

Dean for Undergraduate Education

A committed and hardworking staff, strong collaborative relationships and a strategic orientation enabled DUE to make significant progress on some of our highest priorities in spite of economic troubles. As we went through a painful time of restructuring and reduction for MIT and DUE, our 2006 strategic plan continued to anchor our work in areas that are critical to the educational enterprise at MIT. While budget cutting was a necessary focus of the last year, we built on past progress on our strategic themes (<http://due.mit.edu/about-due/strategic-plan/>) and pursued many other important goals and initiatives. These included participating in the accreditation review by the New England Association of Schools and Colleges (NEASC), developing a plan to moderate the growth of financial aid, enabling the faculty to move forward with changes to the Humanities, Arts, and Social Sciences (HASS) Requirement, developing a new model for first-year advising, taking steps to address issues for underrepresented students at MIT, leading a strategic planning exercise for Student Support Services (S³), strengthening connections among the freshman learning communities, collaborating on a realigned plan for an effective and sustainable student information system, strengthening teaching assistant (TA) training, ensuring MIT's compliance with the Higher Education Opportunity Act, beginning to integrate two new units, and admitting another great class. These and other accomplishments are described below and in the office reports that follow. That DUE could accomplish all this with such consistently high quality is a testament to the dedication and professionalism of our staff.

Mission

The mission of DUE is to enroll, educate, and inspire some of the brightest students in the world with a passion for learning so they become the next generation of creative thinkers and leaders in a global society. We lead by promoting the excellence of a science- and technology-centered education, ensuring access and opportunity without regard to financial resources, upholding rigorous academic standards, advancing innovation, developing mentoring relationships, strengthening respect for diversity, and serving as a catalyst for learning, exploration, and discovery. DUE advocates for education by providing mission-critical functions for the Institute, creating new services and capabilities and defining new ways of thinking about education.

DUE Strategic Themes

Catalyzing the Undergraduate Commons

In May 2009 the faculty voted to simplify the HASS Requirement, one of the General Institute Requirements for all MIT undergraduates, and to create a new subcommittee of the Committee on the Undergraduate Program (CUP) to oversee the HASS Requirement. Two DUE offices, the Office of Faculty Support (OFS) and the Registrar's Office, provided invaluable guidance in this subcommittee's start-up phase. With other DUE offices, they continue to play an important role in implementing the revisions and communicating them to the MIT community. OFS has absorbed some of the work formerly done by the School of Humanities, Arts, and Social Sciences (SHASS) Dean's Office. With a tight

timeline for implementation—a goal of fall 2010—this committee has been interacting with groups across DUE to work out and communicate the implications of the changes.

OFS will also monitor the ongoing efforts to create the First Year Focus Program. The May 2010 faculty motion calls for CUP to recommend to the faculty no later than AY2015 whether all students should be required to take one First Year Focus subject in partial fulfillment of the HASS Requirement. DUE continues to support the First Year Focus pilots through the d'Arbeloff Fund for Excellence in Education and to evaluate them through the Teaching and Learning Lab. This information will be vital in helping CUP decide on its recommendation.

Championing Information Technology for the Provision of Information to the Students and Faculty

During the past year, this theme's scope included identifying existing, new, and enhanced processes and functionality, as well as experimenting with technology solutions to determine their appropriateness for MIT and how best to migrate from the current to the future system. Recently, DUE and Information Services and Technology (IS&T) agreed on an incremental approach to improving existing student systems, rather than replacing the systems outright. This approach, SIS Next Gen, evolved from the VISION Study and the Next Generation Student Services System projects. With this approach, we will simultaneously address technical stabilization and visible moves to bring our educational processes further into the digital age.

The first SIS Next Gen project will be online grading, which is targeted to pilot during Independent Activities Period (IAP) 2011. Other priorities include enriching support for advising, creating a seamless user experience, and fulfilling mandated changes.

Enhancing and Enabling Global Education

Although budget cuts slowed the expansion of global opportunities for our students, we were able to sustain offerings and expand in a few directions. A new undergraduate student exchange in Paris, France, and an IAP-India program were established, adding to the global educational opportunities that DUE supports for our students. The International Undergraduate Research Opportunities Program (IROP) was very effective in developing and marketing its program, resulting in 47 IROPs in 20 countries. We managed to extend the second D-Lab course (which the provost made possible for AY2009 with nonrecurring funds) by piecing together resources from several sources inside and outside DUE. While we were glad we could offer a second section of the popular D-Lab for one more year, a predictable internal funding source is needed.

The Global Education Office successfully implemented a long-awaited online risk management and tracking system for students who participate in global experiences. As a result, MIT will be able to better track and centralize student travel and emergency contact information.

Championing and Increasing Pipeline Diversity

Under the leadership of OME's new director, DiOnetta Jones, the diversity theme re-focused on supporting the academic success of our students who are underrepresented minorities (URM). In partnership with other DUE offices, a major conference on URM student success in higher education was held at MIT this April. It brought together national experts, university diversity officers, and academic administrators from Ivy-Plus schools and other top institutions which shared challenges encountered at their respective campuses. Many of them acknowledged the strong impact of faculty engagement (or effects of a lack thereof) in addressing the issues.

DUE identified several steps for immediately following up on the invaluable information shared and outcomes achieved at the conference. These steps included forming an MIT follow-up team including Daniel Hastings, DiOnetta Jones, Lori Breslow, and Julie Norman to help address and mitigate the gap in underrepresented student success at MIT; inviting faculty members of the OME Faculty Advisory Committee to participate in a summer 2010 DUE leadership retreat discussion on related topics; and planning to visit the Meyerhoff Scholars Program at the University of Maryland, Baltimore County this summer. The Meyerhoff program is widely considered to be a national academic success model that works for URM undergraduates.

Two OME programs that were part of the initial diversity theme agenda, Laureates and Leaders and the Mentor Advocate Partnership, continued as pilots in FY2010, and survey tools were developed to assess their effectiveness. Laureates and Leaders strengthened its efforts to increase the number of URM undergraduates at MIT who matriculate directly to graduate school. MAP collected and analyzed survey responses as a basis for improvements in the year ahead.

Advancing From Teaching to Learning

DUE's Teaching and Learning Lab (TLL) made inroads as an advocate for and partner in TA training, much of which is now provided through the academic departments. The Graduate Teaching Certificate Program for PhD students and postdocs, which TLL launched in fall 2008, has been a great success, as evidenced by the exponential growth of interest in the program and the remarkably quick sign-up rate when the 2010 program was announced this summer. Demand far exceeds supply. Many graduate students have said the TA training certificate is a valuable credential for them to have on their resume as they launch their academic careers. TLL also plays an important role in evaluating teaching effectiveness and in supporting educational innovation at the Institute.

Developing a Holistic Student Experience

DUE supports a holistic approach to an MIT education by supporting learning inside and outside the classroom, creation of a supportive environment for students, and the development of confidence, leadership skills, and reflective practices. Increased interactions between students and faculty and a positive influence on undergraduate advising and mentorship are characteristics of this theme, which is led by the Office of Undergraduate Advising and Academic Programming (UAAP) and has participation throughout DUE. As the office that sets the standard for undergraduate academic advising and

mentoring, and as the new home for Student Support Services and Student Disabilities Services, UAAP plays a unique role in developing a holistic student experience. During the past year, seven freshman advising models were assessed, and one was chosen as a pilot: this fall UAAP staff will advise 150 students in an Advising Center pilot. It will be rigorously assessed to see whether it is successful and scalable.

An S³ strategic planning exercise was conducted from January through May 2010. The process included an external review by peers from Harvard University, Brown University, and Boston University and produced recommendations that are already leading to greater accessibility for students. It also clarified academic policies, developed new programming and outreach, and fostered a better understanding of the respective roles of S³ and MIT Mental Health.

Admitting and Enrolling the Next Incoming Class

We continued to see high demand from prospective students for entrance to MIT. With 16,632 applications, AY2010 was another record year. Applications were up again, by 6 percent over last year and 34 percent over the past three years, and our admission rate is now only 10 percent. This academically outstanding group is described in the Admissions Office section of this document.

MIT and a number of peer schools announced plans for tuition and financial aid for the next year, all of them coming in with tuition increases in the 3.5-to-4.5 percent range and in all cases announcing a continued commitment to need-based financial aid. We raised the self-help expectation for financial aid recipients to a level that, while still relatively low, asks students to have more of a personal financial stake in their own education

New England Association of Schools and Colleges

Undergraduate education generally and DUE specifically played a significant role in a very successful NEASC self-study and team visit in October 2009. NEASC described the quality of an MIT undergraduate education and opportunities inherent in it in glowing terms. Several of the aspects they praised most highly are indigenous to or strongly supported by DUE: the Undergraduate Research Opportunities Program (UROP), curricular experimentation and innovation, assessment of teaching and learning, unique opportunities for learning outside the classroom including expanded global offerings, and changes in the HASS Requirement to introduce more flexibility and encourage exploration.

DUE staff took the lead in writing the academic program and information resources sections of the self-study report in conjunction with the president's office. The NEASC team specifically commented on the quality and clarity of the report. DUE members also had primary roles in plenary sessions on undergraduate education, admissions and financial aid, learning outside the classroom, teaching, and learning assessment. DUE staff had important supporting roles on global strategy and library and informational resources. We received positive feedback on our contributions.

Visiting Committee

In March 2010, the DUE Visiting Committee made its semiannual visit. At the core of the two-day proceedings were three sessions:

- Technology-enabled change
- Empowering students
- What DUE can catalyze for MIT in the future

The quality of the committee was very high, and several new members brought fresh insights to issues that were raised. Discussions were insightful and thought provoking, and they generated ideas we will consider in our future planning. The committee also had lunch with a number of undergraduate students who shared their own priorities and concerns.

Who's Teaching What and Online Subject Evaluation

In an effort led by OFS, in collaboration with the Office of Educational Innovation and Technology (OEIT) and IS&T, MIT has been moving its central subject evaluation system online and away from paper-based forms. In fall 2009, 27 departments, 457 subjects, nearly 1000 instructors, and 3000 students participated in online subject evaluations. By spring 2010, these numbers included all the academic departments that had previously used the Institute's paper system. OFS, OEIT, and IS&T staff are continuing to refine the systems so that paper-based evaluations will be phased out by fall 2010. In parallel with this effort, there have been related efforts to improve the quality of teaching data and the ease with which it is collected through a new "Who's Teaching What" web-based application.

Communications

During the past year, DUE communications efforts focused on increasing the visibility and effectiveness of communication with students, faculty, and staff and also with external committees. The communication manager launched a new, dynamic DUE website, <http://due.mit.edu/>, which highlights DUE initiatives, services, and the latest news, and provides important staff-only resources. The new website was very effective in providing both the DUE Visiting Committee and the S³ Review Committee with critical background information through confidential micro-sites. The DUE communications staff was also integral to planning and implementing communications for the revised HASS Requirement, which is required for freshmen beginning in fall 2010.

As part of a collaborative communications effort among DUE, the Division of Student Life (DSL), the Office of the Dean for Graduate Education (ODGE), and the chancellor, the communications manager implemented several mechanisms that improved the quality of student communication. This effort included creating more opportunities for face-to-face interactions with the student deans and the chancellor, as well as more frequent and transparent communications regarding the budget and other pressing issues. There was strong positive feedback from many students. As part of this effort, the communications manager led the development of a new Student Life and Learning website, which was launched in June 2010. This site includes the @MITstudents twitter feed, which was launched as another way to keep students up-to-date.

Responding to Budget Conditions

Last year's Report to the President described some of the steps we took to prepare DUE to make strategic budget decisions. That work continued through the past year when DUE undertook a new program prioritization and review process, worked through over 30 cost-saving recommendations that three DUE working groups had submitted to the dean last June, and engaged in office-specific budget reduction scenarios. This multi-step process continued to provide a sound foundation for decisions about resource use and ways to maintain high-priority programs. A great effort was made to minimize the impact on staff, through thoughtful and thorough process, timely and direct communication, and as few staff reductions as possible. A formal position review process, which DUE instituted in 2008, helped keep the number of layoffs relatively low, because most open positions since 2008 had gone unfilled or were held by one-year appointees. As of April 30, 2010, when all but one DUE office had finalized reductions, eight positions were eliminated and eight more staff had hours reduced. Some of the impact of the past two years' cuts may be mitigated by the ability of several DUE offices to raise revenue from outside sources in order to replace some of their base budget with soft funding.

After participating in or leading several of the nine Institute Budget Task Force working groups, DUE was assigned responsibility to further review recommendations, which most directly affect the educational enterprise: reduce or close the Athena clusters, develop summer General Institute Requirement (GIR) courses, change the add/drop date, increase undergraduate enrollment, increase the number of special students, reduce the cost of freshman alternative programs, adjust financial aid to reflect true food cost, and participate in Digital MIT. Some of these recommendations were subsequently assigned to faculty committees set up by the provost.

Organizational Changes

This year two new units joined DUE. In February 2010, S³ moved from DSL to DUE's Office of Undergraduate Advising and Academic Programming as the result of the recommendation of a faculty-led committee. S³ includes the Disabilities Office. This summer the Experimental Study Group (ESG), one of the alternative freshman academic programs, moved to DUE's Office of Experimental Learning.

Both additions present new opportunities and align with the DUE mission. The S³ move enables us to think more strategically about advising and mentoring and about how we support undergraduates. S³'s integration into UAAP will facilitate collaboration on two central tenets of the UAAP mission: supporting freshmen and advising undergraduates. The ESG move will allow DUE to act more coherently on behalf of the 15 percent of the freshman class enrolled in alternative programs. The addition of ESG, along with Terrascope and Concourse (which are already part of the Office of Experiential Learning), gives us enough critical mass to address some of the issues in the freshman class.

New Appointments/Staff Changes

In mid-August, DiOnetta Jones joined MIT as the associate dean and director of the Office of Minority Education (OME). DiOnetta came to MIT from Cornell, where she was the director of diversity programs in engineering.

Affirmative Action Goals and Successes

DUE is one of the most diverse organizational units at MIT, largely because of our ongoing commitment to developing a workforce that reflects the rich diversity of MIT's student body. The responsibility of working toward achieving affirmative action goals is shared by DUE office heads, hiring managers, and supervisors; the DUE director of human resources; and the dean for undergraduate education. Every DUE employee shares responsibility for fostering an inclusive work environment in which all employees can do their best work. The dean has articulated his expectation that DUE office heads will show leadership in the area of diversity.

This year, even as we reduced the overall budget, we continued to undertake targeted hiring. As a result of the dedicated efforts of the leadership team, DUE was very successful in attracting and hiring underrepresented minorities and women to fill open positions across DUE. Forty-three percent of all positions (both seasonal and regular, ongoing positions) were filled by minorities. Forty-eight percent of all positions in DUE were filled by women. DUE supervisors and managers encourage professional development of all staff. In the past year, seven employees were promoted. Of those promoted, 86 percent were females and 29 percent were minorities.

Looking Forward

In the year ahead, we look with renewed vision and energy to a future beyond budget cuts. Besides helping MIT examine how to respond to some of the future challenges it faces, issues of emphasis in DUE will include addressing the pipeline problems and inequities faced by our underrepresented students, supporting the development of student self-confidence, implementing recommendations of the S³ Faculty Task Group and S³ Strategic Planning Group, and reassessing our strategic goals in light of changes since our last comprehensive strategic planning process in 2006.

Daniel E. Hastings

Dean for Undergraduate Education

Professor of Aeronautics and Astronautics and Engineering Systems

Elizabeth Reed

Senior Associate Dean for Undergraduate Education

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

Office of Admissions

The MIT Office of Admissions enrolls a diverse and talented undergraduate student body composed of some of the world's most intelligent and creative individuals interested in an education centered on science and technology. We also coordinate and support the graduate admissions process across the Institute's 24 graduate departments. The students we enroll add to a vibrant campus community and will become the leaders and innovators of our global society. We uphold a commitment to meritocracy and fair access to our process for students from all backgrounds.

We work closely with Student Financial Services, the Office of Undergraduate Advising and Academic Programming, the Registrar's Office, the Office of the President, the Alumni Association, the Office of Minority Education, and the Committee on Undergraduate Admissions and Financial Aid. During Campus Preview Weekend, we coordinate with other offices in DUE, DSL, the Department of Facilities, and academic departments. We also support the admissions process for the Minority Introduction to Engineering and Science program run by the School of Engineering.

AY2010 Review and Accomplishments

We received 16,632 applications in AY2010, an increase of 6 percent over last year, for growth of 34 percent over the last three years. Admitted students totaled 1,676, which represented 10.1 percent of the applicant pool. Our yield was up slightly, from 63.9 percent to 64.0 percent, in an increasingly competitive field, with nearly 40 percent of our admitted students receiving offers of admission from one or more of the following universities: Harvard, Yale, Princeton, and Stanford.

This year we experienced a sizable increase in the number of students delaying enrollment to a future year. Typically, about 10 students each year choose to delay entry, but in 2010 those students numbered 24. We expect to enroll approximately 1,070 freshmen in the fall of 2010. Applications for transfer admission rose 17 percent from the previous year. Of the 511 applicants for transfer admission, we admitted 23 and expect to enroll 22.

In AY2010 the Wellesley/MIT 3/2 Program was reestablished, allowing highly talented young women to receive dual undergraduate degrees from Wellesley and MIT over a five-year period. We admitted two applicants to this program, and they will begin their formal studies at MIT in 2011. This last year also marked MIT's second year as a QuestBridge partner school. QuestBridge, a nonprofit organization that recruits high-achieving students from low-income backgrounds, has provided 901 applicants to MIT, and we will be welcoming 49 QuestBridge Scholars to MIT as part of the MIT Class of 2014.

