

http://web.mit.edu/fnl

# MIT Faculty Newsletter

**This issue** features Rafael Bras' From The Faculty Chair piece offering discussion points for defining the Institute's role internationally (page 3); the first in a series of articles by Olivier de Weck on "unusual" MIT professorships, "Professors of the Practice" (page 7); our new MIT Reprints feature, "A Beer with J. R. R. Tolkien" by Jay Keyser (page15); and an article discussing what's done with the information gathered from all those surveys we're asked to take, "Not Another Survey!" (page 16).



# **Comment on the FPC Suggestions on Faculty Governance**

#### Lotte Bailyn, Stephen Graves, Kim Vandiver

**AS PREVIOUS CHAIRS OF THE FACULTY**, we have been asked to comment on the Faculty Policy Committee's (FPC) suggestions to improve faculty governance, which were published in the last issue of the *Faculty Newsletter* (Vol. XVII No. 1, September/October 2004).

We appreciate very much and applaud the effort by the FPC on this important undertaking. We find the report to be useful in characterizing the MIT faculty governance structure and processes and in codifying the roles of the officers and committees. We agree with the view that strong faculty governance is essential to the well being of MIT, and that effective faculty governance requires substantial faculty involvement and commitment. We agree with the FPC assessment that the current system has served us well, and that we have had a very healthy relationship between faculty and administration for a good period of time. As the report states, "Nobody considers the system broken, but ... improvements are possible...."

We provide our reactions to the FPC report in a collegial spirit with the intent to foster more discussion and debate on the issues and ideas raised in the FPC report. We comment on five proposed changes that we have identified in the report.

# A University Residential Community at MIT

#### Paul E. Gray

**THIS ARTICLE IS INTENDED TO ADDRESS** questions about the purpose and status of an activity that is called A University Residential Community (URC) at MIT. URC represents the interests and efforts of a group of nine individuals incorporated as URC, LLC. The members include: Paul Grayson and Charles Harris, emeriti faculty at the Harvard School of Design; Carl Sapers, professor emeritus at the Law School; Richard Dober, a school and university planner; Neil Harper, a graduate of the MIT Civil Engineering department; Bob Simha, retired planning officer here; Kay Stratton; Priscilla Gray and myself.

About two years ago, Paul Grayson brought together six of the people named above to ascertain interest in his concept of a different mode of housing for persons at or near retirement. Called "Aging In Place," it would include physical arrangements appropriate to persons with disabilities or limitations on mobility (i.e., doorways wide enough for a wheelchair, walk-in showers, etc.) in a building as close as possible to the Institute. The building would have common spaces, and a concierge with the resources and ability to provide services such as transportation, shopping, cleaning, housekeeping, home nursing care, etc.

# contents

The MIT Faculty Newsletter Editorial Board	Vol. XVI	l No. 2	November/December 2004
Alice Amsden Urban Studies and Planning Jeanne S. Bamberger		01	Comment on the FPC Suggestions on Faculty Governance Lotte Bailyn, Stephen Graves, Kim Vandiver
Music and Theater Arts		01	A University Residential Community at MIT
John Belcher Physics			Paul E. Gray
*Nazli Choucri Political Science Erik Demaine	From The Faculty Chair	03	Institutional Level International Engagements: Points for Discussion Rafael L. Bras
Electrical Engineering & Computer Science *Olivier de Weck Aeronautics & Astronautics/Engineering Systems		07	Professors of the Practice: Bringing the Real World to MIT
Ernst G. Frankel Ocean Engineering			Olivier de Weck
*Stephen C. Graves Management Science and Engineering Systems	Research at MIT	10	The Industrial Performance Center Richard K. Lester
<b>Jean E. Jackson</b> Anthropology		12	President Appoints Medical Care Task Force
Gordon Kaufman Management Science and Statistics		13	Assessment of Teaching Facilities Continues
Daniel S. Kemp Chemistry	MIT Poetry	14	Watching the One-Eyed Hawk
Samuel J. Keyser Linguistics & Philosophy			
Ionathan King Biology	MIT Reprints	15	A Beer with J. R. R. Tolkien Samuel Jay Keyser
Stephen J. Lippard Chemistry		16	Not Another Survey! Lydia Snover, Gregory A. Harris
David H. Marks Civil and Environmental Engineering	Letters	19	The Role of the Faculty Newsletter
*Fred Moavenzadeh Civil and Environmental Engineering		19	Faculty Mentor Program – Faculty & Athletes:
Ronald Prinn Earth, Atmospheric and Planetary Sciences			A Winning Combination
David Thorburn Literature	M.I.T. Numbers	20	Percentage of Faculty with Highest Degree from MIT; Awarding Institution of Highest Degree
George Verghese Electrical Engineering and Computer Science	Photo credits: Pages 1 an	d 9. NASA .	Johnson Space Flight Center

