

# The Inside Scoop on DUE

The Office of the Dean for Undergraduate Education  
February 2008



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## From Good to Great

By Daniel Hastings, Dean of Undergraduate Education  
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In the January offsite, the DUE Office Heads started to consider the question of how DUE will move from being a good organization that serves MIT to being a great organization that serves MIT. This is based on the book "Good to Great" by James Collins. This book examines a set of companies which measured by market returns went from being good companies to great companies. The book suggests several strategies and indicators of greatness. As an interesting contrast, the book examines a matched set of companies which over the same time period did not achieve greatness. An example, that many will appreciate, is the contrast between Walgreens and Eckerd's.

One of the things the books suggests is that each great company has a well defined focused vision which contains clearly articulated indicators of greatness. The book also suggests several other attributes of great organizations such as getting the right people in the right positions and a healthy regard for the brutal facts. The DUE office heads will be spending some time in reflecting on all the measures of greatness for DUE.

With regard to indicators of greatness, the office heads came up with the following draft list:

- All undergraduates graduate with "global" competency
- Students seek MIT because of global education programs
- MIT viewed as a leader in experientially-based global education
- Global experience and competency is integrated across all curricular and co-curricular activity
- MIT alumni are notable leaders in global endeavors
- Efforts are sustainable and not dependent on the current leadership

These are very interesting indicators. If we can help our students and curriculum in these ways, then I think we will all agree that we are helping MIT and DUE become a great organization. I would like to ask all of you to help us as we reflect on these issues



## DUE's Strategic Themes: Catalyze the Undergraduate Commons to Define the Next Generation of MIT Student

By Elizabeth Reed, Senior Associate Dean [sido@mit.edu](mailto:sido@mit.edu)



The Task Force theme is inseparable from DUE's central mission of improving the undergraduate educational experience at MIT. Diana Henderson, Dean for Curriculum and Faculty Support, leads this theme. To summarize the context: "In response to globalization, advances in science and technology as well as the changes in the preparation and learning style of incoming students, the [Task Force on the Undergraduate Educations Commons](#) called for the transformation of the MIT curriculum into a curriculum for the 21<sup>st</sup> century, in its report released in October 2006. It was recommended that this transformation include increased flexibility in the core requirements, definition of a new core SME requirement and HASS first year experience, as well as promotion of collaborative learning and improving advising, assessment and other key aspects of undergraduate education."

With Diana's dynamic leadership and with faculty and staff working hard on many fronts, there has been considerable progress since Daniel Hastings wrote about the Task Force in the March newsletter. DUE is supporting numerous educational experiments focused on project-based learning and HASS subjects, partly with d'Arbeloff and Alumni Funds which the Office of Faculty Support administers. The Teaching and Learning Lab and Office of Faculty Support have been involved with assessing the first-year experimental subjects which the Task Force encouraged as a way to increase freshman motivation and enthusiasm, as well as a way to introduce more active learning in the first year.

DUE is working to provide faculty-related infrastructure to support the new General Institute Requirements (GIRs), including advising materials, a communications strategy and a functional on-line subject evaluation. Staff from the Office of Faculty Support, the Office of Educational Innovation and Technology, and Information Services & Technology are developing this new system for Institute-wide use. It will be piloted in four departments in May. Details available at <http://web.mit.edu/se-project>.

DUE is supporting several faculty committees charged with helping to implement changes recommended by the Task Force. In October 2007, a new subcommittee of the CUP (Committee on the Undergraduate Program) was formed to review feedback on Task Force recommendations released in October 2006, refine and modify them and recommend more specific changes to the curriculum. The subcommittee has made good progress through January 2008 in formulating a modified model for the General Institute Requirements. As the model becomes more concrete, there will be many discussions with the community and stakeholders. Robert Redwine, committee co-chair, anticipates that specific recommendations for CUP will be available by the end of the spring semester.

The Task Force report includes recommendations for improving the quality of classrooms, the mix of classrooms types and class scheduling. Dan Hastings appointed Professor John Brisson to lead a committee which will advise on this aspect of the report.