In AY2010 we began developing more focused and cost-effective recruitment outreach. These efforts included streamlined mailing programs, collaboration with peer institutions on group travel initiatives, increased student caller programs, and a greater focus on the campus visit experience for students and parents. During our recruitment travel programs we visited 42 cities around the nation and the world and visited 4,000 students in 400 high schools. We increased our on-campus visit program options for students and parents, and over 14,000 visitors attended an on-campus information session and tour. Our mitadmissions.org admissions recruitment website now has more than 3,400 blog

entries, primarily from MIT students, with 80,000 comments, primarily from prospective students. Since mitadmissions.org was launched in 2005, it has recorded 10,000,000 unique visits. The blogs, personal accounts of life at MIT, continue to be the most popular feature of the site. As we move forward, we will continue to focus on our mailing and travel programs and increase the use of electronic communications, such as expanded student caller programs, increased e-mail outreach, and live, interactive webcasts.

The composition of the class of 2014 reflects our ongoing commitment to student diversity and excellence. Of the freshmen entering in 2010, 45 percent are women, 23 percent are underrepresented minorities, 16 percent are the first generation in their families to attend college, and 9 percent are international citizens. Students will be coming from 48 states and 54 countries. Sixty percent of incoming class members have been leaders (president, captain, etc.) of an organization, and one in five has founded an organization or business. Forty-five percent were valedictorians and 93 percent graduated in the top 5 percent of their high school class. The freshmen enrolling in 2010 arrive with mean SAT scores of 710 verbal and 763 math, the highest of any class to date.

The Educational Council increased the number of alumni interviewers to 3,076 this year. Educational counselors conducted 12,180 interviews, for an increase of 10.5 percent over last year. Our pool of interviewers is 18 percent international, 32 percent female, and 4 percent underrepresented minorities. This year's group of Educational Counselors includes members from the classes of 1941 to 2010, with 70 percent of the volunteers hailing from the last 30 graduating classes.

The state of the economy continues to present financial aid challenges for admitted students and families. These pressures have significantly increased the importance of financial aid awards provided by MIT and have increased the importance of cost when families weigh enrollment decisions.

AY2011 will mark the second year of significant budget reductions for MIT operations. Overall reductions in the Admissions Office will be focused on increasing the use of electronic communications for outreach, and improved operational efficiency through the use of a document imaging and electronic application review and selection system, which is currently under development.

Staffing

AY2010 was the second full year Stuart Schmill served as dean of admissions. In AY2010, the Admissions Office comprised 18 administrative staff and 16 support staff: 22 women and 9 men, plus three open six-month support positions. The staff consisted of 20 Caucasians, five African Americans, three Hispanics, and three Asian Americans. We reduced year-round support staff by three, increased admissions officer positions by three, and in lieu of hiring temporary seasonal support staff we relied primarily on temporary workers. For AY2011 we are reducing support staff by two and increasing administrative staff by one.

Stuart Schmill Dean of Admissions

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

Office of Educational Innovation and Technology

In AY2010, OEIT continued its core mission of improving teaching and learning at MIT by developing and disseminating innovative uses of technology. OEIT's activities are largely directed toward three strategic areas to which we bring unique perspective, skills, and methodologies: bridging research and learning, linking digital content to the curriculum, and fostering communities of innovation and practice.

Accomplishments

OEIT has worked with MIT faculty to create technology-enabled opportunities that make a significant impact on the learning experience of our students. This work is manifested in innovative teaching practices that help faculty address topics and concepts in ways previously not possible; in programs that bridge research and educational activities; and in prototypes to influence and demonstrate contemporary educational infrastructure and services. These outcomes and our strategic themes are reflected in OEIT's key accomplishments, described below.

Bridging Research and Learning

Software Tools for Academics and Researchers

The Software Tools for Academics and Researchers (STAR) group continues to support and improve its software offerings: StarBiochem, StarBiogene, StarHydro, StarMolsim, StarGenetics, and StarORF. Over the last year, three new software products were added to the STAR suite: StarGenetics-Yeast, StarWiki, and StarCluster. The STAR software suite was used by 1,300 MIT students during AY2010. The total number of users worldwide doubled over the last year to almost 12,500.

Davis Educational Foundation

Continuing funding from the Davis Educational Foundation has allowed STAR to extend its impact both locally at MIT and worldwide. This includes the development of openly available contextual materials for faculty and students, as well as workshops such as those for Howard University and engagement with Spanish-speaking partners in Spain, Puerto Rico, and Colombia.

STAR staff also participated in the development of the Biology Department's successful Howard Hughes Medical Institute grant proposals. The STAR group is focusing on developing new tools for MIT's GIR courses, in particular StarBacteria (for 7.01x series, 7.03), and on expanding the use of StarCluster in the research community and for classroom use of high-performance computing. StarBiochem, the STAR group's most popular product, will release version 2 in July 2010.

Geographical Information Systems

OEIT provides extensive support for GIS applications across the curriculum, including the use of the GIS Lab (7-238) in partnership with MIT Libraries; the Terrascope freshman year program; helping students compile an online, spatially focused diary; developing and teaching class and lab exercises and introduction to technology such as raster GIS tools for subjects and faculty in the departments of Earth, Atmospheric, and Planetary Sciences, Civil and Environmental Engineering, and Urban Studies and Planning;

and a project-based learning subject that has about 100 graduate students and UROP projects. Support for Course 4 master of engineering thesis projects was supervised by professors Pete Shanahan, Dara Entekhabi, and Eric Adams.

Linking Content and Curriculum

The Transmedia Systems and Applications group's work over the past year included progress on developing technology tools and applications that meet the needs of specific courses and programs and inform the development of next-generation educational technology environments. Specific initiatives are described below.

Russian Revolution Timeline: In collaboration with professor Elizabeth Wood, the Russian Revolution Timeline project developed a digital timeline to showcase the connections among a range of social groups as they were experiencing the complex upheavals of the Russian Revolution.

Edgerton Archives: OEIT contributed to this project by developing federated search capabilities across the various digital asset collections of the site to create an authoritative source for artifacts that celebrate the life and work of Harold "Doc" Edgerton.

Spoken Media: SpokenMedia (<http://spokenmedia.mit.edu/>) is an umbrella project for the development of tools and services to enable rich media notebooks for learning and teaching. The project builds on the Computer Science and Artificial Intelligence Laboratory's Spoken Lecture project led by professor Jim Glass (an iCampus initiative), to increase the educational effectiveness of web-based lecture media, such as academic video lectures from MIT OpenCourseWare (OCW), by improving their search and discoverability.

Core Concept Catalog: This proof-of-concept project is exploring the use of OCW, Spoken Lecture project, and other openly available content from the perspective of core curricular concepts, or "learning objectives," as defined by MIT faculty in a handful of inter-related domains like physics, mathematics, and mechanical engineering.

Visualization in Mathematics, Science, and Technology: This joint project with the Department of Mathematics and the Edgerton Center will develop a new undergraduate subject so that students can learn essential visual arts principles, critical thinking, and analytic skills that will empower them to interpret and represent mathematical, scientific, and engineering information using modern visualization tools and media.

Project Greenfield: OEIT has launched Project Greenfield as an experiment to enable MIT faculty to explore how OpenCourseWare and Open Educational Resources might be used in new and innovative ways to support education at MIT and elsewhere. OEIT, in collaboration with OCW, is hosting a mirror OCW site as a "sandbox" environment in which to experiment with value-added functionality, initially including recommender systems, interactive video and transcript players, content annotation, and concept mapping.

NB: Developed by David Karger and his student Sacha Zyto, NB enables collaborative annotation of PDF documents and was one of this year's iCampus award recipients.

OEIT is supporting the deployment and hosting of this application with a view to piloting it in classes in fall 2010 and supporting the OCW Scholar initiative.

Global Classroom project: OEIT provided educational technology consulting to this MIT Council on Educational Technology–funded project led by professor Lionel C. Kimerling of the Department of Materials Science. The project supports multi-university courses at MIT and is being prototyped with 3.003 Principles of Engineering Practice, in collaboration with professor Kazumi Wada at the University of Tokyo.

Mathlets: OEIT consulted with professor Haynes Miller, Mathematics, to design and develop the MIT Mathlets website (<http://math.mit.edu/mathlets/>), which hosts a suite of Java applets and other relevant materials for teaching and learning differential equations. In spring 2010, over 600 students from 18.03 Differential Equations used the Mathlets site for homework and study. Mathlets is part of the larger initiative to link the mathematics curriculum to science and engineering subjects.

External Engagements

International

OEIT partnered with select institutions internationally around leading-edge educational technology projects and programs of interest to MIT. With the Open University of Catalonia we are helping to define the Campus Project, a community of interest in next-generation learning platform architecture. With Université de Lyon we are exploring the use of the Spiral Connect platform for use in foreign language education and more broadly are looking to develop partnerships around enhancing the use of Open Education Resources. In India we are working closely with the India Institute for Human Settlements, a new university being created in partnership with faculty in the Department of Urban Studies and Planning. We have helped to define an educational infrastructure plan and are pursuing further funding to help design and build the initial system.

K–12 Engagements

This past year OEIT's engagement with primary and secondary (K–12) education has taken on new emphasis and directions. OEIT played a pivotal role in connecting MIT's efforts to the state of Massachusetts initiatives in science, technology, engineering, and mathematics (STEM). A key part of these efforts has been the development of a document that coherently presents some of MIT's significant projects related to STEM education (<http://oeit.mit.edu/resources/archives/mit-partner-stem-education/>). OEIT has been participating in proposals being developed by the Massachusetts Department of Education's Reach to The Top initiative and by education nonprofit agencies such as JFY Networks (for the federal Investing in Innovation initiative). For these opportunities OEIT has primarily advanced faculty-led initiatives such as those by professors Eric Klopfer, Richard Larson (Blossoms) and Kathy Vandiver (Living Lab), as well as its own efforts from the STAR program and in developing next-generation learning platforms. OEIT also cohosted a Share Fair at MIT along with Learning Curve, a regional K–12 consortium that featured MIT initiatives in K–12.

Outreach

OEIT's educational outreach strategy is directed toward the development of communities of interest and practice around pedagogies and educational technology, using face-to-face forums, web technology, powerful multimedia, and knowledge management. Educational outreach activities in AY2010 included the following:

MathCI

OEIT's Transmedia Systems and Applications group worked with professor Haynes Miller, Dr. Mia Minnes, and Dr. Sami Assaf, all from the Department of Mathematics, and Susan Ruff, lecturer in the Writing Across the Curriculum program, to develop a collaborative website for sharing and discussing information regarding how to better teach communications skills within math courses. OEIT is exploring the potential of extending the MathCI model and system to other disciplines at MIT.

Ed Tech Fair 2009

In partnership with OFS and TLL, two dozen engaging poster and panel sessions were presented by faculty including John Belcher, Dava Newman, Haynes Miller, and Kurt Fendt. Staff and students also showcased innovative technology-enabled efforts and initiatives used to advance student learning and teaching at MIT (<http://oeit.mit.edu/community/edtechfair2009/>).

Gallery of Educational Innovation

This project was developed along with the other substantial enhancements of the OEIT website so that the MIT community and the larger education community to share best practices and find useful resources and tools for advancing teaching and learning with technology. Currently, 18 projects and five themes (collaboration, active learning, cross media, visualization and simulation, and open education) are featured in the gallery (<http://oeit.mit.edu/gallery/>).

Crosstalk

OEIT organized the following Crosstalk forums:

- MIT Math CI Space: Collaborative Site for Instructors of Mathematical Communication, by Mia Minnes (Mathematics), Susan Ruff (Writing Across the Curriculum), Haynes Miller (Mathematics) and Violeta Ivanova (OEIT)
- Promoting the Use of Instructional Mathlets Across the Curriculum, by Haynes Miller, Karen Willcox (professor of aeronautics and astronautics), and Franz Hover (professor of mechanical engineering)
- Evidence-Based Design—The Open Learning Initiative, by Candace Thille, director of Carnegie Mellon University's Open Learning Initiative

OEIT also sponsored a Spiral Connect introduction with guests from the Université de Lyon.

Other

IAP sessions (<http://oeit.mit.edu/community/IAP-2010/>) included diverse workshops as well as an open house for networking with faculty and other MIT groups on technology-enabled opportunities for educational enhancement.

OEIT cohosted the MIT Learning International Networks Consortium conference with professor Richard Larson.

DUE Visiting Committee presentations featuring faculty projects on technology-enabled change were organized by OEIT.

OEIT staff presented MIT's educational technology and IT efforts in support of education to NEASC.

MIT Educational Technology Strategy and Planning

OEIT's continued its key role in the work of the Council on Educational Technology providing leadership and coordination for the council's meetings, conducting the annual Microsoft Research iCampus Technology Innovation Student Prize competition to recognize innovative applications of IT by students, and participating in the Next Generation Learning Management Systems committee and the working groups on transition of the Athena computing environment.

OEIT also contributed significantly to two important DUE initiatives: the Online Subject Evaluation/Who's Teaching What project (<http://web.mit.edu/se-project/>) and the Textbook Information Provisioning Project, providing strategic guidance, client relationship, project coordination and technical advice to these initiatives.

Flexible Learning Environments

OEIT's support of spaces configured for innovative educational experiments and specialized applications included the following:

Rebuilt and upgraded the software on all of the 25 workstations in 37-312, the Advanced Visualization Facility; OEIT also extended its efforts to upgrade machines in W20 and E51 (28 machines)

Upgraded the Macintosh environment in New Media Center (Room 26-139) and Room 4-035 for enhanced Digital Media capabilities

Provisioned 1-142 to support the project based course from the Department of Electrical Engineering and Computer Science

Provisioned the mobile Mac laptops to provide ad hoc computing environments for subjects such as HST.583 and 6.963 and for outreach efforts including the DUE Visiting Committee and Ed Tech Fair

OEIT's Response to Budget Reductions

OEIT took an 11 percent reduction for the 2011 budget on the heels of a 7 percent reduction in the previous year, and took the following actions to achieve its reduction target:

- Elimination of an associate director (administrative) position
- Reduction in working hours for an administrative analyst supporting events and travel from 0.60 FTE to 0.40 FTE
- Reduction in the GIS specialist position from a 12-month to a 10-month term, after which the GIS position was transferred to MIT Libraries for greater alignment of GIS services at MIT

- Sizable reductions in equipment procurement, travel, professional development, and operating expenses

Mitigating of the impact of OEIT's budget reductions will require a significantly increased reliance on soft funding opportunities. Overall, this reduction presents challenges for OEIT in terms of diminished capacity for ad hoc consulting for projects and activities as well as risks to their sustainability.

ACCORD

OEIT continued its active engagement in ACCORD (<http://web.mit.edu/accord/>), with OEIT staff playing a leadership role in creating a web portal for video services at MIT.

Professional Contributions and Leadership

OEIT staff continued to participate in a range of relevant professional activities, coauthoring papers and delivering presentations at several venues, such as the New Media Consortium Conference, CA Technologies 2010 Conference, Open Educational Resources 2010 in Cambridge, UK, the Gordon Research Conference on Visualization in Science and Education in 2009 at Oxford University, the International Society for the Scholarship of Teaching and Learning's 2009 meeting, the Northeast Regional Computing Program (NERCOMP) 2009 Annual Conference, the American Society for Cell Biology, the Python for Scientific Computing Conference 2010, Computation Research in Boston, and at the Open University of Israel, the University of Tromso (Norway), the University of Maryland, and the American Chamber of Commerce in India. OEIT staff also served on program and advisory committees for several organizations, including NERCOMP, the Horizon Project, and the Massachusetts STEM Advisory Council. Details of OEIT's professional contributions are at <http://oeit.mit.edu/resources/archives/staff-presentations-and-papers-2010/>.

Awards

The DUE Infinite Mile Award was conferred on Jim Cain for customer service.

Dr. Violeta Ivanova, in collaboration with the Department of Mathematics and the Edgerton Center, received an Alumni Class Grant to develop a new undergraduate subject, Visualization in Mathematics, Science, and Technology.

Looking Ahead

OEIT is well positioned to help shape and support new opportunities for education at MIT, particularly online learning, leveraging open education resources, and innovative pedagogy. However, finding resources commensurate with the growth and significance of its services continues to present a challenge for OEIT, a situation now exacerbated by successive years of deep budget reduction that will require new strategies and attention.

M. S. Vijay Kumar

Director, Office of Educational Innovation and Technology

Senior Associate Dean

More information about the Office of Educational Innovation and Technology can be found at <http://web.mit.edu/oeit/>.

Office of Experiential Learning

Highlights and New Directions

The Office of Experiential Learning brings together the Edgerton Center, Concourse, and Terrascope. The director is professor J. Kim Vandiver, the dean for undergraduate research and the director of the Edgerton Center. The faculty directors for Terrascope and Concourse are, respectively, professors Samuel Bowring and Bernhardt Trout. Each director has provided separate annual reports, which follow this brief introduction.

On July 1, 2010, the freshman alternative program Experimental Study Group will move to the Office of Experiential Learning from the School of Science.

A notable change in leadership took place on July 1, 2009. Professor Robert Rose retired after 19 years as the director of Concourse. Professor Bernhardt Trout of the Department of Chemical Engineering completed his first year as the new faculty director. He is now midway through implementing many exciting new initiatives for the academic programs of Concourse.

The individual reports for the Edgerton Center, Concourse, and Terrascope follow.

Edgerton Center

The mission of the Edgerton Center (<http://web.mit.edu/edgerton/>) is to uphold the legacy of Harold “Doc” Edgerton by promoting hands-on and project-based learning by offering subjects, supporting student clubs and teams, involving students in international development projects, supporting individual student inventors, maintaining MIT’s expertise in high-speed and scientific photography, and improving K–12 education at local, state, and national levels.