Electrical Engineering and Computer **Rosalind H. Williams** STS and Writing

Kathryn A. Willmore

Vice President and Secretary of the Corporation **David Lewis** 

Managing Editor

\*Editorial Sub-Committee for this issue

Address MIT Faculty Newsletter Bldg. 11-268

Cambridge, MA 02139 Website http://web.mit.edu/fnl

Telephone 617-253-7303 Fax 617-253-0458 Email fnl@mit.edu

**Subscriptions** \$15/year on campus \$20/year off campus Photo credits: Pages 1 and 9, NASA Johnson Space Flight Center

## From The Faculty Chair Institutional Level International Engagements: Points for Discussion

**OVER THE LAST DECADE**, MIT has increased its overseas presence. Most would agree that such worldview is appropriate for a university like ours. Nevertheless many faculty, the Faculty Policy Committee (FPC), and many colleagues in the administration, would like to develop a robust and transparent process to decide how and with whom should we establish significant institutional level relationships. Questions abound: Are we using the most effective mechanisms in existing arrangements? Are there principles to guide decisions to engage internationally? Who makes the decision? Are present arrangements impacting the ability of the faculty to engage with our own students? What constitutes a "significant institutional relationship" requiring a special process for decision-making?

It is important to realize that MIT has been involved in international activities for 40 years or more. Some of these engagements have been large. They were varied in scope, ranging from improving nutrition in less-developed countries, to developing research and educational capabilities in various locations around the world. They have involved exchanges of students, scholars, and faculty. Some were controversial, like efforts to bring large numbers of students from Iran and Taiwan in the early 1970s.

There are a wide variety of ongoing, large, international efforts in places like China, Taiwan, Thailand, Malaysia, Ireland, Singapore, and England (with Cambridge University). The last two are arguably the flagships of present activities, dominant by the number of faculty, students, and resources involved. In addition, there are one-of-a-kind programs, very different in nature, such as the Alliance for Global Sustainability, MISTI (MIT International Science and Technology Initiative), and arguably OCW (OpenCourseWare), given its worldwide reach.

It is also important to acknowledge that attempts have been made to evaluate international engagements and put in place advisory bodies to help the engagement decision. There was a committee on "International Institutional Commitments" in the 1970s. A committee chaired by Gene Skolnikoff wrote "The International Relationships of MIT in a Technologically Competitive World" in 1991. In 1996 the International Council was formed, chaired by the then Associate Provost Phil Clay. The Council was effective in discussing general issues, but was apparently unable to pass definitive judgment on proposals.

The one conclusion we can definitely reach is that sufficient experience exists for us to infer best practices and improve on process.

There is general agreement that international engagements at all levels must abide by a series of transparent, welldefined, principles. Several have been suggested. The Skolnikoff committee enunciated five distinct principles that reflected the fact that at the time the U.S. found itself falling behind technology and productivity gains in other countries, particularly Japan. MIT was being criticized for educating the competition, and hence a great deal of emphasis was given to the American roots of the Institute. Rafael L. Bras

Conversations with Provost Brown and Chancellor Clay and discussions in FPC yield the following potential set of operating principles for current international engagement:

- 1. The effort has to be "mission centric" to MIT's focus in education and research. It should not be a service.
- 2. The use of the MIT name and brand must be protected and regulated.
- 3. Political and social sensitivities must be addressed. MIT should always stand by its policies relative to open access and information.
- 4. Faculty time is a major resource; MIT faculty must be clearly behind the effort in significant numbers for major projects.
- 5. Each major effort must have an MIT officer/dean behind it, guaranteeing performance and delivery of expectations at the institutional level.
- 6. The effort must be sustainable in the long run economically and intellectually. It should have long horizons.
- 7. MIT does not outsource the granting of degrees.
- 8. Significant international efforts should not detract from our ability to serve our students.
- 9. Care is needed to make sure that activities do not create uneven loads on faculty not involved in the programs.
- 10. Guidelines on pricing and costs are necessary for consistency.

continued on next page

#### Institutional Level Engagements Bras, from preceding page

In contrast to the Skolnikoff committee principles, the above set takes involvement for granted, and does not struggle with the national identity of the institution.

There is an ill-defined category of "minor" projects, involving one or a few faculty, that consensus opinion suggests should not have to go through unusual compromising quality), all constitute reasons for institutional level review and approval. I would also argue that projects of large dollar value generally come with large expectations that require institutional review and management. Large dollar value is normally related to the involvement of significant numbers of students, staff, and/or faculty, another criteria for defining "significant." Projects with "capacity building" as an objective

## The issues of social and political sensitivities are possibly the most troublesome....It is [also] still not clear how to carry out the institutional level review and approval of significant projects....

scrutiny. Some of the operating principles given above are codified in MIT OSP policies, or are self-policed for activities involving a few faculty and students, and relatively small amounts of money. The first three items above fall in that category. The issues of social and political sensitivities are possibly the most troublesome. It can be argued, though, that established policies of openness of publications; of access by individuals irrelevant of race, religion, gender, or sexual orientation; and travel restrictions related to safety, would cover the engagements of individual faculty and students involved in research and education internationally.