This theme also encompasses the Task Force's strong mandate for international education. The report urges that we encourage undergraduates to live and work abroad as an essential feature of an MIT undergraduate education and that they be able to do so without financial or academic penalty. GEOMIT, a committee created by the DUE to recommend a strategy for achieving Institute goals for global education, released its report last fall. Many DUE offices are instrumental in realizing MIT's vision for internationalizing the undergraduate experience, most notably the MIT Careers Office, whose Study Abroad and Distinguished Fellowships Office will be a "hub" of expanded efforts.

Expect updates on many initiatives related to the Task Force theme in the months and years ahead!

## Class of 2011 Alumni Connection Luncheon

By Dan Chapman, Staff Associate for Advising and Mentorship, Office of Undergraduate Advising and Academic Programming [dwc@MIT.EDU](mailto:dwc@MIT.EDU)



The Class of 2011 Alumni Connection Luncheon was held on January 31 in the Stratton Student Center. Twenty members of the class of 2011 enjoyed a catered lunch and some sound advice and words of wisdom from members of the Class of 59, 79, and 99.

Dedric Carter 99', Andy Schulert 79', Sharon Wason 79', and Alfredo Kniazzezh 59' spoke about the challenges they faced as undergraduates at MIT, how much has changed since they were undergraduates, and with regard to challenging physics classes, how much seems to have remained the same.

The alumni spoke of challenging the status quo on campus, learning from academic failure and how much one student can affect change on campus. Some of the Class of 2011 members in attendance were surprised to hear that none of the speakers were in careers directly related to their majors at MIT. Rather than the actual classes taken, each alum emphasized how much the p-sets and problem solving skills they developed at MIT has helped them to solve problems in their careers.

The luncheon was sponsored by the [Office of Undergraduate Advising and Academic Programming](#) (UAAP) with the help of an endowment established by the Class of 1959 to enhance the First Year Experience. The UAAP strives to bring dynamic speakers and programs to first year students to help with their transition to MIT and their transition to sophomore year.