K–12 Outreach

The Edgerton Center began a program 15 years ago to bring fourth- through eighth-grade students from the Cambridge Public Schools to MIT to enrich their studies with hands-on science and engineering activities. The program now hosts approximately 3,000 student visits annually, from public, private, and home schools in the greater Boston area. The trips are organized as half-day project-based lessons, which are aligned with the required curriculum of the Cambridge schools. Edgerton program coordinator Amy Fitzgerald and K–12 education outreach project coordinator Jessica Garrett lead the lessons with help from several MIT students. In high school, some of the Cambridge students continue their MIT connection by joining FIRST Robotics Team 97, which is mentored by MIT students and supported by the Edgerton Center. When we began in 1996, MIT was receiving no college applications from Cambridge Rindge and Latin High School (CRLS). Today we receive 8 to 14 applicants per year, and one to three Rindge and Latin students enroll at MIT annually, including CRLS alumni of the FIRST team.

Building on our Cambridge success, we began working seven years ago with Boston’s John D. O’Bryant School of Math and Science in Roxbury. For the last three school years, Edward Moriarty of our staff has been on site at O’Bryant and in the classroom most days, and has brought many students from O’Bryant (and other area students)

to the Edgerton Center on Saturdays for wide-ranging, hands-on STEM projects. Four O'Bryant High graduates have been admitted to MIT over the last three years, and we have helped them maintain their ties with their high school. Our goal is to foster a STEM-centric culture at the school that will become self-sustaining.

The Edgerton Center is in its third year of collaboration with the Gloucester Public Schools and the Gloucester Education Foundation to build interest in STEM fields among middle school and high school students. Jessica Garrett recruited several other MIT K–12 groups to participate, including those affiliated with the Lemelson-MIT Program, the MIT Sea Grant program, Haystack Observatory, the Scheller Teacher Education Program, the MIT Center for Environmental Health Sciences, Terrascope Youth Radio, the MIT Museum, and the Department of Aeronautical and Astronautical Engineering.

Since its inception, the pilot project has implemented lessons developed at the Edgerton Center in fifth-, sixth-, and eighth-grade classrooms; provided hands-on field trips to MIT for all 250 fifth-grade students; encouraged and enhanced afterschool programs; provided materials for hands-on lessons in classrooms; hosted over 100 middle school students for a two-week MIT hands-on summer experience; and contributed to the planning of a technology resource center at the middle school. Gloucester teachers have participated in 47 professional development activities. With Edgerton Center staff encouragement, the Gloucester High School team has won two Lemelson Excite Awards.

We believe that MIT's alumni (and alumni from other technical universities) are an important resource for improving science and engineering education in America. We are using our collaboration with Gloucester educators as a pilot program to learn how to empower MIT alumni around the nation to become involved in improving science, engineering, and math education in their local schools. So far, local MIT alumni have stepped forward to assist with 16 projects in Gloucester schools, such as speaking to classes, working with after-school clubs, and assisting with field research.

International Development Initiative

The International Development Initiative (IDI), a collaboration between the Edgerton Center and the Public Service Center, is a suite of programs for MIT students that fosters invention and entrepreneurship, helping spark innovation and develop technical and programmatic solutions for pressing community needs in developing regions. Each year, hundreds of MIT students work with thousands of people in developing countries around the globe. Core activities include the IDEAS competition, public service fellowships, internships and grants, and the offerings of the D-Lab family of classes.

MIT students actively seek experience in the developing world as a part of their education. At the forefront of this interest is our D-Lab series of classes. D-Lab ("D" for development, design, and dissemination) teaches students how to identify problems in the developing world in areas including health, agriculture, energy, and education. Students collaborate with the local people to find sustainable solutions to identified problems. They then use the other IDI programs to implement their projects. In fall 2009, D-Lab was heavily oversubscribed, with over 100 students vying for 50 available spaces. In January 2010, student teams worked on projects in China, Ecuador, Ghana, India (the Hi-

malayas and Kolkata), Peru, Rwanda, Tanzania, and Zambia, traveling overseas to work intensively in the field with community partners. As part of two of the D-Lab spring offerings, D-Lab: Health and D-Lab: Energy, 25 more students traveled in small groups to Nicaragua to identify design challenges for their respective classes, for which they developed prototypes in the second half of the spring semester.

The brainchild of senior lecturer (and MacArthur Fellow) Amy Smith, the annual International Development Design Summit (IDDS) strives to create a global community of innovators committed to improving the lives of people living in poverty through collaborative technology design. In the summer of 2009, the third IDDS workshop was held in Ghana in partnership with Kwame Nkrumah University of Science and Technology. The design workshop hosted 60 people from developing countries around the world. Participants engaged with one another to identify the challenges facing particular communities, form teams to devise new solutions to those problems, and—over the course of six weeks of lab work—develop their prototypes.

Hands-on Learning for MIT students

Student Clubs and Teams

The center is the home for approximately 15 student clubs and teams, including the Solar Electric Vehicle Team and the Formula Society of Automotive Engineers race car team. Our most ambitious team in recent years has been the one Vehicle Design Summit, which was started in 2006 by then-undergraduate engineering majors Robyn Allen and Anna Jaffe. After bringing together 46 students from around the world in summer 2006 to design and build energy-efficient concept vehicles, they next set their sights on building a 200-mile-per-gallon-equivalent commuter vehicle, which could be put into production. The Vehicle Design Summit team is now assembling its first pre-production vehicle and is working with manufacturers to conduct vehicle safety testing with the ultimate goal of entering production.

New Project Space

The center supports hands-on learning in many ways. One is the operation of a student shop, managed by Mark Belanger. Another is the student project space in Building N51, home to several of our clubs and teams. We use the space to showcase student works, provide a central resource of tools, and ensure close staff supervision. We collaborate closely with the staff of the Department of Architecture student woodshop in N51 and have arranged for students to have access to the resources of both facilities.

Hands-on Academic Offerings

The center offers 20 to 25 subjects for credit each year, including 6.163 Strobe Project Lab and 10 subjects associated with D-Lab. This past year we added three new D-Lab academic offerings: D-Lab: Cycle Ventures, focusing on pedal-powered technologies and associated entrepreneurial ventures; D-Lab: Information and Communication Technologies for Development, focusing on digital technologies to bring the benefits of the Information Age to the developing world; and D-Lab: Energy, exploring energy alternatives for underserved communities. Our summer professional subject in high-speed photography was oversubscribed this year, despite the weak economy.

Edgerton Archive Project

With support from the Harold and Esther Edgerton Family Foundation, we have placed a large fraction of the Doc Edgerton collections in a web-based archive (<http://edgerton-digital-collections.org/>). The world now has access to all of Doc's notebooks, hours of high-speed movies, 5,624 of Doc's images, and 9,164 slides of Doc, students, and colleagues as they learn by doing. The debut of the web-based archive coincided with the opening of a new Edgerton exhibit at the MIT Museum. This is a joint effort of the MIT Libraries, the MIT Archives, the MIT Museum, Academic Media Production Services, OEIT, and the Edgerton Center.

Finances and Funding

The center is supported primarily by income from endowment and by external grants and gifts.

Concourse Program

Concourse (<http://web.mit.edu/concourse/www/>) is a highly structured and integrated program for freshmen. The curriculum covers the standard science core curriculum (mathematics, physics, chemistry) and integrates it into a larger human context (as represented by our humanities classes). The structure of Concourse follows that of the standard curriculum, with scheduled lectures, recitations, problem sets, and quizzes. Small class size (maximum 60 students) and extensive personal interaction with faculty and tutors provide students with the intimate atmosphere of a small school while retaining the vast range of opportunities offered by the Institute as a whole.

Personnel

Members of the Concourse faculty and staff for 2009–2010 were John Keck, instructor of educational research and support, Concourse; Wyn Kelley, senior lecturer, Literature; John Lewis, senior lecturer, Department of Mathematics; Sekazi Mtingwa, senior lecturer and director of academic programs, Office of Minority Education; Jeremy Orloff, lecturer, School of Science; John Pope, instructor, Concourse; Gabrielle Stoy, lecturer, School of Science; professor Bernhardt Trout, Department of Chemical Engineering; Jeremy M. Wolfe, senior lecturer, Department of Brain and Cognitive Science and professor of ophthalmology, Harvard Medical School. In addition, we employed 19 undergraduates as recitation instructors, tutors, and graders.

Enrollment

Concourse's enrollment this past fall was lower than in previous years, with 40 students registering for the fall term. In the spring, our enrollment was set at 35.

Teaching and Curriculum

SP.318 Introduction to Psychology was offered as a HASS elective in the fall term, with 3.091 Introduction to Solid-State Chemistry, 8.01 Physics I, 18.02 Calculus II, and recitations in the calculus sequence, 18.01A and 18.02A also offered. In the spring term, SP.317 Memory and Literature was offered as a HASS-D Communication Intensive subject, with 8.02 Physics II and 18.03 Differential Equations also offered.

Accomplishments

Despite Institute-wide budget cuts, we managed to maintain the same level of course offerings by securing funds from outside sources, including the Charles G. Koch Charitable Foundation (a first for the Institute) and the Apgar Foundation.

The new curriculum Professor Trout will introduce next fall will bring the program closer to its interdisciplinary beginnings, but in a more sustainable standard class framework. The redesigned Concourse website reflects our new curriculum and “new” approach.

Terrascope

In the year-long Terrascope program, freshmen work in teams to find solutions to complex, multidisciplinary problems that are often of pressing environmental concern. The program couples theoretical problem solving with hands-on work in problem solving. A team of alumni mentors is available throughout the year to help students develop solutions to their given problem. Students communicate the results of their work in formal presentations, large interactive exhibits, web pages, and radio broadcast segments. Terrascope faculty and staff are freshman advisors for approximately 90 to 100 students who initially join the program each fall. In spring, students visit a location associated with their year’s work.

Program Highlights

In 2009–2010, there were 63 students in the required fall subject, 12.000 Solving Complex Problems, also known as the Mission. Participants developed an integrated global solution to the rapid rise in atmospheric CO₂ that included carbon capture and sequestration, alternative and renewable energy technologies, international policy, emissions reductions, and increased efficiency. To view a website displaying their solutions, as well as a link to the webcast of fall’s final presentations, visit <http://web.mit.edu/12.000/www/m2013/finalwebsite/>.

Terrascope unveiled a significantly redesigned subject, 1.016 Communicating Complex Environmental Issues, in the spring term. Small teams of students extended their fall experience by pursuing hands-on research or design work under the guidance of professor Charles Harvey (Civil and Environmental Engineering) and lecturer Ari Epstein (Terrascope), along with professor Alexander Slocum (Mechanical Engineering), assistant professor Alison Malcolm (Earth, Atmospheric and Planetary Sciences), associate professor John Ochsendorf (Architecture), and visiting lecturer Philip Tan (Literature). Resulting prototypes, models, and demonstrations were presented to the MIT community in a “Bazaar of Ideas.”

Students in Terrascope Radio produced an innovative radio drama called “Heated Future: A Timely Tale” about a future affected by global warming. Interviews and other audio material gathered during a field visit to Abu Dhabi were used in the program.

Massiah Foundation–Terrascope Field Trip to Abu Dhabi

A group of 58 Terrascope students, alumni mentors, faculty, and staff spent spring break in Abu Dhabi learning firsthand about that country's ambitious plans to develop renewable energy and achieve carbon neutrality. This was the first year that alumni mentors participated in the field trip, and it was a major success. This visit, sponsored in part by the Massiah Foundation and hosted by the Masdar Institute of Science and Technology, was connected with the students' yearlong study of ways to combat rising levels of atmospheric CO₂. Abu Dhabi was chosen as the site of the visit because of the Masdar Initiative's emphasis on sustainability and the development of renewable energy technologies, including carbon capture and sequestration, and MIT's collaborative effort with Masdar.

Honors, Publications, Radio Broadcasts, Grants

"Helping engineering and science students find their voice: radio production as a way to enhance students' communications skills and their competence at placing engineering and science in a broader societal context," was honored as best paper in the Liberal Education Division of the American Association for Engineering Education Annual Conference, June 2010. The paper was coauthored by Dr. Epstein and undergraduate students in the Terrascope Program.

The Baruch Family Foundation awarded \$50K to Terrascope to support its spring 2011 field trip.

Staff

Sam Bowring, professor of Earth, Atmospheric and Planetary Sciences, is Terrascope's director and taught the Mission subject, with help from teaching assistants Erin Shea and Seth Burgess and 13 undergraduate teaching fellows. Charles Harvey, associate professor of Environmental and Civil Engineering, was lead faculty member for 1.016. Terrascope instructor Ari Epstein, three other faculty members, and an instructor co-taught 1.016 with support from Steven Rudolph. Epstein also taught Terrascope Radio. Debra Aczel was the program administrator and Ruth Weinrib, the administrative assistant.

J. Kim Vandiver

Director, Office of Experiential Learning
Dean for Undergraduate Research
Professor of Mechanical and Ocean Engineering

Bernhardt Trout

Director, Concourse
Professor of Chemical Engineering

Samuel Bowring

Director, Terrascope
Breene M. Kerr Professor of Geology
MacVicar Faculty Fellow

More information about the Edgerton Center, Concourse Program, and Terrascope can be found at <http://web.mit.edu/edgerton/>, <http://web.mit.edu/concourse/www/>, and <http://web.mit.edu/terrascope/>.

Office of Faculty Support

In AY2010, the staff of OFS focused on its mission of helping faculty develop and coordinate the undergraduate curriculum and educational programming, supporting faculty governance, and providing information related to undergraduate education. Special activities included implementing reforms to the HASS Requirement, providing support to the new Faculty subcommittee overseeing the requirement, and wrapping up the pilot phase of an Institute-wide online subject evaluation system. In addition, OFS staff continued the work of supporting the Subcommittee on the Communication Requirement (SOOCR) and other key groups addressing the undergraduate curriculum, such as the Undergraduate Officers; overseeing and streamlining the budget for the Communication Requirement (CR); managing the selection process for and distribution of curriculum development funds; and supporting CUP and faculty innovation in education.

Changes to the HASS Requirement

In support of the Faculty-mandated changes to the HASS Requirement, OFS guided CUP in the formation of the its Subcommittee on the HASS Requirement (SHR), including drafting the subcommittee's charge. OFS's Genevra Filiault devoted her efforts and talents to staffing the subcommittee in its initial year. She and a number of other staff members analyzed OFS's new responsibilities in support of the subcommittee and the Requirement, and OFS and DUE have begun identifying needed resources.

In order to implement the revised HASS Distribution component of the Requirement, the subcommittee, with assistance from OFS and the Registrar's Office, asked for and received feedback from all academic units currently teaching HASS Requirement subjects and categorized over 600 HASS subjects as humanities, arts, or social science subjects. The subcommittee also set a timeline for implementation of the revised HASS Distribution Requirement beginning with students entering in fall 2010. To help the subcommittee make this decision, OFS and the Registrar's Office provided models based on preliminary categorizations. OFS also worked with the Registrar's Office to establish a new administrative procedure for approval of HASS subjects, used for the first time in spring 2010. These offices worked together to move the approval process for student petitions for substitutions within the HASS Requirement from the Committee on Curricula (COC) to SHR, effective next academic year.

Genevra Filiault led a working group charged with communicating information about the implementation of the revised Requirement to the MIT community. The group, composed of administrators from DUE and the School of Humanities, Arts, and Social Sciences, drafted a communication plan and announced the change and timeline to the MIT community in settings such as meetings of the undergraduate officers and the undergraduate academic administrators. The working group drafted an article for the *Faculty Newsletter* and letters from Dean Hastings and Professor Jeffrey Ravel, the chair of SHR, to current students, faculty, and administrators. In addition, working group members developed content for the HASS Requirement website, <http://web.mit.edu/hassreq/>, and staffed a table at Campus Preview Weekend to tell incoming freshman about the Requirement. OFS staff designed and constructed the new website, as well as a webpage

providing information to the MIT community about the subcommittee's membership and charge (<http://web.mit.edu/committees/hrs/>).

Subject Evaluation Project

OFS, in collaboration with staff from OEIT and IS&T, continued to refine the new Who's Teaching What (WTW) and online subject evaluation systems. As of spring 2010, all departments that formerly participated in the Institute's paper evaluation system were using the new, more robust version of WTW and had moved evaluations to the online system. Many departments, including all departments in the School of Science, are evaluating all of their subjects online. Beginning next year, OFS will no longer be offering paper evaluations or producing paper evaluation reports.

In spring 2010, 642 subjects in 34 departments were evaluated online, more than doubling the coverage from spring 2009, when 226 subjects in 16 departments were evaluated online. 4,022 students completed 8,913 evaluations, including ratings and comments for 1,187 instructors. Among subjects that were evaluated online in spring 2010 and on paper in previous terms, the per-subject average response rate was 62 percent for online evaluations compared to 72 percent for paper. Overall ratings of subjects and instructors continue to be consistent with those given under the paper system.

With the survey engine and evaluation reports now online, development work this year has focused on features required for scalability. WTW users can now add custom survey questions and check for errors in teaching or evaluation data. Instructors and department administrators can monitor their subjects' response rates in real time during the end-of-term survey period. Important new features have been added to the evaluation report, namely the ability to view frequency distribution charts and to break out results by sections of a subject.

At the subject evaluation website, <http://web.mit.edu/subjectevaluation/>, students and others with MIT certificates can search for any result within the Institute-wide paper or online evaluations. Links are available for results of departmental online evaluation systems as well. Instructors and departmental administrators can access summaries of responses, as well as individual (anonymous) student responses, including quantitative data and comments.