# Defining a signifcant institutional engagement

What then defines a significant institutional engagement? What requires institutional level review and approval? The last seven of the enunciated principles indirectly define such efforts. I would argue that: involvement in educational exchanges; degree granting activities; use of MIT's name in any form in relation to a degree or educational program; differential treatment of blocks of individuals in the admission process (note that this does not necessarily imply should be subject to institutional review. Projects committing faculty, staff, and students to long absences from the campus should be considered "significant." Projects involving supplemental faculty compensation or arrangements outside sponsored research norms should have institutional level review and approval.

It is still not clear how to carry out the institutional level review and approval of significant projects or how to make the decision to commit MIT to a project. To me the second part of the question is clearer; commitment decisions of this nature must reside in the hands of the top administrative officers of MIT. Logically the Chancellor, Provost, and President should be involved and their consensus should carry the day. But the safeguarding of principles (the first part of the question) and the discussion of the extent to which proposals satisfy the principles, whatever they may be, should be in the hands of a standing faculty committee with representation of the Faculty Policy Committee. One could imagine an iterative process like the one currently in place to approve new degrees, culminating in a presentation to the faculty (if FPC deems it appropriate and necessary) and a decision by the top administrative officers. Such a process is not that different from what effectively goes on now; it is a matter of articulating the principles, codifying the steps, and insisting on equal treatment for all proposals.

A much harder question being discussed in the Faculty Policy Committee is whether MIT should have an overarching strategy to engage in significant international activities at the institutional level. Such a strategy may be taken to imply that large international activities may be best driven from the administration, rather than from traditional faculty sources. Ongoing projects fall into both categories. A strategy could have a geographical element, with MIT choosing to develop in specific areas. A strategy could focus on partnering with sister institutions of comparable quality to create a virtual network of MIT education. The Skolnikoff committee enunciated the MIT mission as: "MIT is a research university committed to fostering education and advancing knowledge for the betterment of the human condition." A strategy could then argue that within that mission MIT should focus on improving the conditions in the developing world. OCW would fall largely in that category, with a unique use of technology that on its own could also be an element of a strategy. Or alternatively, a strategy could only focus on the developed world.

The Faculty Policy Committee is in the midst of collecting information and learning about the multiple dimensions of the question of MIT's engagement in international programs. This discussion is simply the beginning. FPC invites your input. We hope to converge to some recommendations, to be presented in the *Faculty Newsletter* and discussed in a faculty meeting early next spring term.

**Rafael L. Bras** is a Professor, Civil and Environmental Engineering and Earth, Atmospheric and Planetary Sciences; Faculty Chair (*rlbras@mit.edu*).

#### **Comment on FPC Suggestions** Bailyn, Graves, and Vandiver from page 1

Increase the stature of the office of the faculty chair with more resources – people, space, and budget. Certainly more resources are always nice, but we are not sure about the rationale or justification for making this expenditure. In our experience, we found that we had adequate support for normal business, and could work with the administration to find extra resources if and when needed. We also worry, in general, that adding space and staff would result in more bureaucracy, with minimal benefits.

Increase the term of the faculty officers from 2 to 3 years. We would prefer to keep these terms at two years. The primary reason is that this permits 50% more people to be involved – and the more people that can be involved, the stronger will be the faculty governance system. We also worry that a longer term will dissuade some from participating, as the time commitment would be too great. Indeed, including the year as an active chair-elect, someone would need to dedicate four years when assuming the role of the faculty chair.

Increase faculty attendance at faculty meetings. The report suggests several tactics to doing so including having the meetings chaired by the faculty chair, designating department representatives to attend, changing the agenda to make it more relevant, changing the time, etc. Though we are not sure that all of these would lead to greater attendance, we would welcome experimentation to improve faculty meetings and increase participation. Certainly we can do a better job at designing the meetings so that they are an efficient use of everyone's time, and so that they are of more interest to faculty. Nevertheless, we don't regard the status quo as indicative of a major problem in faculty governance. On the contrary, we feel it is more indicative of the overall good relations between the faculty and the administration. When issues arise in this relationship, faculty meetings become large. Our view is that the meetings are there if we need them, and they are a good forum for awards, for putting information out to the community, and for presenting/discussing findings of ad hoc committees. The faculty meetings tend not to be a good forum for typical business, which is done better by the standing committees (e.g., new degrees, changes to requirements); but they do provide an important check on the work of the committees.

We also regard having the faculty meetings chaired by the president as a good thing and not to be given up lightly. At MIT, the president must show up at faculty meetings; indeed, the third Wednesday of each month during the academic year has been a no-travel-day for President Vest. The president chairing the meetings actually makes him/her accountable to the faculty. When the administration really angers the faculty, the president cannot duck but has to show up and face the music. Also, at divisive times, the president can play a calming role, as was the case, we are told, with President Howard Johnson in the late '60s.

Increase the size of FPC, and enhance its role in the coordination and oversight of the entire faculty governance structure. We agree that we could and should improve the role and status of FPC so that it does a better job of coordination, communication, and oversight for the faculty governance system as a whole. Having liaisons to the standing committees and regular communication with these committees are very good ideas. If this would require more faculty on the committee, an argument could be made for that. Otherwise, we are not sure that an expansion of its role necessarily requires an increase in the size of the FPC, but we would want to ensure a high ratio of faculty relative to others on the committee. We also expect, given this greater role for the FPC, that there should be even more care and deliberation in choosing the composition of the committee, so that it is representative of the faculty.