## OME Kicks Off

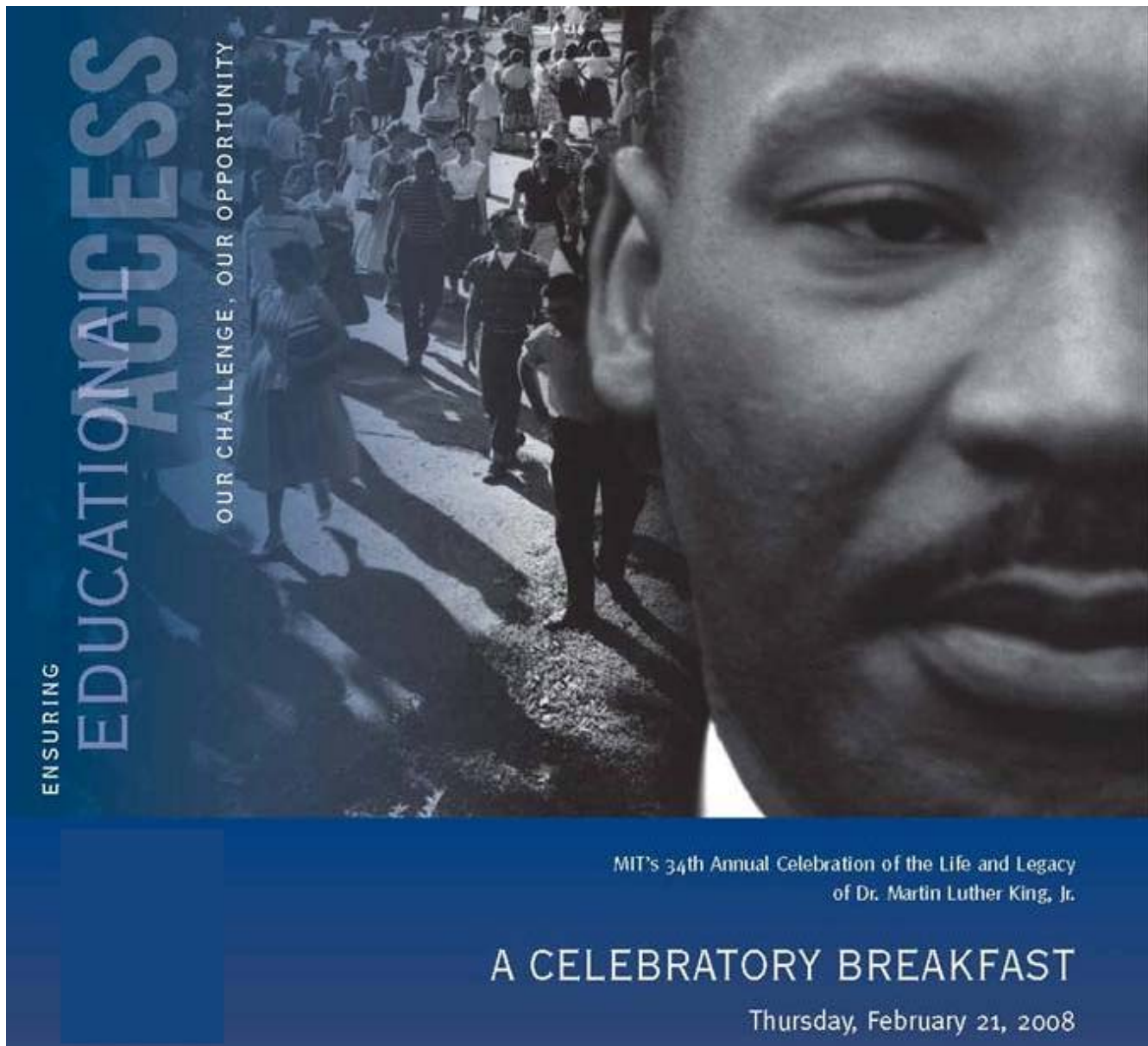
### Mentor Advocate Partnership Program (MAP)

By Lisa Strack, Program Coordinator, Office of Minority Education [lstrack@mit.edu](mailto:lstrack@mit.edu)



On February 12<sup>th</sup>, twenty staff mentors and forty-one undergraduate protégés participated in the 2008 kick-off to the Office of Minority Education's [Mentor Advocate Partnership](#) (MAP) program. Dr. Stacy Blake-Beard, Ph.D., Associate Professor of Management at Simmons College, led an interactive workshop on the dynamic aspects of mentoring and how to make the most of mentoring relationships. The 2008 MAP mentors include staff from Admissions, the Alumni Association, DUE, Human Resources, the Graduate Students Office, HASS, the Public Service Center, the OME, Resource Development, and Student Life. The next step for MAP mentors and protégés involves getting to know each other during the spring semester – building a stronger community at MIT.

MAP is a volunteer mentoring program for first-year MIT students. MAP seeks to foster the holistic development of students along both academic and non-academic dimensions. At the core of MAP is a sincere, trusting partnership between student and staff that has the potential to persist throughout the undergraduate years.



ENSURING  
**EDUCATIONAL ACCESS**  
OUR CHALLENGE, OUR OPPORTUNITY

MIT's 34th Annual Celebration of the Life and Legacy  
of Dr. Martin Luther King, Jr.

**A CELEBRATORY BREAKFAST**

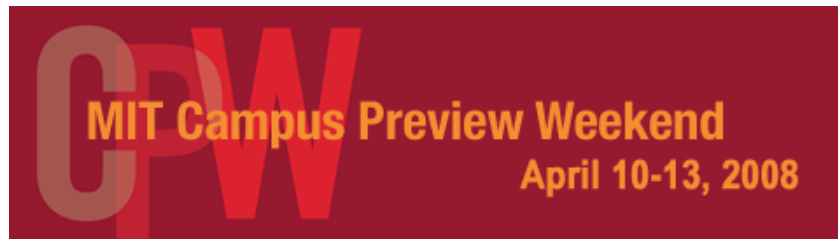
Thursday, February 21, 2008

## MLK Celebratory Breakfast on February 21

The theme of this year's MLK breakfast, "Ensuring Educational Access: Our Challenge, Our Opportunity," will be the focus of Reverend Dr. Ray Hammond's keynote address on February 21. Reverend Dr. Hammond is a local leader who is working to mobilize the Boston community around issues that affect black youth. Reservations for the breakfast can be made at

[http://web.mit.edu/mlking/www/event\\_index.html](http://web.mit.edu/mlking/www/event_index.html).