The project has been extended through December 2010 in order to complete prioritized features and improvements, including developing finer-grained access to and publication of evaluation results, enabling registered Listeners to take evaluations, and providing comparative and longitudinal reports across departments and schools. We expect that in the coming year faculty committees will take up policy issues such as changes to Institute evaluation questions and strategies for improving response rates.

The OFS team on the project includes the business owner Mary Enterline and pilot coordinator Rosanne Santucci, assisted by Lee Leffler, Deborah Boldin, and Matthew Davies. While the online subject evaluation was being developed, Deborah Boldin continued to administer efficiently the paper system, which was used in evaluating approximately 51 subjects in spring 2010.

Support of Faculty Governance

In AY2010, CUP and its subcommittees on the Communication and HASS requirements were staffed and supported by OFS, providing a valuable link between the work of DUE and those faculty committees with responsibility for MIT's undergraduate program. In addition to helping implement changes to the HASS Requirement, as noted above, a number of OFS staffers supported CUP's and SOCR's review of the proposal for a flexible SB program in Aeronautics and Astronautics and CUP's review of the preliminary proposal for a minor in environment and sustainability. Anna Frazer, who staffs CUP, participated in the development and proposal of procedures to address a significant disruption to academic activities in the event of an extended emergency and was involved in discussions with the chairs and staff of several committees regarding a possible review of the academic calendar. The office collected information and coordinated discussions leading to some changes to the Institute's policy on hidden grades for freshmen and launched a revised website for CUP.

Anna Frazer continued to convene regular meetings of staff to a number of the Standing Committees of the Faculty in order to coordinate work and agendas for both committee and Institute Faculty meetings. In addition, this year the group focused attention on recordkeeping, including the role of notes and the Institute Archives, as well as materials in the records maintained for each committee.

Administration of the MIT Communication Requirement

In addition to supporting the work of SOCR, OFS coordinates the administration of the Communication Requirement (CR) in collaboration with SHASS, other DUE offices, and those involved in instructional delivery. As a part of the changes associated with the implementation of the HASS Requirement, effective in AY2011 all subjects that are designated as Communication Intensive in the humanities, arts, and social sciences (CI-H) will be reviewed and approved by SOCR. OFS staff members have been part of the discussions about this change and are currently working to ensure a smooth transition. New processes and procedures will need to be developed to accommodate this additional work in OFS and on SOCR's agenda.

OFS staff and SOCR collaborated with COC, the Committee on Academic Performance (CAP), and the staff of both committees to resolve a conflict between the COC's guidelines and a CR policy associated with requirements for students returning after a long absence. As a result of these discussions, the Faculty approved a motion to change Section 2.84 of the Rules and Regulations of the Faculty at its April meeting.

The office audits students' progress in the requirement, receives petitions from students seeking exceptions, and advises students on all aspects of the CR. Following discussions between CAP, SOCR, and a few departments, OFS added another round of advisory messages to students and their advisors. These messages alert students who will be out of compliance with the CR at the end of term and encourage them to contact the CR office to see whether a petition is appropriate.

SOCR and the OFS staff also collaborated with the Online Subject Evaluation team to develop and pilot three questions about communication instruction in CI subjects on the

online evaluations. Kathleen MacArthur also served as a liaison between Writing Across the Curriculum and the OSE team to include the Writing Across the Curriculum lecturers in the online evaluations. These lecturers, funded through the CR budget, provide supplemental communication instruction in CI subjects.

OFS works with the DUE leadership to assess budget requests associated with CI-M subjects and other components of the requirement and to allocate necessary support. This year, the staff has been responding to an eight percent reduction in the CR budget planned for FY2011. This follows the 15 percent effective reduction in the CR operating budget in FY2010. In the past year, OFS staff consulted with many stakeholders and SOCR to achieve the necessary cuts while seeking to preserve the integrity and excellence of the CR as a General Institute Requirement; this work took much time and effort and remains politically challenging.

More information about the Communication Requirement can be found at <http://web.mit.edu/commreq/>.

Curriculum Development Funds

More than \$430,000 was awarded to 22 faculty groups developing new curricula. Funding for these awards came from the d'Arbeloff Fund for Excellence in Education and from the Alumni Class Funds supported by the classes of 1951, 1955, 1972, and 1999. Both funds are administered by OFS.

The d'Arbeloff Fund was established through a generous \$10 million gift from Brit (SM '61) and Alex ('49) d'Arbeloff to support projects designed to enhance and potentially transform the academic experience of MIT's undergraduate students. The fall 2009 call for proposals focused on the new HASS distribution categorization and further piloting of First Year Focus subjects in HASS. Also welcomed were proposals for initiatives involving dynamic, effective pedagogy in any of the GIR areas, including communication intensive subjects. Six new projects received d'Arbeloff awards.

The Alumni Class Funds provide resources to MIT faculty for innovative educational projects, particularly to enhance undergraduate education. Awards serve as seed money for high-risk initiatives aimed at improving the quality of teaching and enriching the learning experience through creative curricular and pedagogical changes and the imaginative use of technology. Sixteen new one-year grants were made from the Alumni Class Funds.

Mary Enterline and Matthew Davies have assumed responsibility for administering the d'Arbeloff Fund as well as the Alumni Class Funds, with Deborah Boldin contributing communication expertise and Sonia Brathwaite collecting data on the impact of previous projects.

Faculty Outreach

In October, the 2009 Ed Tech Fair, cosponsored by OEIT, TLL, and OFS, enjoyed a large turnout, with over 25 presenters and exhibitors. The event showcased MIT faculty and student project demonstrations and included crosstalk panel discussions, information

on services, and on-site consultation on the use of technology. Attendees had the opportunity to see what Institute faculty have been doing with technology to advance teaching and learning at MIT and beyond. Exhibits and featured projects at the Ed Tech Fair included projects supported by the Alumni Class Funds and d'Arbeloff grants, as well as an exhibit on the Subject Evaluation Project. The event also showcased the student winners of the iCampus prize.

Throughout the year, OFS staffed monthly meetings of the departmental undergraduate officers, where agendas touched on readmission policies and procedures, pandemic planning, online subject evaluations, learning management systems, the MIT Libraries, and emergency academic procedures. OFS continues to value this highly committed group of faculty who contribute extensively to undergraduate education at the department and Institute levels, and the office works hard to promote effective communication and collaborative educational policy development within a decentralized, department- and research-focused institution.

Infrastructural and Staff Changes

OFS staff continued to work with dedication throughout the year. Patricia Fernandes returned from her maternity leave in August in time to resume her valuable support of both CUP and the CR for the school year.

Having served as co-leader of DUE's Working Group 2 into the summer 2009 and then having itemized and prioritized OFS's work as part of the budget reduction process, Diana Henderson, dean for curriculum and faculty support and director of OFS, took her sabbatical from January through June. In her absence Mary Enterline served admirably as interim director of OFS, while deans Daniel Hastings and J. Kim Vandiver shared some of her responsibilities as dean and two faculty members, Heidi Nepf and Shankar Raman, filled in for Henderson on CUP and SHR, respectively.

In June OFS welcomed a new staff associate, Jason Donath, who will be working on curriculum initiatives and helping support the HASS Requirement and SHR.

Kathleen MacArthur was recognized with a DUE Infinite Mile Award for Communication and Collaboration in recognition of her outstanding work on the Communication Requirement and its budget and for her contributions as a valued member of the HASS Requirement working group and of OFS itself. Collectively, OFS continued to provide effective, efficient, and dedicated service to DUE and MIT even during a time of budgetary stress and major organizational change.

Diana Henderson

Dean for Curriculum and Faculty Support

More information about the Office of Curriculum and Faculty Support can be found at <http://web.mit.edu/facultysupport/>.

Global Education and Career Development Center

The mission of the Global Education and Career Development Center (GECDC) is to empower MIT students and alumni to achieve lifelong success through seamless access to transformative global experiences, comprehensive and holistic career services, and mutually beneficial connections with employers and with graduate and professional schools.

We are continuing work on initiatives identified in our strategic plan beginning in 2008, including five remaining strategic priorities: 1) champion global education at MIT; 2) create comprehensive, intentional, and holistic career development services and programs that incorporate a global perspective; 3) develop collaborations and partnerships with our mission stakeholders to expose students to the full range of life opportunities; 4) develop a high performing team; and 5) employ emergent technology and assessment infrastructure to enhance student learning and operational innovation.

Throughout this period our staff has continued to provide exceptional customer service and launch new initiatives, despite significant budget reductions and staff turnover. MIT is indeed fortunate to have such a talented and dedicated staff that is willing to adapt and innovate to help our students and alumni succeed.

Changes and New Initiatives

Response to Budget Reductions

Significant work was involved in implementing FY2010 budget reductions and preparing for FY2011 reductions. We flattened the organizational structure, merging several areas to form the new Career Services team. We reduced alumni career services and eliminated career counseling services for postdoctoral scholars. For FY2011, we performed a program review, analyzing 31 individual GECDC programs and identifying 10 programs for potential reduction. As a result of these efforts, we will be able to sustain a substantial budget reduction without losing headcount, (although we will reduce some staff effort) and with minimized reductions to core services.

Championing Global Education

During the past year, we successfully implemented Horizons, a robust global education management system, allowing MIT to better track participation and maintain student travel and emergency contact information in a central location. We piloted the system with study-abroad participants in the fall term, completed system training for the major global opportunity programs, and uploaded relevant student data for upcoming terms. More than 650 students are registered in Horizons to date. Additionally, we successfully implemented the first-ever online application process for the Cambridge-MIT Exchange (CME) program through Horizons, resulting in a more streamlined and centralized application process.

We established the undergraduate student exchange with Sciences Po in Paris, with the program due to start in fall 2010. In January 2010, we oversaw the new IAP-India program, which had 11 participants.

Holistic and Comprehensive Career Services

We significantly increased student and alumni access to career guidance through the implementation of online resources. Eight new online, narrated career workshops have been created, with 3,767 viewings to date, and we successfully implemented three live, online workshops via WebEx webinars to 74 students and alumni. To increase networking, we increased the use of social media by launching a Twitter account (more than 500 followers) and expanding the LinkedIn group (185 members) for the Freshman/Alumni Summer Internship Program (F/ASIP). We added an online appointment system, Clickbook, to streamline appointment scheduling. Finally, we successfully deployed SIGI³, an online career planning system providing self-assessment and career information tools, with over 1,471 users.

GECDL implemented a “Liaison Model,” assigning staff responsible for targeted programming and relationship management within specific academic departments, special populations, and industries. Selected new programming included panel presentations on sciences, energy, and nonprofit careers, as well as collaborative programming for freshmen, women, LGBT and URM populations, parents, and students with disabilities.

Improving Prehealth Advising

Because of a continuing decline in faculty participation as prehealth advisors, we conducted a comprehensive program review of the prehealth advising system and have developed recommendations to make the program more sustainable, while improving and streamlining this service for students and alumni applying to medical schools. These efforts included benchmarking with our peers on their prehealth advising and mentoring models and letter writing systems; surveys of the 25 medical schools most applied to by MIT students and alumni; and analysis of the impact of potential program models on students, alumni, and faculty. We began a pilot of interviewing MIT premedical candidates and writing the recommendation letters in-house, with four undergraduate students and 16 alumni participating. Our next step will be to present these recommendations to key faculty and administrators.

Key Accomplishments and Activities

Global Education

A total of 661 undergraduates participated in global education opportunities through MIT programs, an increase of 22 percent over the prior year. The subtotals by type of experience include 342 internships, 183 public service and service learning opportunities; 52 research experiences, and 84 study abroad participants, with reporting from GECDL, the MIT International Science and Technology Initiatives (MISTI), IDI, the Public Service Center, the Undergraduate Practice Opportunities Program, UROP, and the Singapore-MIT Alliance for Research and Technology.

During this past year, 84 MIT students participated in study-abroad programs, compared to 64 students during AY2009, for an increase of 31 percent. Participation in CME increased significantly, with 29 MIT students, for an increase of 52.6 percent. For the 2010–2011 admissions cycle, we received the largest number of applications for the program in the past five years, primarily due to increased department-level information

sessions. We helped facilitate an Institute-level review of the CME program. In support of this effort, we developed and administered a survey to 229 MIT alumni participants, achieving a 60 percent response rate, with 92 percent of respondents indicating that the CME program met or exceeded their expectations.

We worked extensively on expanding our outreach during the past year, reaching students in new ways, such as hosting information sessions at dormitories and at student organization events. Over 600 students attended these events, including newly designed workshops for IAP and the Go Global Fair, which included our global opportunity partners (IDI, MISTI, UROP, etc.) as well as several outside provider programs from around the world.

Distinguished Fellowships

Distinguished fellowship efforts at MIT saw incredible success, and students and alumni received 21 highly competitive fellowship and scholarship awards:

Rhodes Scholars: Caroline Huang, Steven Mo, and Ugwechi Amadi

Marshall Scholars: Tanya Goldhaber and Vinayak Muralidhar

Gates Cambridge Scholar: Timothy Humpton, W. Victoria Lee, and Yufei Zhao

Churchill Scholar: Maria Monks

Truman Scholar: Ruben Alonzo

Fulbright Scholars: Rachel Licht, Travis Dunn, Amos Winter, Lauren Shields, Ian Rousseau, Anne-Marie Corley, Charles DeRobertis, and Manvi Goel

Merage Foundation for the American Dream Fellow: Swetha Kambhampati

Kawamura Scholar: Tanya Goldhaber and Nicolas Bushak

An impressive 40 MIT applicants for distinguished fellowships became finalists, including 44 percent of the Rhodes applicants, 52 percent of the Marshall applicants, and 45 percent of Gates applicants reaching the interview stage, while 64 percent of the Fulbright went to the second round.

Career Services

There were 3,019 student and alumni contacts for career counseling and walk-in services. This represents a decline of 31.8 percent from the previous year. Reasons for the decline include staff turnover, changes in the F/ASIP program and alumni services, the ceasing of services to postdoctoral scholars, and our transition to a more programmatic service delivery model. Of these visits, 1,830 unique students and alumni used this service, with an average of 1.6 visits per student, and graduate student visits increased by 10 percent. We added the use of webcams and Skype to deliver these services.

There were 141 career workshops, panel discussions, and seminars coordinated or presented to 10,111 students and alumni, an increase of 92 percent over AY2009. Reasons for this large increase include adoption of a more intentional, programmatic service delivery model with an increase in online offerings, which resulted in growth for every category of program type. More than two thousand graduate and postdoctoral scholars attended

35 career workshops tailored to the graduate student community. Among workshop survey respondents, 97 percent found the workshop they attended to be somewhat to extremely helpful.

F/ASIP had 86 students enroll in the program and 36 who completed the first half of the course during the fall term, representing a significant decline in retention from last year. Much of the attrition was attributed to program changes and should be addressed in next year's plans, which include changes in curriculum and program delivery.

Preprofessional Advising

There were 144 MIT student and alumni applicants (69 undergraduates, 17 graduate students, and 58 alumni) in the 2009 medical school application cycle, up from 131 in 2008. Eighty-one percent of all applicants used one or more preprofessional advising (PPA) services, compared to just under 85 percent last year. For the 117 applicants, 2,500 letter-of-recommendation packets were sent. The average number of packets sent per student sent remained 20. Acceptance rates and other admissions data follow:

Undergraduate applicants who used PPA services	94%
Aggregate applicants (undergraduate, graduate, alumni) who used PPA services	86.7%
Aggregate applicants who did not use PPA services	56%
National acceptance rate	46%
Average GPA for accepted undergraduates	3.7/4.0
Average MCAT score	35/45

There was a 12 percent increase in the acceptance rate for undergraduate service users over the prior year's rate of 82 percent. At 94 percent, it is the highest acceptance rate in recent history. Additionally, we saw a slight increase in MIT applicants' acceptance rates to the most selective medical schools. Some likely contributing factors to this rise are increased staffing, programmatic changes including clearer deadlines and more intentional advising, and professor Tom Byrne's monthly information sessions offering application and interviewing tips.

There were 1,196 student and alumni contacts for prehealth advising and walk-in services, a 29 percent increase from last year. Of these visits, 413 unique students and alumni used this service, with an average of 2.8 visits per student. There were 629 students attending 30 workshops and events, a 20 percent increase over the prior year. In its fourth year, the Physician Shadow Program was offered at Massachusetts General Hospital and Tufts Medical Center, with 50 physician volunteers hosting 86 student participants.

There were 67 disclosed MIT students and alumni who applied to law school for the 2009 application cycle. Seventy-nine percent of MIT applicants were admitted, a decrease of 8 percent from last year. The average GPA for all accepted MIT applicants to law school was 3.25/4.0 and the average LSAT score was 162. There were 95 student and alumni contacts for prelaw advising and walk-in services, a 14 percent increase over 2008–2009. Sixty-nine unique students and alumni used these services, an average of 1.4

visits per client. There were 101 students and alumni who attended 10 prelaw events and educational sessions, representing a 42 percent increase over 2008–2009.

Employer and Recruiting Programs

Amid one of the worst job markets in decades, the undergraduate employment rate for the Class of 2009 was 89 percent, marking a slight increase over 2008. Master's degree recipients had a placement rate of 83 percent, while PhD graduates reported a placement rate of 70 percent, both of which represented a decline from the prior year. The average salary for those with undergraduate degrees was \$62,270, a slight decrease from the prior year. All other degree levels also saw a decrease.

Despite the continuing economic uncertainty, this year's preliminary placement data for the Class of 2010 is favorable. Based upon a 72 percent response rate, 78 percent of undergraduates and 71.7 percent of graduate students have accepted a job offer, out of those planning to work. The survey period concludes in August.