Increase the role of the faculty chair in the nomination process. In particular, the report proposes that the outgoing chair would select the nominating committee; currently the president does this. This is potentially the most significant change proposed by the FPC. This idea would address a perception that the nominating committee is too close to the administration, but we don't fully agree with this perception. Nor are we sure that the faculty chair should be involved in the choice of his or her successor. Perhaps the nominating committee might be chosen based on inputs from the faculty officers. A lessradical change might have the president and outgoing chair work together to select the nominating committee.

In addition to these proposed changes, the document spells out the roles and responsibilities for the faculty officers. This is most useful as a guide, but we would hope to avoid rigid job definitions that might inhibit spontaneity and innovation. We would worry that having very explicit roles/responsibilities written "in stone" would reduce some degree of flexibility that we might like to have.

Finally, in light of the change of administration, we would encourage some patience in exploring these ideas. During the Vest presidency, there has been an extremely positive working relationship between the administration and the faculty governance system. We would expect to continue this with President Hockfield. As President Hockfield sets up her administration, she will need some time to learn about and appreciate our faculty governance system, its strengths and weaknesses. Perhaps it would be wiser to wait until this new relationship has been established before contemplating any major change.

Lotte Bailyn is a Professor of Management (*Ibailyn@mit.edu*). Stephen Graves is a Professor of Management (*sgraves@mit.edu*). Kim Vandiver is a Professor, Department of Ocean Engineering; Dean for Undergraduate Research (*kimv@mit.edu*).

#### A University Residential Community Gray, from page 1

While the cost of the concierge and other common facilities would be shared among the residents, services provided to any resident would be paid for by the user. In this respect, the URC idea draws from the model of Beacon Hill Village, in which participants living in their homes receive services as required through an office that is on call 24/7.

### 100 to 150 units in the URC building will be needed to share common costs.

URC came together in the spring of 2003 to develop and, if feasible, implement this private development. With the help of the MIT Office of the Provost, we surveyed the population of retired and active MIT people age 55 and older. This survey revealed considerable interest in the concept, particularly from families now living in the suburbs who were eager to move to smaller residences close to MIT. The survey gave us much information about the needs and desires of potential participants. We also had valuable advice from the real estate group in the MIT treasurer's office.

We also decided that the facility should not be restricted to persons near or in retirement, but that MIT (or Harvard) related persons of any age would be welcome. Inasmuch as Cambridge requires that 15% of the units in any residential construction must be priced for persons of average income, younger members of the MIT community might wish to live in our building.

At the same time we sought legal advice from Palmer and Dodge, LLC, and moved to incorporation in January 2004.

We also held discussions with the leadership of the MIT Medical Department and learned that a relationship with a URC residence was seen as feasible and desirable. URC residents who were not members of an MIT Health Plan would be welcome to join, and arrangements might be made to have, on a part-time basis, a nurse practitioner present at a limitedservice medical office in the building.

Last spring we held two meetings at MIT to which we invited about 400 persons who had expressed interest in hearing about our plans. Those meetings, and interest expressed since then, have generated a group of about 60 individuals or families who have made \$1000 fully refundable deposits. We believe we need 100 to 150 units in the URC building to share the costs of common space and services. That scale suggests that we must have 70 to 100 firm commitments to move ahead.

Throughout this year we have been searching for a suitable site and an arrangement with a developer who would work with us to create a building that would meet our needs. This effort has identified several sites within 10-15 minute walks of MIT. Our efforts are now focused on a site on the east side of Third Street (#350) just north of the office building on the corner of Main and Third Streets. The developer has in hand permits for a 300-unit, 24-story apartment building, and is prepared to modify the building to accommodate our needs, including 100 to 150 units ranging in size from one bedroom to three bedrooms that would be built and sold as condominiums. The building will include an exercise facility, retail shops on the ground floor, and underground parking. Purchase costs are estimated to be in the range of \$600 to \$900 per square foot, depending in part on elevation in the building. These estimates reflect the costs of upscale construction and amenities in Cambridge and Boston. Unit sizes will range from just

under 1000 square feet for a one-bedroom unit to about 2000 square feet for a threebedroom unit. Because permits have been issued, occupancy could be as early as mid 2006.

## Purchase costs are estimated to be in the range of \$600 to \$900 per square foot . . .

The area around this site is undergoing rapid redevelopment. Nearby are the new Genzyme headquarters of the Corporation and Laboratories for the Vertex Corporation. In addition the development will include the Constellation Center, which will have music and film performance facilities. (See http://www.constellationcenter.org/loca.htm.) Adjacent to the residence, the developers propose to build a new boutique hotel that will offer catering services to the URC residents. A small number of additional loft condominiums are also proposed for a neighboring site east of the residence.

We hope to conclude negotiations with the chosen developer very soon. We will soon thereafter provide specific illustrations of unit accommodations, common facilities and prices, as well as of the building in general. At that time we will seek firm commitments and significant down payments from persons who wish to live in the University Residential Community at MIT.