## Campus Preview Weekend is Just Around the Corner

By Ben Jones, Communications Manager, Admissions [benjones@mit.edu](mailto:benjones@mit.edu)

MIT's annual Campus Preview Weekend (CPW) is coming soon! From Thursday April 10 through Sunday April 13, the Office of Admissions will provide the opportunity for students admitted to the Class of 2012 and their parents to visit MIT and experience all facets of life here.

This is an exciting opportunity for all of us to showcase our offices and work. Last year's CPW featured over 500 events and brought a record 949 prefrash and 800+ parents to campus. CPW is the most important of MIT's yield events: of those who attended CPW last year, 81% chose to enroll at MIT.

We invite you to help make this year's CPW an equal success by spreading the word, publishing an event, or signing up to volunteer. Please visit <http://web.mit.edu/admissions/mitcpw/> to view the schedule and to post your events.

The CPW planning staff can be reached at [cpw@mit.edu](mailto:cpw@mit.edu) or 617-258-6085, and is always happy to answer questions.

Thank you!

### MIT **REWARDS & RECOGNITION** Program

#### *MIT Excellence Awards*

## Shirley Thompson Receives 2008 Excellence Award

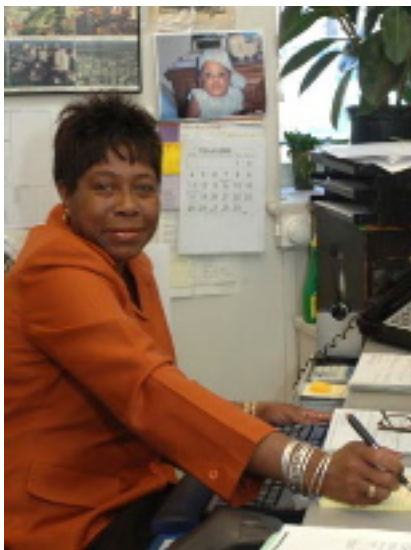


Photo: Donna Coveney

On February 26, Shirley Thompson, Coordinator of Registration Services in the Registrar's Office, will be recognized for the excellent service she provides to faculty and students who look to her for help resolving registration and other academic issues. She will be honored with an MIT Excellence Award in the Serving the Client category. Congratulations!

Read more about Shirley and other Excellence Award recipients at: <http://web.mit.edu/newsoffice/2008/excellence-tt0213.html>.

## Calculating Extra-vehicular Activity --- for Astronauts on the Moon and for Students in Killian Court



By Daniel Sheehan, GIS Specialist

Office of Educational Innovation and Technology [dsheehan@mit.edu](mailto:dsheehan@mit.edu)

Under the guidance of Professors Dava Newman and Jeff Hoffman, Daniel Sheehan of OEIT worked with graduate students Lasse Linqvist (Aero Astro), Joe Essenburg (Mechanical Engineering) and postdoctoral fellow James Waldie to produce a GIS interface to the Java based Path Planner software that was previously developed at MIT. This software calculates metabolic costs and travel time for astronauts' Extra-vehicular Activity (EVA) on the moon and on Mars. The new interface gives students and researchers the capability of evaluating numerous images along with elevation and slope when planning EVAs. This software will be used in 16.00AJ Fundamentals of Engineering Design: Explore! Earth, Sea, Space (one of the project-based learning classes) during the Spring 2008 semester. Students will plan their EVAs (across Killian Court) using the software, and then conduct their field exploration based on the routes they develop with the new software.