F/ASIP summer internship placements saw 89 percent of students securing internships in their chosen fields. There were nine new employers, including several international placements at Cameron Health, Create Asia Land, and the International Diabetes Federation.

A more coordinated internship effort across all MIT student populations was launched this year, including increased communication and development of opportunities and administration of an internship survey concerning summer experiences. The internship survey indicated that 51 percent of students had participated in paid internships and 27 participated in UROPs. Most students reported that their summer experience was helpful in clarifying their future career goals.

There were 259 employers conducting 4,997 interviews on campus this year, representing a 14 percent increase over FY2009. There were 823 full-time jobs and 1,209 internship opportunities posted through CareerBridge, our online career management system. Of the participating employers responding to our survey, 94 percent felt that they met viable student candidates and 100 percent said they would consider returning to recruit at MIT. Through iNet, an online internship consortium, 1,744 registered MIT users had access to 893 internship postings.

We had continued success hosting two career fairs this past year. The Government Career Fair had over 30 recruiting organizations, as it did the year before, and 279 students participated, a decline of 34 percent. The Spring Career Fair had 42 companies and 320 students in attendance, a decline in both areas. This is likely due to a strengthened job market.

We continued our employer outreach efforts to enhance existing relationships, to diversify our employer mix to align with MIT initiatives and student interests, and to engage our frontline career development specialists to take a more active role in employer relations. Employer meetings and site visits included the Fraunhofer Center for Sustainable Energy Systems, TomTom International, General Atomics, Bayer Technology Services, Telefonica, Contact Singapore, Silicon Labs, Sanofi Pasteur, Biogen Idec, Teach for Amer-

ica, Vistaprint, AccelronPharma, Facebook, LinkedIn, and Schlumberger. We registered 1,444 new employers who subsequently posted internships or jobs, participated in career fairs, or interviewed on campus.

Personnel Activities

Over the past year, five staff members—Hannah Bernstein, Jennifer Cook, Robert Dolan, Kathleen Haggerty, and Robert Richard—left the organization.

The following staff were hired or promoted: Deborah Liverman was promoted to the newly created position of associate director for career services; Laura Wilkinson as assistant director for employer relations; Nancy Richmond as assistant director for career counseling and exploration; Amanda Peters as a career development specialist and Scott Murray as administrative assistant I for global education. Several others changed reporting lines.

Professional Activities

Kim Benard received an MIT Excellence Award. Shonool Malik and Sarra Shubart received DUE Infinite Mile Awards. Rachel Greenberg received a DSL Infinite Mile award. Malgorzata Hedderick served on the L2L Alumni Planning Group. Deborah Liverman served on the MIT Martin Luther King Jr. Celebration Planning Committee. Tamara Menghi served as a freshman advisor for UAAP and Mentor Advocate Partnership mentor for OME.

Melanie Parker, chair for the DUE Global Theme Team, provided consultation to several Turkish universities on career services in higher education. She also served as a member of the Advocacy for the Profession Committee of the National Association of Colleges and Employers, and was copresenter in June 2010 of Positioning for Long-term Success in Lean Times at the conference session of the National Association of Colleges and Employers, Orlando, FL. She also contributed to the Career Services section in N. Zhang (ed.), *Rentz's Student Affairs Practice in Higher Education*, Springfield, IL: Charles C Thomas Publishing (In Press).

Nancy Richmond wrote “Using Social Networking Sites during the Career Management Process” in C. Wankel, *Higher education with social media: applications in student affairs, enrollment management, alumni, careers, and other functions*, Bingley, United Kingdom: Emerald Publishing (In Press). She was a panelist for the session “Embrace your inner geek: strategic and creative ways to implement technology in your work” at the National Association of Colleges and Employers conference in Orlando, FL in June 2010. She presented “Meeting their needs: career counseling students of color” for the February 2010 webinar held by the Eastern Association of Colleges and Employers in Boston, MA and “Using social media for your own professional growth” for the December 2009 session at the Career Counselor Consortium Northeast in Boston, MA. She created and leads the Career Counselor Technology Forum on LinkedIn

Erin Scott delivered the poster session “Using an interface to compliment the face to face” at the National Association of Advisors for the Health Professions in Atlanta, GA in June 2010.

Ellen Stahl was a member of the 2009-2010 Advisory Board of the Career Counselors Consortium of New England.

Brian Wahl presented “Preparing students for success abroad by building self-awareness” at the June 2010 conference session of the NAFSA Conference and Expo in Kansas City, MO.

Marilyn Wilson was a co-presenter (March 2010) of. “Advising STEM/Business students about social impact careers” part of a webinar hosted by Idealist.Org and Intern Bridge. She also presented “Grad student-advisor difficulties” at the June 2010 Graduate Career Counselor Meeting at Syracuse University, NY and wrote two professional book reviews for National Association of Colleges and Employers Journal.

Future Plans/Issues

The coming year will bring about a number of changes, in particular reductions in programs and services commensurate with our reduced staff and funding. We anticipate reductions in pre-law advising, individual career counseling, overall administrative support, international travel in support of global education, and marketing efforts. Additionally, we will need to divert effort into revenue generation to provide support for our career assistant positions and other necessary expenses. Finally, we will begin to charge alumni for career services in order to continue to offer services to this population.

We will be seeking input from faculty and academic departments on the model best suited for MIT students and alumni and the role that MIT faculty should play in advising, mentoring, and writing evaluation letters for medical and other health professions. Depending on the timing of the decision, the new model will be implemented either in the 2012 or 2013 application cycle.

We will continue to work under a five-year strategic plan, prioritizing global education and comprehensive career services through a high-performing team, effective collaborations and partnerships, technology and assessment tools, and optimal facilities.

Melanie Parker

Executive Director, Global Education and Career Development Center

More information about the Global Education and Career Development Center can be found at <http://web.mit.edu/career/www/> and <http://web.mit.edu/geol/>.

Office of Minority Education

The Office of Minority Education at MIT adopted a new mission statement on February 1, 2010:

The mission of the Office of Minority Education at MIT is to promote academic excellence, build strong communities, and develop professional mindsets among students of underrepresented minority groups, with the ultimate goal of developing leaders in the academy, industry, and society.

OME supports MIT's academic mission to provide the best possible education for all students while serving the nation's need to have underrepresented and underserved students in science and engineering fields pursue higher education and success in these fields.

New Initiatives

On April 1 and 2, 2010, MIT hosted a meeting entitled Working Together: Conversations about Improving the College Experience and Academic Success of Underrepresented Minority Students. Participants included leading researchers, national experts, university diversity officers, faculty, administrators, academic advisors, and program coordinators from Ivy-Plus and other key institutions. There were 75 attendees representing the following institutions: the University of California at Berkeley, Bowdoin College, Brown University, the University of Chicago, Columbia University, Dartmouth College, Georgia Institute of Technology, Harvard University, the University of Michigan, MIT, the University of Pennsylvania, Princeton University, Purdue University, Stanford University, the University of Texas, and Yale University. Provost Rafael Reif and dean Daniel Hastings provided opening remarks. MIT representatives from DUE, DSL, and several faculty members (including Ed Bertschinger, Paula Hammond, Christine Ortiz, Janelle Thompson, and Sekazi Mtingwa) participated in the workshop. In addition to plenary sessions, attendees participated in breakout group discussions on the following topics: advising and mentoring, student research experiences, climate and culture, and academic programs. The meeting produced best practice recommendations and some new and innovative strategies for enhancing student success. The event was highly successful, and members of the planning committee (DiOnetta Jones, cochair, OME; Lori Breslow, cochair, TLL; Leann Dobranski, coordinator, TLL; and Elsie Otero, coordinator, OME) were honored with the 2010 DUE Infinite Mile Award for Leadership.

The OME Faculty Advisory Committee is officially up and running. Twelve MIT faculty and administrators—Christine Ortiz, Ceasar McDowell, Bob Redwine, Wes Harris, Sam Allen, Suzanne Flynn, Dedric Carter, Ed Bertschinger, Janelle Thompson, JoAnne Yates, Margarita Ribas Groeger, and Sekazi Mtingwa—are now members of the Faculty Advisory Committee. Ed Bertschinger has agreed to serve as chair and Margarita Ribas Groeger has agreed to serve as cochair. This group will meet one to two times per semester. The committee will focus on three primary areas during the upcoming academic year: increasing opportunities for faculty/student engagement, assisting DUE and OME in its efforts to create a more supportive environment for URM undergraduates, and serving as liaisons to five OME Signature Programs—Interphase, Laureates and Leaders, Mentor Advocate Partnership (MAP), Momentum, and Seminar XL.

In August 2009, the Industrial Advisory Council for Minority Education (IACME) comprised only six companies: 3M, EMC, Hewlett-Packard, Lockheed Martin, Raytheon, and Xerox. Upon her arrival, the new associate dean and director created an innovative three-tiered membership structure to broaden the diversity and scope of participating groups. This new model clearly articulates the tangible benefits associated with IACME membership, and since its implementation, 12 new companies, nonprofits, government laboratories, and alumni affinity groups have joined IACME: Intel, Cisco Systems, MIT Lincoln Laboratory, NASA Goddard Space Flight Center, NASA Jet Propulsion Laboratory, Brookhaven National Laboratory, the INROADS organization, Black Alumni of MIT, Latino Alumni of MIT, Google, Procter and Gamble, and General Motors. IACME Partners expressed interest in having a more active presence on campus and have since agreed to meet three times per year (fall, spring, and summer). On June 30, 2010, the IACME Partners participated in their first summer meeting, and they also participated in a tremendously successful “speed networking” event with 70 new Interphasers (incoming freshmen). The increase in IACME participation has already opened many new doors for MIT students, and the growth in membership has substantially increased external funding to support current and future OME initiatives (see the Fund Development section below).

The Second Summer Program was reviewed in the fall. This review included group interviews with students, staff, and participating IACME Partners. This process revealed that the Second Summer Program was indeed a viable and much-needed endeavor. In fact, students found the experience extremely valuable (e.g., it helped them to better understand their coursework, find internships, and effectively present technical research). IACME Partners spoke strongly about the program’s ability to provide them access to talented underrepresented minority students early in their academic career. In their opinion, the Second Summer Program filled a particular niche that was not available through other MIT programs. Students and IACME Partners alike agreed that the name of the program was a bit confusing. To alleviate this concern, the IACME Partners suggested that a competition be held challenging students to create a new name for the program. Hewlett-Packard sponsored the competition, and effective January 2010 the name of the Second Summer Program was changed to Momentum. Momentum is now open to freshmen and sophomore students (another recommendation from the review process). Twelve students participated in the inaugural cohort. The next Momentum class will be held during the January 2011 IAP. Enrollment is expected to increase to at least 20 students.

The OME Student Advisory Council (OMESAC) is composed of two representatives from each of the 14 student groups supported by and through OME. These groups primarily serve underrepresented undergraduates. OMESAC members met monthly over the last year with the OME director and staff. The group elected officers for the first time, assisted OME in defining the membership criteria for OMESAC, participated in three business meetings with the IACME Partners, and played an integral role in the development of the two new OME initiatives—OME Innovations and OME Faculty/Student Mixers.

Fund Development

A \$40,000 grant was awarded to OME by the Webster Foundation to support the Mentor Advocate Partnership program (this is the final year of funding through this grant). A

\$5,400 gift was received from an MIT alumna to support the MAP Nexus Program (the training and match-making kick-off event). A \$5,500 grant was awarded by 3M to support IACME and other OME initiatives. A \$20,000 donation was received from Google to support IACME and other OME initiatives. In addition, over \$54,000 was received through IACME Partners to help underwrite costs associated with OME programs and initiatives.

Functional Enhancements

The Interphase program is a rigorous residential academic program for admitted freshmen that takes place the summer before matriculation. The seven-and-a-half-week program builds community and confidence while fostering high achievement and content mastery for underrepresented minorities and other students who have overcome significant odds to be admitted to MIT. In collaboration with TLL, OME initiated a comprehensive assessment of Interphase. The assessment will provide quantitative and qualitative data that will help maximize the potential of this long-standing program. The final report should be available by December 2010. The collaboration between OME and TLL will also include the hiring of a postdoc for curriculum development. This new hire will work with TLL and Interphase staff over the next year to develop a new Physics curriculum for the AY2011 summer program. After the Physics curriculum, TLL will work on the Calculus and Chemistry curricula. Unfortunately, these much-needed program enhancements do not come without major sacrifices. After thoughtful consideration, and in response to a second cycle of budget reductions, the size of the Interphase instructional staff and the number of students served by the program will decrease. By summer 2011, the Interphase cohort will be reduced from 80 students to approximately 65.

The second annual Laureates and Leaders induction ceremony was held on February 19, 2010. Twenty students were inducted into the program. President Susan Hockfield and chancellor Phillip Clay participated in the ceremony. In addition, several MIT faculty and staff attended the event to acknowledge and celebrate the successes of these extremely talented, graduate-school-bound scholars. In May 2010, OME initiated the first phase of a formal assessment of the Laureates and Leaders Program, with web-based surveys, focus groups, and one-on-one interviews with students, staff, and faculty mentors. The assessment should be completed by December 2010. Evaluation outcomes will inform future program enhancements. In June 2010, 14 Laureates and Leaders graduated from MIT. Of those 14 students, seven have been accepted by and plan to attend top-ranked graduate programs. Five have accepted positions in industry, and two are still weighing their options. Thirty-six students are currently enrolled in the program.

Several staffing transitions threatened to hinder the efforts of the MAP program over the last year. However, with the support of a grant-funded, part-time program assistant, OME was successful in sustaining the program. In AY2010, 116 students participated in the program (53 freshmen and 58 sophomores). Equally impressive and worth noting is that 56 faculty and staff mentors invested their time in this vitally important program. To date, 294 students have participated in MAP. This year, the MAP program began the first phase of a two-year evaluation process. In March 2010, an external consultant spent three days on campus. He surveyed current mentors and protégés, facilitated

group interviews, and conducted one-on-one interviews with participating mentors and protégés. The final phase of the evaluation will take place over the next academic year; however, the interim data has already helped the MAP team refine the program's matching process, develop a match supervision methodology, and solidify key outreach and recruitment strategies. In fact, OME has been zealous, and highly successful, in its efforts to recruit new mentors for AY2011 through newspaper and website articles, information sessions, email blasts, and direct solicitations. In addition to the part-time program assistant, a dedicated staff person is now assigned to the MAP program. OME expects to see this program grow and continuously improve over the next few years.

Unfortunately, the misperception among Latino undergraduates that OME only focuses on African American students has long been an issue. So, in order to enhance and strengthen relationships between the OME and Latino students, a diligent effort has been and will continue to be made to inform students that OME's commitment is to *all* URM students. All OME staff, but the OME director in particular, have been attending student organization meetings that focus on Latino issues. Additionally, the director has made every effort to ensure that Latino students are included in all OME programs and initiatives. This undertaking included a thorough review of current OME publications, which led to the creation of new, more inclusive brochures, flyers, and other web-based marketing materials. The OME director is also working very closely with Latino student leaders and the Committee on Race and Diversity to explore the practicality of implementing a Latino Studies concentration at MIT. Negative misperceptions will not disappear overnight; however, if OME continues to build upon these efforts, positive change will come.

Future Plans and Initiatives

The Seminar XL (academic excellence workshops) program will soon undergo a formal assessment. In the interim, the current model will be refined based on best practices learned from the Gateway Science Workshops held at Northwestern University. Pilot workshops will be held in the fall. The pilot version will include the use of critical problem sets tied to core classes, as well as more substantive training for new Seminar XL facilitators.

The University of Washington and MIT Engineering Research Center proposal has been selected for a site visit (one of only 11 teams to get this far in the process). The National Science Foundation (NSF) will select five to seven centers for this award, so this proposal has a good chance of being funded. The site visit will occur at the University of Washington sometime between August 15 and September 30. MIT faculty (Joel Voldman, Russell Tedrake, Akintunde Akinwande, and Jeff Lang) and the OME associate dean/director will participate in the site visit on behalf of the Institute. Under the terms of the proposal, OME (in collaboration with the Engineering Outreach Programs Office) would receive approximately \$40K annually to offer enrichment courses, internships, and seminars to students, at all levels, to expose them to research/careers in neural engineering. The final decision from NSF should arrive in spring 2011.

MIT, via OME, will be the lead institution in an alliance of several universities (Harvard, Tufts, Wellesley, Brown, Bowdoin, Dartmouth, Princeton, and Yale) that will resubmit a

proposal to NSF in October 2010 for the Louis Stokes Alliance for Minority Participation grant program, designed to increase the number of underrepresented minority students in the STEM fields. If funded, up to \$1 million per year for five years is available to support STEM diversity efforts at participating institutions.

In order to strategically reach out to and serve more underrepresented sophomores, juniors, and seniors, several OME programs will be piloted in fall 2010. Master Your Future is a professional development series offered in collaboration with IACME and the MIT Global Education and Career Development Center. The Pathway to Graduate School program will leverage and extend some of the Laureates and Leaders program components to the greater OME student population. Laureates and Leaders will remain a select group with special benefits and privileges. The OME Innovations program will increase opportunities for OME students to engage in community/public service activities. OME, in collaboration with OMESAC, the Faculty Advisory Committee, and the Minority Faculty Caucus, will also host OME faculty-student mixers in the fall and spring to increase faculty-student engagement. These new OME initiatives will serve all students, but they will be of particular interest and benefit to upperclass students.

Staffing Changes

OME's previous staffing structure was not as strong as it needed to be for optimal success. A new staffing model was created and officially implemented in July 2010. The new organizational structure includes an associate dean/director, an associate dean, one assistant dean (down from two), one full-time program coordinator, one part-time program coordinator (80%), two administrative assistants (one level I and one level II), and a part-time faculty director of academic programs (50%; shared with Concourse). The team will also include a part-time coordinator of academic programs (50%; shared with Concourse) and the MAP part-time program assistant. The new organizational structure fully supports the program-focused and student-services-driven mission of OME.

