. "Faculty Development and Teaching Effectiveness: American Experiences." Presented as part of a two-day workshop for the Cultural Division of Taipei Economic and Cultural Office, MIT, June 2004.

In addition, there were presentations at MIT to the Task Force on the Educational Commons and CrossTalk.

Miscellaneous

Dr. Breslow was appointed to the editorial advisory board of the *Journal of Engineering Education* and to the Curriculum Committee, HST Society, Harvard Medical School.

Dr. Mitchell and Dr. Breslow served as reviewers for the *Journal of Engineering Education.*

Staff Changes

Ms. Jane Dunphy, director of English language programs and lecturer in foreign languages and literatures, worked on a part-time basis at TLL from January 2004 through June 2005 to aid us in the development of TA training programs. We are now undertaking a search for an associate director for teaching initiatives, who will take on this responsibility full time.

Lori Breslow
Director

More information about the Teaching and Learning Laboratory can be found online at http://web.mit.edu/tll/.