For more information, please visit our Website at *http://web.mit.edu/ir/urc/*, or contact me (x3-4665) or Bob Simha (617-876-6977).

**Paul E. Gray** is a Professor of Electrical Engineering; President Emeritus (*pogo@mit.edu*).

## Professors of the Practice: Bringing the Real World to MIT

**Olivier de Weck** 

#### **Origins and Intent**

MIT HAS A LONG TRADITION of making its research and scholarship, as well as its educational programs, relevant to the real world. But there is a fundamental dilemma in terms of how faculty traditionally enter academia and how they experience and relate to industrial and government practice during their tenure. The typical path is for a young scientist or engineer to join the tenure track as an assistant professor in their late 20s or early 30s. In many cases, this is preceded by a few years of experience as a postdoctoral researcher or industry professional. Yet the rigors of a busy academic life often deprive them of gaining and passing on life lessons and professional experiences similar to those of their peers in industry and government.

Many MIT professors are strongly connected to the outside world via consulting, entrepreneurship, and sabbatical leaves. But the résumés of experienced professionals in industry do not typically meet the traditional criteria for awarding tenure at a leading research university (particularly with respect to publications in peer-reviewed scientific journals). So how could the depth and experience of decades of professional experience be made available to our students, research staff, and faculty? This was a central question that MIT's leadership focused on in the mid- to late-'90s.

Ultimately, their deliberations led to a formal proposal for the creation of new appointments for Professors of the Practice and Associate Professors of the Practice. The proposal, originally advocated by Bill Mitchell, then dean of Architecture and Planning, Bob Brown then dean of Engineering, and Joel Moses, then provost, was formally approved at a meeting of the MIT faculty on May 21, 1997. The following excerpt most succinctly presents the context and rationale for the appointments of Professors of the Practice:

"In many fields at MIT there is a need to bring in outstanding practitioners, in various roles, to support our teaching and research efforts. In practice-based fields such as architecture, where offering a professional masters degree is the core teaching commitment, recruitment of outstanding practitioners is crucial to an outstanding educational program.

We seek practitioners who are successful, influential leaders in their fields – just as we seek researchers and scholars with these qualities. However, the demands of active, successful professional practice frequently are so great that they do not simultaneously allow full-time academic appointments. It is therefore highly unrealistic to require all practice-based appointments to be fulltime."

The central objective was to allow MIT to attract and retain practitioners of comparable quality to its professors, associate professors, and assistant professors. In practice-oriented fields such as architecture, this new policy was to allow MIT to compete effectively with other top schools such as Harvard, Yale, Princeton, and Columbia, which have distinguished rosters of leading practitioners, many of whom teach on a part-time basis.

The new policy was put in place to give schools and departments the flexibility to enhance the breadth and quality of their educational offerings, and to increase their overall quality by attracting the very best practitioners to their ranks. At the same time, this had to be balanced against the desire by some to limit the number of

### Professors of the Practice allow MIT to retain practitioners of comparable quality to its professors.

such appointments. There was also a desire to accomplish these objectives without in any way altering policy with respect to standard faculty appointments. The new appointments are flexible enough to cover both full-time oncampus faculty who return to academia after accomplished careers in industry and government, as well as those parttime senior people who are still active in their careers, in some cases far away from the Institute. [MIT Policies and Procedures, sections 2.3.2 and 2.3.3.] Finally, the number of all such appointments -Adjunct Professor, Adjunct Associate Professor, Professor of the Practice and Associate Professor of the Practice - is limited to 10 percent of the faculty in each department of the School of Architecture and Planning, and to five percent of the faculty in each department in the other schools.

#### **Current Professors of the Practice**

Seven years after the Professor of the Practice positions were created, a number of schools and departments have taken

continued on next page

**Professors of the Practice** de Weck, from preceding page

advantage of this new opportunity. As of June 2004, MIT had made 14 current appointments to Professor of the Practice positions (see table).

The overview in the table shows the breadth and depth of expertise represented by our colleagues who are Professors of the Practice. It is evident that they represent the very best practioners in various fields of science, engineering, and medicine. A number of them are members of the National Academies and all of them have undergone a rigorous review and appointment process, which mirrors the rigors of the tenure process. It must be said, however, that the current 14 Professors of the Practice represent less than 2% of the MIT faculty. While Adjunct Professors are not counted in this list, we suspect that many departments have not yet realized the full potential that this new category of professors gives them to improve the quality of their research and educational programs.

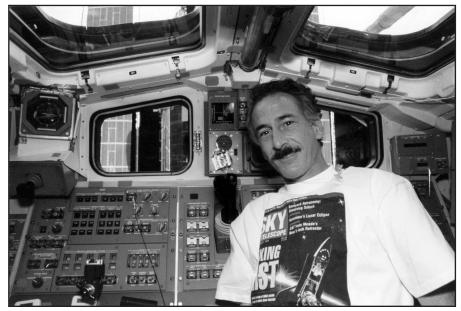
# Jeffrey A. Hoffman, Astrophysicist, Astronaut, Professor

Jeffrey Hoffman perhaps best exemplifies the intent and impact of this new type of professorship on MIT. Dr. Jeff Hoffman embodies the dream of many of the sophomores who choose to enter Course 16 (Aeronautics and Astronautics) at the beginning of their sophomore year. He earned a doctorate in astrophysics from Harvard University in 1971, with original research interests in high-energy astrophysics, specifically cosmic gamma ray and x-ray astronomy. He also worked in the Center for Space Research at MIT from 1975 to 1978 as project scientist in charge of the orbiting HEAO-1 hard x-ray and gamma ray experiment, launched in August 1977.