In August 2009, DiOnetta Jones became the new associate dean for undergraduate education and director of the Office of Minority Education. Dean Jones had been director of diversity programs for the College of Engineering at Cornell University. Sandy Gonzalez, administrative assistant I, resigned from her position effective March 19, 2010. Lorena Tovar assumed this role on June 1, 2010. The position of assistant dean for counseling and advising, previously held by Gail-Lenora Staton, was eliminated effective March 31, 2010.

On July 1, 2010, Gabrielle McCauley became OME's full-time program coordinator for academic/professional development programs. Gabrielle previously served as OME's senior administrative assistant. That position has since been restructured and reclassified as an AAI position. The administrative assistant II position is currently vacant; however, the search process should conclude soon. Antonio Perry became the part-time OME program coordinator for academic/professional development programs in mid-July. Before MIT, Antonio did similar work at North Carolina A&T State University.

DiOnetta Jones

Associate Dean for Undergraduate Education
Director, Office of Minority Education

More information about the Office of Minority Education can be found 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

To fulfill its mission, the Office of the Registrar works with faculty members, Institute and faculty committees, departments, staff, and students to guide and assist development and modification of educational policies and procedures in accordance with Institute policy and local, state, and federal laws. The office continues to gather, maintain, interpret, and share information through new technologies, broadened capacities, and enhanced communications in areas the Institute has entrusted to its charge.

Accomplishments

The Institute relies on the Registrar's Office in various and complex ways. We continued to achieve the highest level of service and accuracy. The staff worked hard to support important educational initiatives during a year when faculty committees were extremely active. A subset of members was deeply involved with the Next Generation Student Services System project.

Technological Highlights

In partnership with Information Services and Technology, we

- Implemented electronic diploma production, thereby streamlining the process and producing significant cost-savings to the Commencement budget
- Defined, designed, and implemented the student snapshot application that provides senior administrators with student information including photo, major, term, home address, and UROP on a lookup basis
- Implemented the degree audit and catalog changes mandated by the Faculty-approved revisions to the HASS Requirement
- Played a leading role in facilitating the Institute's participation in the National Student Clearinghouse's DegreeVerify service
- Provided key business leadership in the development of the functional specifications for the Online Grade Submission Application
- Began the project to convert microfilmed historical transcripts to PDF images

- Processed the first degree recipients for the undergraduate double major program, the master of science in management studies, the master of finance, and the energy studies minor
- Completed stakeholder documents for multiple areas of functionality and vetted them through the Next Generation Student Services System Faculty Working Group
- Provided business requirements to the Quali Student collaborative project
- Developed and garnered sponsor approval for the three- to five-year Student System strategic plan

Policy Work

We played a major role in advising senior administrators on several complex student issues involving tuition, registration, cross-registration, and degree programs. Highlights included:

- Worked with CUP, the Faculty Policy Committee, and IS&T to develop and implement a new grading scheme to be used in the event of an emergency closing of the Institute
- Worked with DSL in revising procedures for transgender students
- Served on the DUE Personal Information Requiring Notification Team to develop procedures and standards for the protection of personal information requiring notification as mandated by Massachusetts regulations.

Registrar's Office staff worked with COC to approve major curriculum changes as follows:

Course 4—A new HASS minor in visual arts

Course 12—A revised degree program that replaced the highly prescribed tracks program with a flexible structure

Course 16—In consultation with CUP, a new flexible SB program, which will operate within a new administrative structure developed by the School of Engineering

SHASS—The removal of the interdisciplinary minor in European studies

As part of a larger review that also included CUP, COC conducted a review to consider a proposal by the Faculty Environmental Network for Sustainability to establish a new inter-School minor in environment and sustainability.

The office provided data and analysis for COC, CUP, the Faculty Policy Committee, and SOCR to facilitate a review of policy and practice concerning the readmission of students who wish to complete their undergraduate degrees after a long absence. The review concluded with Faculty approval of revisions to Rule 1.73 and Regulation 2.84 in April 2010.

COC and the Committee on Graduate Programs worked together to adopt guidelines governing the administration of meets-with subjects that went into effect for the 2010–2011 catalog.

Working closely with the School of Science in developing the spring and fall term schedules, the office took additional steps to implement scheduling recommendations developed by the Classroom Committee. With the move of additional major lectures into the morning, there was an increase of approximately 25 percent each term in the number of HASS lectures and recitations that were scheduled in time slots that had been previously occupied by large lectures.

Operational Highlights

- Updated the Registrar’s Office website to include a visual search tool for classrooms and to provide an electronic method of gathering final exam requests
- Contributed to the NEASC report and Institute Task Force reports
- Worked with COC to approve 58 new undergraduate subjects and acted upon 1,021 subject proposals
- Worked with the Committee on Graduate Programs to approve 69 new graduate subjects and to make substantial revisions to 678 existing graduate subjects
- Processed 2,379 editorial changes to graduate and undergraduate subjects; graduate subjects account for 53 percent of the total
- Processed 281 student petitions to COC
- Scheduled and allocated rooms for 3,154 subjects during the fall term and 2,795 subjects during the spring term
- Made room assignments for 14,674 ad hoc classroom reservations and processed 8,616 reservations for academic classes, exams, reviews, tutorials, and office hours; in responding to 23,290 scheduling requests and 2,256 maintenance requests, the staff generated 28,578 emails; 214 ad hoc requests could not be fulfilled because of lack of room availability at the requested times

Classroom Management Highlights

- Suspended classroom renovation program because of Institute-wide budget reductions; no classrooms were renovated during the past year
- Installed new drop ceilings, lighting and motorized blackout window shades in 66-144, 66-148, 66-154, 66-156, 66-160, and 66-168
- Painted the following classrooms: 1-246, 1-273, 1-277, 1-371, 1-375, 1-379, 5-217, 4-145, 4-149, 4-153, 24-407, 33-319, 33-418, 33-419, 33-422, 56-114, 56-154, 56-162, 56-167, 56-169, 56-180, 56-191, 66-144, 66-148, 66-154, 66-156, 66-160, and 66-168.
- Replaced plaster ceiling and pendant lighting in 6-120
- Installed new student seating in 1-132

- Installed motorized projection screens and sliding chalkboards in 66-154 and 66-168
- Installed eight new LCD video projectors with updated control code in Technology Enabled Active Learning classroom 26-152
- Replaced carpet in 48-308 and 48-316
- Installed new video projectors, equipment racks, DVD players, wall plates and 16-x-9 aspect ratio projection screens in 2-135, 2-136, 2-139, 2-142, 2-143, 2-146, 2-147, and 2-151
- Exchanged classrooms 2-102 and 2-255 for lecture hall 2-190 with the Department of Mathematics
- With IS&T, developed a computer program that efficiently generates classroom utilization data
- Installed new video projectors and updated code to Crestron control system in 32-141 and 32-155
- Installed new video projectors, equipment racks, DVD players, and MediaLink control systems in 1-273, 1-277, 1-371, 1-375, and 1-379
- Led the effort as client for the design phase of the future renovation of classrooms 4-146, 4-159, and 4-163; these classrooms are scheduled to be renovated during the summer of 2010

Data Requests Highlights

- Conducted extensive data gathering and review regarding implementation of the new HASS rules
- Assisted in several Institute studies including, time-to-PhD study, 10-year survey of teaching load, evaluation of learning communities, readmission policy study, and study of add/drop dates.
- Developed algorithm for predicting enrollment
- Conducted race/ethnicity group re-survey of continuing students

Registration

In AY2010, student enrollment was 10,384, compared with 10,299 in AY2009. There were 4,232 undergraduates (with 4,153 the previous year) and 6,152 graduate students (6,146 the previous year). The international student population, comprising the citizens of 117 countries, was 2,747, representing 9.3 percent of undergraduates and 38 percent of the graduate population. (Students with permanent resident status are counted with US citizens.)

In AY2010, there were 3,832 women students (1,916 undergraduates and 1,916 graduates) at the Institute, compared with 3,792 (1,885 undergraduates and 1,907 graduates) in AY2009. In September 2009, 482 first-year women entered MIT, representing 44.7 percent of the freshman class of 1,078 students.

In AY2010, there were, as self-reported by students, 3,130 minority students (2,043 undergraduates and 1,087 graduates) at the Institute, compared with 3,001 (1,946 undergraduates and 1,055 graduates) in AY2009. Minority students included 487 African Americans (non-Hispanic), 71 Native Americans, 791 Hispanic Americans, and 1,781 Asian Americans. The first-year class entering in September 2009 included 536 minority students, representing 49.7 percent of the class.

Degrees Awarded

Degrees awarded by the Institute in AY2010 included 1,116 bachelor's degrees, 1,580 master's degrees, 17 engineer's degrees, and 583 doctoral degrees—a total of 3,296 (compared with 3,227 in AY2009).

Personnel Changes

A shared position was established between the Registrar and OFS with Martha Janus serving as administrative assistant in the Catalog Section, which constitutes 15 percent of her normal workload. This step was taken to support the newly established HASS Subcommittee as part of a larger effort to ensure that the challenging task of implementing and sustaining the new HASS Requirement could be optimally executed.

Mary Callahan
Registrar

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

Reserve Officer Training Corps

Air Force Reserve Officer Training Corps

The mission of the Air Force Reserve Office Training Corps (AFROTC) is to develop high-quality leaders for the US Air Force.

Accomplishments

The quality of our cadet corps remained first class and our cadets continued to be recognized by the Air Force for their performance. One of our cadets was recognized as the top cadet nationwide and traveled to the Pentagon to meet the Air Force chief of staff. In addition, AFROTC annually identifies those cadets in the top 10 percent nationally as Distinguished Graduates. Two of our six cadets who graduated this fiscal year earned Distinguished Graduate honors; both were from MIT. Having 33 percent of a graduating cadet class recognized as Distinguished Graduates is an unprecedented achievement.

Increasing the size of our cadet corps continues to be one of our priorities. We commissioned six cadets this year. Additionally, we project that 18 to 20 cadets will join our program in the fall, which is one of the biggest incoming classes that we have had in the last five years. Part of this success is due to our participation in a variety of MIT programs, such as Campus Preview Weekend, the Undergraduate Practice Opportunities Program, Interphase, and Minority Introduction to Engineering and Science.

Year-end Enrollment in Air Force ROTC as of June 2010

	Freshmen	Sophomores	Juniors	Seniors	Total
MIT	8	5	6	5	24
Harvard	1	1	0	0	2
Tufts	0	4	1	1	6
Wellesley	1	0	0	0	1
Salem State	0	0	0	1	1
Gordon	0	0	0	0	0
Endicott	0	1	0	0	1
Total	10	11	7	7	35

Highlights of the cadet training program include an oil crisis simulation held at Harvard University; a geopolitical war game held at Tufts University involving Detachment 365 cadets, Tufts political science students, and senior military officers from Tufts, MIT, and Harvard advanced degree programs; firearms training; and wilderness survival training. The detachment also hosted a successful career day, with nearly 20 guest speakers from both Hanscom Air Force Base and the Naval War College. Finally, the Air Force, Army, and Naval ROTC programs combined to conduct a successful Cadet Award Ceremony, Pass-in-Review, Commissioning Ceremony, and a formal Joint-Service Military Ball.

In addition to the weekly leadership training, we sent two cadets to the Arnold Air Society's National Conclave in Seattle and sent three cadets to the National Character and Leadership Symposium and the US Air Force Academy. The cadet wing hosted 34 voluntary events over the course of the year, including morale and training events.

Staffing Changes

Significant staff changes are set to take place during the summer of 2010, following a year of relative stability. Lieutenant Colonel Theodore Weibel will replace Colonel Lawrence McLaughlin as the detachment commander. Captain Dan Sawicki replaces Captain Kristin Hort and takes over as the detachment's unit admissions officer. Captain Joseph Adelman has been deployed but will return as the commandant of cadets. Finally, Staff Sergeant Ivy Santiago replaces Technical Sergeant Andrew Sparks. We also welcome Second Lieutenant Eric Smith, who replaces Lieutenant Ryan Frank. Lieutenant Smith was recently commissioned from Northeastern University and will be working out of Detachment 365 as a recruiter for the New England area for the next year.

**Colonel Lawrence McLaughlin
United States Air Force**

More information about the Air Force Reserve Officer Training Corps can be found at <http://web.mit.edu/afrotcl/www/>.

Army Reserve Officers' Training Corps

The mission of the Army Reserve Officers' Training Corps (AROTC) is to select, retain, train, and commission cadets from MIT, Harvard, Tufts, Lesley, Wellesley, Salem State, Gordon, Gordon-Conwell, and Endicott in a two-, three-, or four-year program in order to prepare them for future leadership roles in the US Army, the nation, and the world. Our vision is to develop leaders of the highest character and values who have the foundations of leadership to lead the US Army and the nation.

Accomplishments

We commissioned 11 officers this year, falling short of our Army-assigned viability/commission goal. One of these 11 officers was from MIT. Five graduates earned the honor of Distinguished Military Graduate, placing in the top 20 percent of all cadets nationwide. As of May 15, 2010, seventy students were enrolled in the Army ROTC program, about the same as last year. Over \$1.5 million was awarded in scholarships for all students in the consortium. Army ROTC is poised to meet or exceed its Army direction commission mission for 2011 and 2012.

Year-end Enrollment for Army ROTC as of June 2010

	Freshmen	Sophomores	Juniors	Seniors	Total
MIT	4	2	3	1	10
Harvard	0	2	3	6	11
Wellesley	3	0	0	1	4
Tufts	2	5	3	0	10
Other Affiliates	8	11	13	3	35
Total	17	20	22	11	70

Our cadets continue to achieve excellence academically, physically, militarily, and morally/ethically. At the annual Leader Development and Assessment Course conducted at Fort Lewis, WA—attended by more than nearly 6,000 rising seniors nationwide—our cadets exceeded local, regional, and national averages in nearly all measurable areas, as they do every year. The cadets in the program are excellent scholar-athlete-leaders.

Our instructors continue to excel at classroom leadership instruction and hands-on training of cadets and of non-ROTC students at MIT. Army ROTC continues to be a pre-eminent source of high-quality leadership instruction at MIT. Our cadre participated in its 13th consecutive year instructing a for-credit special seminar in leadership with the Sloan School of Management during IAP.

In this past academic year, MIT Army ROTC held the following major events: new cadet orientation in both September and January; field training exercises at the Fort Devens Army Reserve Forces Training Area in November and April; a formal dinner in November; a water survival test in October; a military ball in March; and commissioning ceremonies at MIT, Harvard, Wellesley, Gordon, and Endicott.

Staffing Changes

The Army assigned four new instructors during the past year: Captain Andrew DeForest (assistant professor of military science and executive officer), Captain Wayne Morgan (senior military science instructor), Master Sergeant Robert Hinkle (senior military instructor) and Sergeant First Class Adam Cook (military science instructor). We will continue to augment our cadre with part-time reserve officers to enhance the leadership experience and training for our cadets. Owing to the continuity of most of our staff, we are positioned for success in meeting our army commission mission for the coming years.

Challenges and Plans for the Future

MIT Army ROTC's continued challenge is to remain viable by increasing the number of cadets in the program, especially from MIT. Although we increased the number of students enrolled in ROTC from the consortium, low MIT enrollment has been noted and is being reviewed by US Army Cadet Command. The problem is exacerbated by the current economic downturn and the subsequent limited number of scholarships available across the nation. Admission of qualified Army ROTC applicants to MIT continues to be our most significant issue, and we continue to work with MIT Admissions to address it. In fall 2010, we will award three four-year scholarships to MIT freshmen, and the continuance of the Star Status consideration is helping to sustain MIT enrollment at a minimal level. Admission to MIT of our highly talented scholar-athlete-leader applicants does remain an issue, as these students often do not gain admission to MIT or instead accept appointments to the US Military Academy or ROTC scholarships to other schools.

Lieutenant Colonel Timothy Hall
United States Army

More information about the Army Reserve Officer Training Corps can be found 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. We imbue them with the highest ideals of duty and loyalty, and with the core values of honor, courage, and commitment, to commission college graduates as naval officers. Our program desires 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 2009–2010 academic year, 11 midshipmen from MIT, Harvard, and Tufts were commissioned as ensigns and second lieutenants. Program enrollment prior to Commencement in June is shown in the table below.

	Freshmen	Sophomores	Juniors	Seniors	Total
MIT	6	4	4	3	17
Harvard	2	1	1	7	11
Tufts	1	1	1	1	4
Total	9	6	6	11	32

Accomplishments

MIT Navy ROTC students continued to maintain high standards of excellence during the 2009–2010 academic year.

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, and they exercised with Marines. This training provided invaluable experience for future naval officers.

MIT NROTC midshipmen completed instruction in nine naval science courses. These classes convened at 7:30 am so as not to interfere with the academic schedules of the host and affiliate universities. These classes were monitored by the visiting professor of naval science to ensure a high quality of instruction.

The MIT NROTC unit hosted various guests, including:

- Rear Admiral Sharpe, Commander Naval Service Training Command
- Captain Doyle, Deputy Director Officer Development
- Vice Admiral McCoy, Commander Naval Sea Systems Command
- Lieutenant Commander Markle, US Navy SEALs
- Captain Majors, US Navy Nurse Corps
- Captain Stefanyshyn-Piper, MIT alumnus and NASA astronaut

Midshipmen continue to run the MIT Naval ROTC program. They are responsible for many of the day-to-day operations of the Naval ROTC Battalion, as well as peer mentorship and training. Midshipmen are involved in the planning and implementation of numerous activities and events, including the annual Beaver Cup Regatta, multiple field-training exercises and military excellence competitions, and two military balls. They have also participated in numerous parades and holiday celebrations throughout the Greater Boston area. These opportunities provide midshipmen with valuable leadership experience, which will prove vital in the Navy and Marine Corps.