## MIT Arab Student Club Reaches Out to Prospective Students in the Middle East

(adapted from an email from Stuart Schmill, Interim Director, Admissions)

Three Arab students representing the MIT Arab Student Club did a tour through the Middle East talking with high school students about science, engineering, and MIT. They made presentations in Saudi Arabia, Lebanon, Syria, and Israel. While the Admissions Office did not sponsor this group, they did help them with materials and connected them with alumni in the area. Alam Alayan, one of the students, sent the following in an email to Admissions during his trip:

"We finished couple of hours ago with a successful presentation in East Jerusalem about applying to MIT, followed by Q&A. Over 260 Arab high school students from over 10 good schools in East Jerusalem have filled the hall. I managed at very short notice this morning to talk a BOSTON GLOBE journalist, Matthew Kalman, to attend our MIT event! I told him that post 9/11 many Arabs across the Arab World started shying away from sending their children to the US and that one of the objectives of the MIT Arab Students Club out of an ongoing tour in the Arab World is to try to reverse this trend."

## Two MIT Students Awarded Gates Cambridge Scholarships

The Distinguished Fellowships Office recently announced that two MIT students, Talia Gershon and Naveen Krishnan, were each awarded the very competitive [Gates Cambridge Scholarship](#). The Gates Cambridge Scholarships are full-cost awards for graduate study and research in any subject available at the University of Cambridge. [Talia Gershon](#) is a Materials Science and Engineering student who plans to pursue a PhD in Materials Science and Metallurgy at Cambridge. [Naveen Krishnan](#) is a Brian and Cognitive Science student who plans to pursue an MPhil in Public Health at Cambridge. Congratulations to both!

## IROP: Taking UROP Overseas

By the UROP Staff - Reprinted from the [UROP Mentor Newsletter](#)



It is no surprise that MIT students seem to continually look for ways to take knowledge developed on campus and use it to make positive differences in foreign cultures and environments. As educators, we know that overseas learning opportunities significantly enhance the overall academic and social development of students, and we are committed to providing a broad selection of these opportunities to MIT undergraduates. Recognizing that UROP research has long played a key role in learning at MIT, it is clear that the Institute's intensified focus on global learning should fully include cultivation and support of international research opportunities.

For the past several years, the [Office for Undergraduate Advising and Academic Programming \(UAAP\)](#) has been providing UROP funding support to students with opportunities to conduct MIT faculty-mentored research in international settings. In past summers, UROP research has taken place in several international settings, including Australia, Japan, Switzerland, Venezuela, Tanzania, Pakistan, Guatemala, and Niger. These undertakings have represented a broad spectrum of research areas and interests, from particle physics studies at the CERN facilities in Geneva, to field studies of water filtration processes in rural South America. We call these projects IROPs: [International Research Opportunities Projects](#).

IROP mirrors the traditional campus-based model in that qualifying projects would have the approval, mentorship, and guidance of an MIT faculty member. Sometimes, undergraduate researchers will accompany MIT faculty to overseas research sites. In other cases, students may receive faculty supervision and mentorship through long distance communications. In all cases, an approved UROP supervisor must be in a position to mentor and evaluate the student's research. In addition, students must be fully aware of travel risk policies and procedures prior to departure. Projects typically take place over the summer.

IROP opportunities will hold many of the same benefits to students offered by conventional study abroad experiences. They will provide the forum for students to connect with individuals from diverse cultural backgrounds, individuals who share similar intellectual goals. "Engaging in a global experience," says Senior Associate Dean and UAAP Director Julie Norman, "enables students to develop leadership potential, expand decision making skills, increase their understanding of ethical challenges, and enhance problem-solving skills. Working, studying or doing research in an international setting can, in many cases, be a transformation experience."

In summer 2007, the UAAP committed 32K in funding support (wages and travel costs) for IROP projects, and anticipates providing similar levels of support in summer 2008. UAAP staff have also developed programming and resources aimed specifically at promoting and supporting IROP research. This programming includes workshops and panel discussions designed to educate students on preparation for global research, its benefits and challenges (including associated risk), and securing funding support.