Selected by NASA in January 1978, Dr. Hoffman became an astronaut in August 1979. He made his first space flight as a mission specialist on STS 51-D (April 1985) on the Shuttle Discovery. On this mission, he made the first STS contingency space walk, in an attempted rescue

Professors of the Practice (as of June 2004)					
Name	Affiliation (Dept. of)	Areas of Practice			
Alex d'Arbeloff	Sloan School of Management	Founder, Teradyne Inc., former Chairman, MIT Corporation			
Brian "Tony" Ciochetti	Urban Studies & Planning	Real estate develop- ment & asset manage- ment, mortgage risk			
Dennis Frenchman	Urban Studies & Planning	Urban design, advanced media and the design of public places			
David Herbein	Ocean Engineering	Captain, U.S. Navy, naval architecture & engineering			
Jeffrey Hoffman	Aeronautics & Astronautics	Former NASA astro- naut, human space exploration, astrophysics			
Andrew Kadak	Nuclear Engineering	Reactor physics & engi- neering, safety analysis, economics			
Gail Kendall	Mechanical Engineering	Alternative post-petrole- um energy sources & mobility			
Robert Liebeck*	Aeronautics & Astronautics	Advanced aircraft & aerodynamic design, Boeing Phantom Works			
Christopher Magee*	Engineering Systems Division/Mechanical Engineering	Material science, advanced vehicle devel- opment at Ford			
Timothy McCoy	Ocean Engineering	Commander, U.S. Navy, ship design, hybrid elec- tric sea vehicles			
Ceasar McDowell	Urban Studies & Planning	Community building, culture, information technology			
Deborah Nightingale*	Engineering Systems Division/Aeronautics & Astronautics	Lean manufacturing, enterprise engineering, management			
Joel Schindall	Electrical Engineeering & Computer Science	Communications satel- lites, former chief engi- neer, Globalstar LLP			
Edward Scolnick*	Biology	Drug development, neu- roscience, psychiatric genomics			

\* Indicates members of the National Academies of Engineering, Medicine, or Science



Astronaut Jeffrey Hoffman in the Space Shuttle

of a malfunctioning satellite. This was followed by a flight on STS-35 (December 1990) on the Shuttle Columbia and flight STS-46 (July-August 1992) on the Shuttle Atlantis. This third mission is well known for its first test flight of the Tethered Satellite System (TSS), a joint project between NASA and the Italian Space Agency. Dr. Hoffman made his fourth flight as an EVA crewmember on STS-61 (December 1993) on the Shuttle Endeavour. During this flight, the Hubble Space Telescope (HST) was captured, serviced, and restored to full capacity through a record five space walks by four astronauts, including Hoffman. Dr. Hoffman last flew on STS-75 (February-March 1996) on the Shuttle Columbia. During this mission, Dr. Hoffman became the first astronaut to log 1000 hours aboard the Space Shuttle.

Dr. Hoffman left the astronaut program in July 1997 to become NASA's European Representative in Paris, where he served until August 2001. He was then seconded by NASA to MIT, where he is now a Professor of the Practice in the Department of Aeronautics and Astronautics. Dr. Hoffman had always kept his ties with MIT and his return in 2001 was a win-win situation for him and the Institute. Under the leadership of Prof. Edward Crawley, the Aero/Astro curriculum had been revamped to emphasize a CDIO (conceive-design-implementoperate) philosophy. While much emphasis had traditionally been placed on design and manufacturing issues, there existed little theoretical and practical experience in operations of complex aerospace systems at MIT. This is exactly the gap that Jeff Hoffman was able to fill, and he has done so with excellence and dedication for the last three years.

In terms of research, Hoffman has been deeply involved in attempts to bring the envisioned Space Station Research Institute to Cambridge. After President Bush announced the new Space Exploration Vision in January 2004, however, he has shifted his focus to support various projects and activities related to this vision. Among these is a \$2.9 million joint Draper-MIT project to analyze the Systems-of-Systems architecture option space and requirements formulation for a new Crew Exploration Vehicle (CEV), which is slated to replace the Space Shuttle after 2010. Other research activities include work on the SPHERES minisatellites project with Prof. David Miller

in the Space Systems Laboratory and work on the new Bio-Suit project with Prof. Dava Newman in the Man-Vehicle Laboratory.

His teaching activities include the introductory course 16.00 Introduction to Aerospace and Design, which is the main vehicle for sparking interest in MIT freshmen for a career in aerospace engineering. He has also been involved in running and lecturing in the following courses: 16.83 (U) and 16.89 (G) Space Systems Engineering, 16.621/2 Experimental Projects, 16.891 Space Policy, and 16.851 Satellite Engineering. Additionally, he has established and managed the 16.S26 lecture series on Modern Space Science & Engineering. This seminar focuses on the close relationship between science and engineering in the exploration of space.