In the past year, midshipmen used their leadership and management skills in ways that benefited their respective school communities. Midshipmen were teaching assistants for classes, held executive board positions on their schools' chapters 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.

The academic year concluded on June 4, 2010, with the commissioning of three MIT Navy ROTC students as ensigns in the United States Navy. These students joined MIT Air Force and Army ROTC cadets in the culminating event of their four years of training at the USS Constitution in Charlestown, MA. Captain Heidimarie Stefanyshyn-Piper '84 was the guest of honor and issued the Oath of Office to all new ensigns and second lieutenants.

Two Naval ROTC graduates will continue with graduate education at MIT prior to entering the Naval Nuclear Propulsion Program as prospective submarine officers. The other graduate will report to naval flight training in Pensacola, FL, this fall.

Staffing Changes

This past year saw the addition of two new lieutenants to the MIT NROTC program. Lieutenant Dominic Kramer and Lieutenant Jeff Ransom are relieving Lieutenant Timothy Battles and Lieutenant Charles Frantz, who will detach in July. Lieutenant Steven Ford will be relieving Lieutenant Charles Shehadi in August. We are looking forward to maintaining our tradition of excellence with these three new instructors.

Captain Curtis R. Stevens
United States Navy

More information about the Navy ROTC can be found at <http://web.mit.edu/navyrotc/>.

Student Financial Services

Student Financial Services (SFS) ensures the access and affordability of MIT. We enable students to finance their MIT education by providing financial information, products, and services. We are a focal point for student contact and we work collaboratively across MIT to make all administrative tasks—not just those associated with financing an MIT education—less time-consuming for students. Our core responsibilities are organized around two major functional areas: billing and collecting tuition, fees, and other Institute charges; and administering student financial aid, including student and parent loans and student employment.

Operating Activities

Tuition, Fees, and Other Major Institute Charges

Tuition, fees, and other major Institute charges totaled \$494,065,068 in 2010, a 5.4 percent increase over the previous year, and break down as follows:

Tuition	\$426,871,608
Student activity fee	\$2,669,249
Housing	\$46,659,705
Dining	\$3,759,630
Health plan/insurance	\$13,451,559
Medical/dental charges	\$273,376
Finance charges and late payment fees	\$379,941

Graduate tuition was \$270.6 million, or 63.4 percent of student aid, and undergraduate tuition \$156.3 million, or 36.6 percent.

Student Accounts

The student accounts receivable balance as of June 30, 2010, was \$3.1 million, a 35 percent decrease from FY2009. Excluding credit balances, the net student account receivable was \$6 million. Uncollectible receivables of \$128,209 were written off against the student account reserve.

Students are eligible for refunds when the credits on their student account exceed their charges. In FY2010, approximately 6,282 refund checks totaling \$23.7 million were issued to students.

Student Loans

Student Financial Services administers MIT's Educational Loan Plan, which provides loans to eligible employees to help finance undergraduate or graduate education of eligible dependent children. In 2010, \$2 million was loaned and \$1.5 million collected. The year-end receivables balance for this program continued to climb, rising 9.5 percent to \$6.1 million.

The overall education loan notes receivables as of June 30, 2010, including Federal Perkins Loans, MIT's Educational Loans, MIT Technology Loans, and MIT Parent Loans, increased 1.3 percent to \$52.6 million. Uncollectible loan receivables of \$220,921 were written off against individual loan note receivables, and \$65,237 in uncollectible Federal Perkins Loans were assigned to the US Department of Education.

Undergraduate Student Financial Aid

MIT believes that parents and students have primary responsibility, to the extent that they are able, for paying the costs of an undergraduate education. MIT recruits and enrolls the most talented and promising students without regard to their financial cir-

cumstances. MIT awards aid only for financial need and does not award undergraduate scholarships for academic or athletic achievements or any other nonfinancial criteria. MIT guarantees that each student's demonstrated financial need is fully met.

In 2009–2010, the annual price of an MIT education totaled \$52,400 per student—\$37,782 for tuition and fees; \$11,360 for room and board; an estimated \$2,858 for books, supplies, and personal expenses; and a per-student average of \$400 for travel. With 4,218 undergraduates enrolled, the collective price for undergraduates was \$221 million. Of this amount, families paid \$105.4 million, or 48 percent, and financial aid covered the remaining 52 percent. Since MIT subsidizes the cost of educating undergraduates through its tuition pricing and continues to be the largest source of financial aid to its undergraduates, the Institute is the primary source for paying for an MIT undergraduate education and families the secondary source.

Of undergraduates, 91 percent, or 3,827 of the 4,218 registered, received \$115.6 million in need- and merit-based financial aid. This includes scholarships, grants, student loans, and employment from institutional, federal, state, and private sources. Need-based aid recipients make up 65 percent of MIT undergraduates.

Sources of Undergraduate Student Financial Aid

MIT provided 78 percent of all aid to its undergraduates in AY2010. Of this MIT aid, 93 percent took the form of scholarships, less than 1 percent was loans, and 7 percent was employment.

Other sources of financial aid include the federal government, private sources, and state governments. The US Department of Education is the second-largest source of financial aid to MIT undergraduates, providing 13 percent of all aid from grant, scholarship, student loan, and student employment programs, including Federal Pell Grants, Federal Supplemental Educational Opportunity Grants, Academic Competitiveness Grants, National Science and Mathematics Access to Retain Talent Grants, Robert C. Byrd Scholarships, ROTC Scholarships, Federal Direct Stafford Loans, Federal Perkins Loans, and Federal Work-Study, including Federal Work-Study Community Service.

Private sources of financial aid—including charitable and civic organizations, corporations, foundations, banks, and other financial institutions—provided 9 percent of all aid. This aid includes private scholarship and alternative student loans (so called to distinguish them from federal loans). State aid is not a significant factor in financing an MIT education, even though several states, including Massachusetts, allow their residents to receive a state scholarship while attending MIT.

The following table details the sources and forms of financial aid that MIT undergraduates received in 2009–2010 and the number of student recipients for each category.

Undergraduate Financial Aid, AY2010

Source	Scholarships/Grants		Loans		Employment		Total*	
	Amount (\$)	Students	Amount (\$)	Students	Amount (\$)	Students	Amount (\$)	Students
MIT	83,364,607	2,611	224,375	80	6,365,729	2,296	89,954,711	3,532
Federal	7,650,330	1,155	6,138,195	1,136	1,518,566	500	15,307,091	2,227
State	209,221	109	N/A	N/A	N/A	N/A	209,221	109
Private	8,031,960	1,209	2,072,476	109	N/A	N/A	10,104,436	1,280
Subtotal*	99,256,118	3,068	8,435,046	1,238	7,884,295	2,635	115,575,459	3,827

*The student subtotal and totals are unduplicated numbers of students.

Undergraduate Scholarships and Grants

Scholarships and grants from all sources totaled \$99.3 million, with 73 percent of undergraduates (3,068 students) receiving scholarships. MIT awarded \$83.4 million in need-based scholarships to 2,611 undergraduates, or 62 percent. The average MIT scholarship continued its upward trend, rising to \$31,928. Approximately 88 percent of MIT scholarships were funded from restricted sources and 12 percent came from the general Institute budget or unrestricted sources.

Undergraduate Student Loans

During the 2009–2010 academic year, 29 percent of undergraduates (1,238 students) borrowed \$8.4 million. For those students borrowing, the average loan was \$6,813. Approximately 44 percent of undergraduates in the graduating class of 2010 (390 students) borrowed at some point during their education. Their debt ranges from \$400 to \$116,443, with the 90th percentile at \$33,439. The average total debt is \$15,228 and the median debt is \$9,966.

Undergraduate Student Employment

Sixty-two percent of undergraduates (2,635 students) earned wages from on-campus employment and employment under the Federal Work-Study Program, including both on- and off-campus programs. Their wages totaled \$7.9 million, or an average of \$2,992 per student.

Undergraduate Parent Loans

Approximately 5 percent of undergraduate families, or 206 parents, borrowed \$4.3 million through a parent loan program administered by MIT. Federal Direct PLUS loans accounted for 83 percent of the dollars borrowed. For those parents borrowing, the average loan was \$20,714.

Graduate and Professional Student Financial Aid

Overview

Graduate and professional students are provided with tuition support in connection with research assistantship, teaching assistantship, and fellowship appointments. Tuition revenue support from MIT funds is considered financial aid, but is not included in this report since SFS does not administer these sources of support.

Graduate and professional students are eligible for need-based financial aid, including student loans as well as student employment under the Federal Work-Study Program, both of which are administered and reported by SFS. In 2010, loans totaled \$41.2 million, an increase of 6.2 percent from the prior year, with 921 graduate students, or 15 percent, borrowing an average of \$44,709. Graduate student employment earnings under the Federal Work-Study Program, including on- and off-campus programs, totaled \$2.5 million with 218 graduate students, or approximately 3.6 percent, earning \$11,417 on average. The following table provides the detail.

Graduate Need-Based Financial Aid, AY2010

Source	Loans		Employment		Total*	
	Amount (\$)	Students	Amount (\$)	Students	Amount(\$)	Students
Federal	19,159,548	717	2,488,957	218	21,648,505	8,089
State	156,127	5	N/A	N/A	156,127	5
Private	21,860,859	422	N/A	N/A	21,860,859	422

Other Accomplishments

In partnership with the Office of General Counsel and departments across the Institute, SFS ensured compliance with provisions of the Higher Education Opportunity Act, including those related to:

- Accreditation
- Campus crime reporting
- Campus emergency procedures
- College affordability and transparency lists
- Disciplinary proceeding disclosures
- Distance education
- Drug and alcohol abuse prevention
- Drug violation penalty notice
- Fire safety
- The Integrated Postsecondary Education Data System, or IPEDS

- Lobbying certification
- Missing persons procedures
- Net price calculator
- Peer-to-peer file sharing
- Plans for academic improvement
- Post-graduate information
- Textbook information
- Transfer of credit
- Vaccination policy
- Veterans readmissions
- Voter registration

SFS and the Office of General Counsel also worked collaboratively to ensure compliance with the Federal Reserve Board's Truth in Lending Act provisions.

Staffing

During the past year, two staff members arrived and three left. Minorities currently constitute 34 percent of the staff, with underrepresented minorities at 26 percent. Staff who arrived were Elizabeth (Betsy) Hicks, executive director, and Julia Benz, director of financial aid. Staff who left were Linda Abel, student services representative; Kenneth Hayes, assistant director of financial aid; and Maxence Metayer, assistant director of financial aid.

Elizabeth M. Hicks

Executive Director, Student Financial Services

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

Teaching and Learning Laboratory

The Teaching and Learning Laboratory was founded in 1997 as a resource for faculty, administrators, and students who share a desire to improve teaching and learning at MIT. Its mission is to collaborate with members of the MIT community to promote excellence and innovation in teaching and learning throughout the Institute and to contribute to MIT's standing as a leader in science and engineering education.

TLL emerged from the Institute-wide budget reductions of last year a more unified and coherent group. Although it will be necessary to reduce the effort of two associate directors by 20 percent each in the budget cutback, we have been able to secure funding that should allow us to continue to support those staff members at full salary for the near future. The past two years have not been pleasant, but they have strengthened our appreciation that each of us is part of a mutually supportive team.

This report details TLL achievements in four areas: contributions to the teaching and learning enterprise and educational innovation at MIT; the design and implementation of assessment and evaluation studies; collaboration in DUE-wide initiatives; and participation in national and international academic activities in STEM teaching and learning. We wish to highlight the following achievements for this year:

- The all-Institute Graduate Teaching Certificate Program continues to grow. The number of students who completed the program doubled (to 60) in AY2010 and registration remains at over 100 for AY2011. This initiative was highlighted in NEASC's 2010 accreditation report.
- A major, statistically predictive model of student success at MIT was undertaken. Based on demographic and survey data for entering classes 2002–2009, the analysis focused particularly on the unique elements affecting outcomes for underrepresented minority students. The results are being used by the provost, chancellor, dean for undergraduate education, and select faculty to set policy and programming priorities.
- TLL staff members were instrumental in organizing a 14-university meeting titled Working Together: Conversations about Improving the College Experience and Academic Success of Underrepresented Minority Students, which was held at MIT in April.

Details about these efforts, as well as other TLL initiatives, follow.

Contributions to Teaching

We continue to advocate for expanded TA training as urged by the DUE Visiting Committee in its 2010 report. With one exception, all schools and departments now provide their TAs with some training before entering the classroom. In AY2010, we were able to increase our involvement with TAs in individual subjects (e.g., 1.00, 9.00, and 24.900). In addition, we have developed an IAP seminar for new faculty on how to interact with TAs. We hope to work with the dean to continue to influence schools and departments regarding strengthening the training they provide to their teaching assistants.

The demand for space in the Graduate Student Teaching Certificate Program continues to grow. The program, which is aimed at both PhD students and postdocs, consists of a series of six workshops and a microteaching session with readings and assignments accompanying each workshop. Sixty graduate students enrolled within half a day of opening registration for AY2011, with more than that number on the waiting list. We are actively searching for instructors within the Institute who will teach additional sections for us.

Demand for Assessment and Evaluation Services

The table below provides selected examples of the research projects undertaken by TLL staff this year.

Teaching and Learning Laboratory Assessment Studies, AY2010

Subject/Study	Scope of Investigation	Client	Status/Findings	Researcher
2.001/2.004/2.006	Conducted psychometric and statistical analysis to analyze direct measure of students learning in Course 2; implemented mixed-method evaluation of continued educational innovations in 2.001	Prof. W. Seering	Pre/post-tests refined for 2.001, 2.004, 2.006.	L. O. Shuler
3.091 Students as Scholarly Researchers	Assessed impact of integrating modules on online research into this chemistry GIR.	Prof. D. Sadoway	Two-year study completed; recommendations being developed as result of assessment.	R. Mitchell
5.111 Curriculum Innovations and TA Training	Studied inclusion of biology examples into this chemistry GIR; evaluated a summer "boot camp" for TAs assigned to the course.	Prof. C. Drennan	Two-year study completed; HHMI grant renewed and funding will be made available for continued assessment.	R. Mitchell
6. UAT	Developed mixed-method study to measure improvement in communication skills in Course 6 CI-M.	Dr. T. Eng	Three studies completed; results reported in papers (pls. see section below).	R. Mitchell
HST GEMS	Assessed experience of cohorts of students who are involved in translational medicine program.	Dr. Julie Greenberg	Studies of cohorts will continue through 2010 with HHMI funding.	R. Mitchell
Humanities, Arts, and Social Sciences d'Arbeloff Freshman Year Focus (FYF) Subjects	Continued assessment of FYFs, including assessing two non-CI-H FYFs and collecting comparative data from two well-regarded non FYF HASS-D subjects.	School of Humanities, Arts, and Social Sciences faculty	Report completed on the results from nine FYFs; data presented to CUP and CUP Subcommittee on the HASS Requirement.	L. O. Shuler
Interphase	Created and administered Student Experience Survey.	Office of Minority Education	Preliminary analysis completed.	L. O. Shuler
Student Success Model	Developed statistically predictive model of MIT student success; analysis focused particularly on elements impacting underrepresented minority students' outcomes.	Provost, chancellor, dean for undergraduate education, OME	Model developed; analysis continues to be responsive to faculty queries.	L. O. Shuler

Besides these studies, TLL staff provided expertise to a number of members of the MIT community on assessment and evaluation.

Workshops

Attendance at our regular teaching and learning workshops has grown. Eighty percent of new faculty attended a New Faculty Teaching Orientation in 2009, and for the first time, we offered two orientations—one for new School of Engineering/School of Science faculty and one for the School of Architecture, SHASS, and the Sloan School. Between 60 and 80 participants attended each of the five workshops in the IAP “Better Teaching @ MIT” series. We also provided UAAP with two iterations of the Facilitating Effective Research workshop series that is aimed at graduate students who are supervising UROPs. A program of this type is now being offered to the mentors in the MIT Summer Research Program.

In summer 2009, in collaboration with OME, we developed a set of workshops for Interphase instructors and teaching assistants, and TLL staff members observed every Interphase TA in the classroom to give them feedback on their teaching.

Finally, TLL staff has created an improvisational theatre troupe (the Teaching and Learning Ensemble, or TALE) composed of graduate students who interact with workshop participants on pedagogical methods and common classroom issues. Not only has this group added to our range of workshop activities, but the graduate students who have participated have found it great fun.

National and International Academic Efforts

TLL staff were invited to participate in a number of international initiatives to improve STEM teaching and learning, including activities in Portugal for the MIT-Portugal Program and in Abu Dhabi for the Masdar Institute of Science and Technology. We also met with visitors from 31 countries who wished to learn more about MIT’s efforts in teaching and learning. At the national level, TLL director Lori Breslow is a member of the assessment working group for the Creating a Culture for Engineering Education Innovation project, which is cosponsored by the American Society for Engineering Education and the National Science Foundation.

TLL staff members’ accomplishments in academic endeavors (publishing books, articles, and conference papers and presenting at major conferences) are listed below.

Publications and Papers

Mahajan, S. (2010). *Street-Fighting Mathematics: The Art of Educated Guessing and Opportunistic Problem Solving*. Cambridge, MA: MIT Press.

Breslow, L. and Hastings, D. (2010). “MIT’s Institute-wide Planning Task Force: A Strategic Response to the Global Financial Crisis,” IMHE (OECD) 2010 General Conference, Paris, 9/10.