While the locations may often be more exotic, IROP projects share a key ingredient with on-campus UROP projects: the faculty-student partnership. "We know that there are many students out there that would love to do research overseas," says UAAP Associate Dean Michael Bergren, "and we know that there are MIT faculty that will mentor them, and perhaps even steer them toward these opportunities. The challenge is getting more faculty and students to be aware that there are a number of offices and groups on campus, including the UAAP, who are absolutely committed to supporting these partnerships."

For more information on IROPs, contact UAAP at x3-7306, or [urop@mit.edu](mailto:urop@mit.edu).

## What's an Appropriate Learning Space for Project-based Learning Courses?

By Philip D. Long, Associate Director, OEIT [longpd@mit.edu](mailto:longpd@mit.edu)



MIT is experimenting with extending project-based learning (PBL) courses to freshmen. While a major concern to many faculty has been the time and energy such courses demand, Professor Leslie Norford suggests the challenges for scaling up a PBL pilot course is less about faculty commitment and more about the spaces they will require for effective learning. He wrote in the February, 2007, issue of the MIT Faculty Newsletter:

“More of a barrier is the need for flexible, well-equipped and attractive teaching space that will provide the tools, lab equipment, and work space needed for relatively large groups of students to work.” Les Norford  
<http://web.mit.edu/fnl/volume/194/norford.html>

OEIT operates several flexible-learning spaces including 37-312 (the 2D Visualization Lab), 26-139 (New Media Center), 4-035, an extension of the New Media Center that supports Digital Input/Output Room and 1-142.

Room 1-142 has been configured to support Athena use as a generic Athena cluster, but IS&T usage statistics as well as general observations find that while it can be busy at times, most of the time it isn't. At the same time pilot courses using PBL approaches to teaching have struggled to find places suitable for these hands-on learning experiences. And, as Professor Norford suggests, we know little about the scaling issues associated with providing the infrastructure these kinds of hands-on learning environments require.

In the interests of trying to prototype such new learning environments and better support the PBL courses recommended by the Task Force for the Undergraduate Commons (<http://web.mit.edu/committees/edcommons/index.html>) the design and mission of room 1-142 is changing. We are proceeding in two phases. The first is intended to meet a proximate need for a place to teach “Projects in Microscale Engineering for the Life Sciences”, taught by Professors Dennis Freeman and Martha Gray, and Dr. Alexander Aranyosi (6.07J). Changes being implemented are geared to enable students to:

- develop research ideas in teams and discuss them in an informal ‘living room’ like seating arrangement, equipped with projection for team presentation and mini-lecture
- perform table-top microscopy experiments in micro-fluid flow on benches that can be rearranged as needed
- collect and examine data with workstations at the lab bench tables
- clean up and maintain their lab equipment at a portable sink
- store student project artifacts and research equipment in storage cabinets in the room.

A cross-departmental team led by Josh Allen, Learning Spaces Systems Administrator, OEIT and Phil Long, Associate Director, OEIT and comprising Professor Dennis Freeman, EECS, Lou Graham, Audio Visual Services, Peter Bedrosian, Registrar's Office, Oliver Thomas, IS&T, Brian Murphy, IS&T and Jim Cain, OEIT has been working round the clock to get 1-142 ready for the first phase, and the new prototype space was launched in time for usage by 6.07J for the Spring 2008 semester. The budget was supported by OEIT and the DUE Head Office.