To the delight of many undergraduates, he has introduced a new IAP course, Operational Internship Experience, in which he spent three weeks during January 2004 with eight undergraduate students at the NASA Kennedy Space Center. The students were selected by the Massachusetts Space Grant Consortium, for which Hoffman serves as co-director. Once at NASA, the students were broken up into three groups to investigate if and how operational needs had been considered during conception and design of various manned space systems. Hoffman and the students spent IAP working closely with engineers and scientists at NASA to better understand how operational issues can be considered further upstream during conception and design of Aerospace systems. This activity illustrates perfectly the pedagogical and professional value that Hoffman brings to MIT as Professor of the Practice.

Future *Newsletter* articles will examine other issues and exemplars of Professors of the Practice, as well as other types of non-traditional professorships at MIT.

**Olivier de Weck** is an Assistant Professor of Astronautics and Aeronautics and Engineering Systems (*deweck@mit.edu*).

# Research at MIT The Industrial Performance Center

**Richard K. Lester** 

WHAT'S IN A NAME? To some, the name Industrial Performance Center (IPC) may conjure up images of blackclad dancers, gliding among rusting girders strewn across an old factory floor. There is no performance art at the IPC, at least not most of the time. But the image of the abandoned factory is not entirely misplaced. For our subject is industrial transformation: how it happens, why it happens, and what it means for firms, for the people who work in them, and for the communities in which they operate.

Good research almost always begins with a good question. At the IPC, the core question is one that preoccupies firms, governments, communities, and individuals throughout the world: What is needed in order to prosper or, if not that, at least to survive in a globalizing economy? What skills, what strategies, what technologies, and what new forms of organization are most likely to bring success in particular competitive situations? And how do technological changes now underway shape the options?

The Center's purpose is to bring together the intellectual resources of the Institute in interdisciplinary research collaborations designed to strengthen understanding of these issues and to help leaders in industry and government develop practical responses to them. Faculty and students from all five MIT schools take part in our research projects, and through these projects the Center serves as a kind of listening post on industry, monitoring patterns of organizational and technological practice, interpreting them for our partners and sponsors, and feeding our observations back into the core disciplines and curricula of the Institute. (By industry, we mean the whole chain of activities from thinking up a new product or service to delivering it to a customer. Today the old distinctions between manufacturing and services have largely evaporated.)

The Center's interdisciplinary character can be traced back to its progenitor, the MIT Commission on Industrial Productivity, which in 1989 produced the famous Made in America report. At the heart of that project was a sometimes stormy but ultimately highly productive relationship between the engineers and the social scientists on the Commission. One of the recommendations of Made in America was to establish the Industrial Performance Center to carry on the interdisciplinary investigations begun by the Commission.

A second trait that the Center inherited from the Commission is the emphasis on close observation of industrial practices - on developing a picture of what is happening in particular industries from the ground up. A top-down perspective has important advantages. It enables a focus on those factors that affect the behavior of economies in the large, especially the fiscal and monetary policies that influence overall levels of employment, income, savings, and investment. But to understand the direction of industrial change, and the opportunities and the risks that it presents, it is also necessary to know what is taking place on the ground - on the factory floors and in the offices, the laboratories and the classrooms. It is here, on the front lines of industry, that the struggle

to improve competitive performance is won and lost. And so, in the dozen years since it was formed, the Center's faculty and student researchers have carried out nearly 2,000 visits to firms on every continent, from clothing factories in China's far west to biological research laboratories in Cambridge, England to NASCAR race garages in North Carolina. The insights gained during these visits constitute an extraordinary record of the changing face of industry, and have shaped scores of theses, as well as many books and articles published by IPC researchers over the years.

#### **Current Research Projects**

Three current projects suggest the reach, intellectual as well as geographical, of our research. The IPC's Globalization Project is examining the new challenges posed by globalization for productivity growth, innovation, the creation of good jobs, and broad political legitimacy in the nations it encompasses. "Globalization" refers to the set of changes in the international economy that are tending towards the creation of a single world market for capital, goods, and services. The Globalization Project focuses on one aspect of these developments: the fragmentation of the production systems of firms in the advanced economies, and the relocation of parts of these enterprises to other societies. Exploiting the opportunities provided by new communication and transportation technologies, as well as the internationalization of capital markets, many firms are breaking off parts of their productive activities and relocating them to foreign countries. What is relocated may range from the low-skilled, high labor-cost parts of the business to the most technologicallyadvanced research and development laboratories. Why firms choose to move – and what they choose to move – is influenced by factors such as the search for lower labor and land costs, the desire to move closer to valuable assets like the research institutions and consumers of another country, and the requirements

### IPC researchers are assessing responses to public pressures over working conditions of subcontractors in Asia and Latin America.

imposed by host governments for selling and operating in their societies.