Breslow, L. (2010). "An Educational Developer's Autobiography." In Boon, S. Matthew, R., and Sheward, L., eds. *SEDA Special Edition*. London: Staff and Educational Development Association.

Vogel Taylor, E., Mitchell, R., and Drennan, C. (2009). "Creating an Interdisciplinary Introductory Chemistry Course without Time-Intensive Curriculum Changes," *ASC Chemical Biology*, 4(12):979-982.

Vogel Taylor, E., Mitchell, R., and Drennan, C. (2009). "Training Bootcamp Reinforces Curriculum Innovations and Improves Recitation Experience in Freshman Chemistry Course," *MIT Faculty Newsletter*, 21(4):22-25.

Presentations

Breslow, L. "Improving Teaching by Focusing on Learning," Global Human Resources Forum, Seoul, South Korea, November 2009.

Breslow, L. "The Politics of the Scholarship of Teaching and Learning: Examples from MIT," International Society for the Scholarship of Teaching and Learning, Bloomington, IN, October 2009 (with C. Cook and L. McAlpine).

Breslow, L. "A Divide at the Extremes: The Challenge of Assessing Graduate Outcomes for the 21st Century," keynote for the Higher Education Colloquium, University of Edinburgh, May 2009.

Breslow, L. "Transplanting Pedagogies: An Experiment in Small-Group Teaching at MIT," Oxford Learning Institute, May 2009.

Grants and Proposals Submitted

"Developing Engineering Faculty as Leaders of Academic Change," submitted to NSF through Center for the Advancement of Scholarship in Engineering Education/National Academy of Engineering, \$2,500.

"Preliminary Assessment of a Flexible Engineering Degree Program," D. Darmofal, I. Waitz, and L. Breslow, submitted to NSF's Transforming Undergraduate Education in Science Program, May 2010.

Contributions to DUE-wide Initiatives

Members of the TLL staff were involved with almost two dozen different initiatives in collaboration with other DUE offices, including the aforementioned two-day conference to discuss programs and policies to bolster the success of underrepresented minority students (with OME); the NEASC report and presentation (DUE headquarters); Inter-phase assessment (OME); assessment of First-Year Focus subjects (OFS); and the EdTech Fair (OEIT).

Teaching

Breslow: 15.279 Management Communication for Undergraduates, fall 2009.

Majahan: 6.055/2.038 Art of Approximation in Science and Engineering, spring 2010;
5.95J Teaching College-Level Science and Engineering, spring 2010.

Staff Changes

There were no staffing changes in AY2010. However, we wish to make special note of Dr. Lisa Shuler's successful defense of her dissertation in December 2009.

We also wish to acknowledge the support of Daniel Nocivelli, TLL administrative assistant, in all the initiatives described above.

Lori Breslow
Director

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

Office of Undergraduate Advising and Academic Programming

The Office of Undergraduate Advising and Academic Programming sets a standard of excellence in providing quality student-centered services to all undergraduates, and specifically to freshmen, to enhance their academic success, social adjustment, and assimilation to the Institute. To achieve that vision, UAAP provides programming, access to Institute resources, and services that recognize the many needs, diversity, and uniqueness of students at MIT. This work includes coordinating freshman pre-orientation and orientation programs, facilitating academic advising and mentoring relationships, cultivating learning skills, providing academic and personal support through Student Support Services and Student Disabilities Services, and promoting leadership development. Additionally, UROP management, operation, and oversight are UAAP responsibilities, as are the coordination of IAP and staff support to the Committee on Academic Performance.

UAAP leads development of a holistic student experience initiative, a priority identified in DUE's strategic plan. This theme is intended to articulate a holistic approach to the education of our students, setting the standard for undergraduate academic advising and mentorship, defining collaborative initiatives and programs for student leadership development, facilitating reflective practice, and developing global opportunity specifically through the International Undergraduate Research Opportunities Program.

New Initiatives

UAAP's yearlong celebration of UROP's 40th anniversary included:

- IAP 2009 seminar series: UROP@40—Past, Present, and Future
- Cosponsorship of the Boston Undergraduate Research Symposium

- Campus celebration in Lobby 7 with cake for 2,500
- UROP 40th Anniversary Symposium in October 2009
- Production of the video “UROP: Celebrating Discovery”

The video captures the history, development, and impact of UROP on the academic enterprise and student experience through interviews with professor and president emeritus Paul Gray; professor and dean Daniel Hastings; professors Phillip Sharp, Dava Newman, Andrew Lippman, Nancy Kanwisher, and J. Kim Vandiver; Norma Norland, former UROP director and colleague of Margaret MacVicar; and six MIT students.

In addition, UAAP solicited information from all academic departments regarding academic integrity practices and policy; strategies to communicate with and educate new faculty, majors, and graduate students; and department protocols for responding to integrity breaches. The information was compiled in *The Summary of Department Good Practices Regarding Academic Integrity*.

UAAP facilitated the transition of S³ and Student Disabilities Services (SDS) from DSL to DUE, and specifically within UAAP. We completed a strategic planning exercise, including an external review by a team of peers from Harvard University, Boston University, and Brown University, to address the issues and recommendations from the Faculty S³ Task Force Report and to position S³ to successfully move forward.

UAAP has responsibility for sophomore exploratory subjects, including communication strategies and tracking participation. Thirty-six percent (377 of 1,061) of eligible students in fall 2009 and 38 percent (422 of 1,122) in spring 2010 declared an exploratory subject on their registration.

UAAP expanded the initiative to provide support and resources for undergraduate advisors of at-risk students; advisors are identified through the CAP end-of-term process. Training for faculty advisors of students on warning was strategically offered. Almost a dozen faculty attended each of the two programs offered.

Functional Enhancements

We continued to develop “women in leadership” programming by showcasing women speakers. Speakers for the Good to Great seminar included Dr. Paula Evans (Community Charter School of Cambridge), Amy Smith (senior lecturer), professor Nancy Hopkins (Biology) and Dr. Linda Carli (professor at Wellesley and author of *Through the Labyrinth: The Truth About How Women Become Leaders*). Five additional women spoke at the event lecture series. UAAP engaged the Network of Sloan Undergraduate Women, the Graduate Women’s Association, Black Women’s Alliance, the Black Student Business Association, the Panhellenic Association, and the African Students’ Association as partners as event cosponsors. The 2009–2010 lecture series speakers included professor Deborah Ancona (Sloan), lecturer and director of the Writing Program Rebecca Faery, professor Judith Layzer (Urban Studies), professor Sangeeta Bhatia (Health Sciences and Technology) and senior lecturer Lodovica Illari (Earth, Atmospheric and Planetary Sciences).

UAAP fostered leadership development not only through existing UAAP programs (orientation coordinators, orientation leaders, associate advisors, resident associate advisors, UAAP advisory board, the Baker Foundation, pre-orientation program coordinators, etc.), but also through our activities with networks of student groups, such as house governments, the Black Women's Alliance, Chocolate City, the MIT Caribbean Club, the African Students Association, and others.

In anticipation of the arrival of the Class of 2014, UAAP converted the freshman mailing to a virtual, electronic mailing. UAAP and Admissions collaborated to use the admissions portal to make possible not only the hand-off of students from Admissions to UAAP, but also to communicate access instructions.

We facilitated parent registration for orientation by using the Alumni Association Smart-rans System to capture all parent information; the demographic and contact information was subsequently immediately transferred to the Alumni Association database.

Both S³ and SDS have seen an increase in student contacts. In FY2010, the deans in S³ took 4,061 appointments, representing 3,977 contacts with undergraduates and 84 meetings with graduate students. In the same period, SDS had 735 scheduled contacts with students, a 6.5 percent increase over the previous year. The service is witnessing an increase in the complexity of student needs for required accommodations and services. Requests for communication access (for those with hearing impairments) have increased 25 percent (71 requests). Requests for logistical accommodations have also increased 91 percent (42 requests).

S³ developed criteria and guidelines for deploying resources from the Student Emergency Fund.

Criteria and guidelines were developed for withdrawal, readmission, excused absences and excuse notes.

S³ focused on new programming and outreach:

- Held the Returning Students' Dinner to complement the well-established Returning Students Group that is coordinated by an S³ dean and a doctor from MIT Medical.
- Collaborated with ODGE and DSL to maintain and expand support for women, particularly graduate women, on campus.

SDS established partnerships with employers seeking to hire individuals with disabilities. SDS hosted the second annual employment recruitment event for the American Association for the Advancement of Science for MIT students with disabilities and sponsored the first annual employment recruitment event for the Volpe Transportation Center.

UAAP continued to lead the joint DUE/DSL committee that is defining our collective values and generating several short-term projects and long-term strategies for cooperation, collaboration, and effective program execution and transparent integration of stu-

dent life and learning. The committee's two priorities included the new faculty dinner and joint staff development. Twenty-six new faculty attended the dinner in January 2010, hosted by Dean Hastings and Dean Colombo, with a welcome by Chancellor Clay. The programs offered to staff included:

- Eating Healthy, Rebecca Boulos, USDA doctoral fellow in obesity, Tufts University
- Learn about the Class of 2014, Stuart Schmill, dean, MIT Undergraduate Admissions
- Developmental Stages in the Journey from Adolescence to Adulthood, Alan Siegel, chief, MIT Mental Health Services
- Global Education Panel, Alison Hynd, Public Service Center, and Brian Wahl, Global Education and Career Development Center

UAAP continued to participate in fund development efforts and stewardship with respect to UROP gifts and endowment, and funds from the Amgen Foundation, the Baker Foundation, and the Class of 1959. We are committed to identifying and pursuing new resources to support UAAP initiatives, and to that end we strengthened relationships with key development staff. Six new UROP funds were established; we also secured a gift that supports three diversity initiatives involving UAAP, OME, Student Activities, and Admissions.

UAAP continued to expand the academic offerings within the Freshmen Pre-orientation Programs to 15; the new additions for orientation in 2009 included programs in materials science, industrial design, energy, and history. Twenty-two programs were offered during pre-orientation in 2009, with 525 freshmen participating.

In a continued effort to support the academic success of first-year students, we coordinated with the GIR math and science departments' information on reviews and departmental study sessions. Additionally, UAAP offered seven fall learning strategy programs. Online learning strategy modules are also available at <http://mit.edu/uaap/learning/>.

We continued to offer a comprehensive professional development program for freshman advisors, including special workshops for new advisors. Freshmen were advised by 71 faculty plus 154 lecturers, instructors, and administrators; these numbers include those who led the 58 freshman advising seminars offered to the Class of 2013. Advisors were matched with more than 185 associate advisors who served as peer mentors to the first-year students.

Training and ongoing development of associate advisors was an articulated priority. Nine different programs were strategically offered to almost 200 associate advisors throughout the academic year. This training included Mentoring@MIT; Developmental Advising @ MIT; Advising at Mid-Term; Develop Public Speaking Skills; Developmental Advising Continued; End of Term Advising; Selection of Major; Stop, Think, and Move Ahead: Reflective Programming; Great Leaders on Campus; What To Do When Things Aren't Going Perfectly.

We sustained participation of underrepresented minority students as first-year advisors (14 percent), orientation leaders (21 percent), and associate advisors (18 percent—an almost five-fold increase). We continue to work to ensure we have a diverse representation distributed across all racial, ethnic, and residential communities.

UAAP completed an update of the 2008 report, *Best Practices in Undergraduate Advising*. This information was shared with the academic departments.

The three recipients of the UAAP 2010 Institute Convocation awards were professor Alex Slocum (the Arthur Smith Award for Contributions to Student Life and Learning); professor Patrick Winston (the Baker Foundation Award for Excellence in Undergraduate Teaching); and professor David Pritchard (the Earll M. Murman Award for Excellence in Undergraduate Advising).

During IAP 2009, 604 noncredit activities and 104 for-credit subjects were reviewed for listing in the online IAP guide and calendar. Activities or subjects were sponsored by 32 departments, 23 interdisciplinary laboratories and centers, 39 administrative offices, 51 student activities groups, and 15 nonstudent groups. Specific UAAP IAP 2010 activities offered included those on leadership, communication, academic skills; exploration of studies/major/graduate school; skills for academic success; public speaking; ethics; informational panels on the Amgen-UROP program; orientation leader responsibilities; and associate advisor opportunities.

Facilitating an effective, smooth transition to the sophomore year remains a priority. Working closely with the departments and offering appropriate programming has enhanced this effort. Five strategic programs, including three offered during IAP, addressed specific aspects of self-exploration and assessment, academic and research opportunities, development of relationships with faculty, and global opportunities.

UROP/IROP Activities

In summer 2009, fall 2009 and spring 2010, 47 percent of UROP students were female and 53 percent were male. Of undergraduates graduating with their first degree in 2010, 87 percent had participated in at least one UROP during their time at MIT. Seventy-nine percent (145 of 185) of graduating underrepresented minority students participated in UROP, an increase from last year, in which 69 percent participated. We hope to sustain and further increase URM participation by working with OME and through additional outreach to both faculty and students.

During this academic year and summer, 3,829 UROP projects were completed. Fifty-three percent of the academic year projects were paid experiences; this figure is a decrease from the high of 73 percent seen in AY2002. From the comprehensive 2008 UROP survey and assessment, we learned that 80 percent of those students who ended up doing a UROP for credit had originally requested funding and were denied. This continues to be the response reported by UROP participants.

UAAP provided \$2,581,950 in direct funding. Faculty allocated \$3,855,205 in support of UROP. While faculty funding decreased by 2.4 percent from the previous year, the UAAP direct funding offset that decrease. Overall, UROP support increased by 4 per-

cent. Forty-nine percent of MIT faculty members mentor UROP students and 84 percent of all UROP supervisors are faculty. UROP remains the primary mechanism for students to engage with faculty outside of the classroom.

Since the 2007–2008 academic year, the Institute has provided \$400K in additional funding to financially guarantee one term of UROP support for scholarship recipients during their undergraduate career. Particular programming effort was dedicated to cultivating interest and participation among underrepresented and first-generation students. Ongoing tracking, data collection, and analysis continues to be reviewed to assess the efficacy of this program.

UAAP's annual UROP direct funding budget consists of endowment income (46 percent), expendable gifts (25 percent), general Institute funds (27 percent), and foundation grants (2 percent). The book-value of the UROP endowment is \$13.7 million, represented by 48 named endowed funds and 10 named gifts. New funds established in FY2010 include Ferri, Jenez, Katz, Rosenband, Simmons, and the Rosenblum and Morais 40th Anniversary UROP Funds.

In alignment with the values of MIT's global initiative, UAAP executed an ambitious marketing plan and program development, and approved 47 IROP experiences during the past year. These placements occurred in 20 countries, including Australia, Brazil, Canada, Germany, Ghana, Kenya, China, Hungary, India, Italy, Kenya, Lesotho, Singapore, Switzerland, Taiwan, Tanzania, Thailand, the United Kingdom, the United Arab Emirates, and Vietnam.

Future Plans and Initiatives

As UAAP, with both programmatic responsibility and the charge of the holistic theme, sets its goals and objectives for AY2010, the following are currently defined initiatives:

- Carry out a freshman advising pilot in fall 2010; 150 freshmen will be advised by UAAP staff and academic performance, satisfaction, knowledge of resources, etc., will be assessed against the experience of a 150-student control cohort
- Partially finance and coordinate the advising component complementing the first-year subject, D-Lab: Discovery
- Implement the recommendations of the strategic planning group, including the new withdrawal/readmission policy, excused absences and excuse notes guidelines and protocols, expanding office hours, and opening a walk-in period
- Define and design an umbrella database to support all UAAP programming, including first-year programs, advisors, associate advisors, student support services, student disabilities series, and the academic performance of undergraduates
- Collaborate with Academic Media Production Services to identify, track, and document the undergraduate experience of a dozen members of the Class of 2014

- Assess the viability, including reviewing best practices at peer institutions, of a Center for Academic Excellence to develop a comprehensive strategy to support learning strategies, academic success, and mentoring initiatives
- Complete a comprehensive review of the Nightline student-run listening service and implement the final recommendations
- Develop and market IROP and expand participation by working closer with faculty to increase international research opportunities to 50 students
- With the new organization of UAAP that includes the Student Support Services deans, define opportunities with OME to develop strategic programming and support for underrepresented minority student engagement; with both the new director of OME and the new configuration of UAAP, the potential for new opportunity is greater
- Evaluate the viability of converting the application for Freshmen Pre-orientation Programs (26 programs with 550 applicants) to an online system for both the review and selection by individual program sponsors
- Facilitate the transfer of the residential programming component of residence-based advising to DSL; the UAAP will retain responsibility for the advising and academic support function
- Continue identifying initiatives to be sponsor by the joint DUE/DSL committee to facilitate cooperation and collaboration on projects integrating student life and learning
- Develop strategies and proposals for significantly reducing the Freshmen Pre-orientation Programs and orientation period, including prioritizing programming, identifying competing priorities, engaging key stakeholders in the discussion, and moving to consensus on a new orientation model for fall 2012

Staffing Changes

Student Support Services, including SDS, was transferred from DSL to DUE on February 1, 2010. Staff members from those areas were integrated into UAAP. The staff transferred to DUE included one senior associate dean and director (Arnold Henderson), one associate dean (Ayida Mthembu), four assistant deans (Kathleen Monagle, David Randall, James Collins, and Miri Skolnik) and three support staff (Cynthia Sanders, Greg Aimo, and Sheila Barnard).

Julie B. Norman

Senior Associate Dean for Undergraduate Education

Director, Office of Undergraduate Advising and Academic Programming

More information about the Office of Undergraduate Advising and Academic Programming can be found at <http://web.mit.edu/uaap/>.