A more expansive vision for this project-based learning prototyping space has been developed as part of a CRSP proposal to support Phase 2. The changes proposed here extend the learning space design making it more ergonomic and to allow us to know better how it is being used by:

## Learning Spaces for Project-based Learning Courses (continued)

- changing the fluorescent lighting and electrical wiring to support more natural work group lighting for project activities
- relocation of electrical and data outlets intended to support flexible room configuration options.
- adding storage space is required in the room for project artifacts and team materials.
- adding a counter and plumbed sink on one wall for use by those courses that require a minimal clean up capacity as well as for student hygiene after project work
- replacing the wall surfaces with writeable surfaces, many with digital capture capability
- installing sensing devices to collect data on room usage similar to the those installed currently in the PlaceLab<sup>1</sup> including:
  - **State sensors.** Small, wired and wireless sensors located on the objects that people touch and use, including cabinet doors and drawers, controls, furniture, passage doors, windows, containers, etc. They detect on-off, open-closed, and object movement events.
  - **Location beacons.** Radio frequency devices permit the identity and approximate position detection of people within the PBL learning lab.
  - **Audio sensing.** Nearly invisible microphones are installed in each interior component to capture audio.<sup>2</sup>
  - **Still image and video capture.** A video capture system to process images captured by discreetly placed visible light and infrared cameras installed behind panels in interior components.<sup>2</sup>

**The Evolving Role of Project-based Learning “Lab”:** In the new project-based configuration we anticipate the useful room capacity to actually decrease somewhat relative to when it was dedicated to maximize access to Athena workstations. This is a result of the need to accommodate project space for PBL teams. However, average usage is likely to increase more as project classes take advantage of this new resource.

**Moving Toward Blended Use:** We intend to experiment with combinations of scheduled PBL class use and ad-hoc student access open access as we understand the nature and times when project activities can be ‘put away’ between sessions and when they can’t. Insuring that there is secure and sufficient storage for project artifacts is one issue. Another is simply when it is and isn’t appropriate to move partially built or “in-process” components of a project activity. We want to explore making the space as useful and accessible to students as possible, without compromising the project courses.

Student focus groups suggest that collaborative work spaces that have room to ‘spread out’ and technologies aligned with the group activities will significantly enhance the delivered value from such spaces. These are characteristics typically associated with project-based learning spaces, as well. We seek to understand how to make these spaces most effective for diverse learning activities such as project-based learning, and identify the most efficient ways to scale them to provide both effective and affordable new learning environments for MIT in the 21<sup>st</sup> century.

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<sup>1</sup> MIT House\_n Consortium and TIAX, LLC manage and run this research facility where new technologies and design concepts can be tested and evaluated in the context of everyday living.

<sup>2</sup> Note that use of both audio and video capture requires appropriate review and permission by COHUES and compliance to insure privacy and personal data are protected.

## DUE "Out and About"

By Fran Marrone, Senior Administrative Assistant, DUE [franm@MIT.EDU](mailto:franm@MIT.EDU)

This past fall/winter DUE hosted two well-attended events the first of which was held on Tuesday, November 13<sup>th</sup>. Our DUE Community attended a "welcome" celebration when the new DUE Headquarters officially opened the doors to its new home at 7 - 133 and 7 -139. The new headquarters brings together the Dean's Office, Human Resources, Communications, and Finance and Administration. By happy coincidence, the new DUE-HQ carries on the tradition of the former UESA, Undergraduate Education and Student Affairs, when Dean Rosalind Williams and her staff called the location home.

Next DUE was happy to host its year-end celebration at the Cambridge Marriott Hotel on the evening of Monday December 10<sup>th</sup>. The well-attended reception offered an opportunity for the DUE community to mix, mingle and share some good cheer with other colleagues and their guests.

D.J.s Xiao Wei Chen '09 and Byron Hsu '09 spun music as guests danced away. Gift certificates from vendors such as Bertucci's Restaurant, the Cambridge Marriott Hotel, the Boston Bruins, Royal East Restaurant and Legal Seafood were donated as prizes. Raffle winners included Justin Riley, Gen Filiault, Heidi Demers, Karl Reid, Karina Vielma, Chuck Shubert, Lan Wang, Debbie Riparo, Sekazi Mtingwa, Jeanne Hillery, Emily Bassett, Judy Leonard, Jason Schumaker Violeta Ivanova, Susan Wilson, Leo McGonagle, Lori Breslow, and Dan Marshall.

A year in the life of DUE moves so quickly that plans are already underway for Holiday Party 08.