While the basic process of globalization has been much studied, its effects on individual firms and on their home societies have not. To investigate these questions, the IPC research team is studying the strategies, plants and laboratories of leading firms in several industries, including electronics, automobiles, software, and textiles and apparel, with home bases in the United States, Europe, Japan, and Taiwan. What choices are managers in these industries making about how to structure their firms, about what to produce and with whom, and about where to produce it? By comparing the different ways in which firms and industries are addressing these questions, the Globalization Project is shedding new light on the space for choice and how alternative globalization strategies will affect future innovation, growth, job content, and societal learning.

Another component of globalization research at the IPC focuses on the impact on developing countries: competitiveness, yes, but at what cost and for whose benefit? This project so far has two central elements: labor standards and migration. IPC researchers are working with private firms in the apparel and shoe industries to assess their efforts to respond to public pressures over the working conditions of their subcontractors in Asia and Latin America. A second focus is on the regulatory mechanisms already in place in Latin America, particularly in Mexico, the way in which they have been misunderstood and distorted by attempting to fit them into U.S. models of regulation and government organization, and the potential they offer as an alternative model for generating and enforcing international labor standards. In migration we are focusing on the movement of people between developing and developed countries, the public policies surrounding the remittances which the migrants send back home, and the ways in which the migrants themselves use these policies to affect economic development, both positively and negatively.

In a third project, IPC researchers are investigating the role of innovations in products, services, and processes in promoting productivity growth and competitive advantage at the local and regional levels. National and local governments around the world, as well as other institutions with an interest in economic development, are greatly interested in creating and sustaining local environments that are attractive for innovation. The policy debate has been dominated by a few outstandingly successful centers of technological entrepreneurship, notably including the Boston area. But most locales do not have clusters of high-technology ventures of this scale, nor are they home to research and educational institutions with world-class strengths across a broad range of disciplines. Many, on the other hand, do have distinctive industrial capabilities and vibrant higher educational institutions, and some of these locales have been quite successful in harnessing new technology to revitalize their economies or even to reinvent themselves as centers of innovation and competitive advantage.

The Local Innovation Systems Project, an international research partnership

based at the IPC, is investigating cases of actual and attempted industrial transformation in more than 20 locales in the United States, Europe, and Asia. At each location, teams of researchers from the IPC and its partner institutions are studying innovation trajectories and patterns of growth and diversification in specific industries. There is a special focus on the roles of universities and other public research institutions as creators, receptors, and interpreters of innovation and ideas; as sources of human capital; as problem-solvers for industry; and as providers of public space for open-ended explorations of new technological and market opportunities.

These are just three of the research projects currently underway at the IPC. Others include long-term studies of the impact of technology on income and occupational distributions and on education and skill requirements in the U.S. labor market; research on the organization of design and new product development activities; and a now nearly decade-long study of China's emerging industrial and technological capabilities. But an intellectually vigorous research center amounts to more than the sum of its projects. Over the past decade, the IPC has made a series of ongoing investments to help build the community of scholars with a commitment to research and education on the uses of technology in industry and the consequences for productivity and society. (In this we have been greatly aided by the continuing financial support of the Alfred P. Sloan Foundation and its program on Industry Studies.) For example, we have periodically organized campus-wide faculty seminars intended to facilitate serious, sustained discussion of important developments in the industrial economy. The most recent of these was a year-long examination of the technological, economic, and demographic factors that are reshaping the research universities and the strategic implications of these changes for our own institution.

Similarly, the IPC's Doctoral Fellowship Program provides a limited

continued on next page

The Industrial Performance Center Lester, from preceding page

number of opportunities each year for advanced doctoral students to pursue independent thesis research in fields related to the Center's mission and objectives. Candidates are selected on a competitive basis and are drawn from across the Institute. There are no restrictions on the disciplinary background of the Fellows. We particularly encourage applications in areas related to the primary research themes of the Center, although creative proposals outside the thematic guidelines are sometimes funded. Applicants must demonstrate their intention to conduct significant field research in industry, and must show how the field research is to be integrated into their overall intellectual program. The Fellows reside at the Center for the term of their award (and sometimes longer), and make many important contributions to the intellectual life of the Center. They in turn are granted entry into a research community comprised of faculty and students with interests similar to theirs but who come from departments with disciplinary orientations that they would not normally encounter. Many of them say that their sense of connection to this interdisciplinary community is one of the highlights of their MIT education.

At a conservative count, scores of faculty members and more than a

hundred graduate students from 17 MIT departments have taken part in the IPC's activities since its inception in 1992. The Center's programs are guided by a faculty steering committee currently consisting of Suzanne Berger (Political Science), Richard Lester (Nuclear Engineering), Frank Levy (Urban Studies and Planning), and Michael Piore (Economics). For further information about the Industrial Performance Center, please visit our Website at *http://web.mit.edu/afs/athena.mit.edu/org/i/ipc/www/*.

**Richard Lester** is a Professor of Nuclear Engineering; Director, Industrial Performance Center (*rklester@mit.edu*).

# President Appoints Medical Care Task Force

**IN AUGUST,** President Charles M. Vest formed the Task Force on Medical Care for the MIT Community, and the group began to meet in mid-September.

Below is the Charge to the Task Force.

#### Charge

The Task Force on Medical Care for the MIT Community will be asked to recommend to the president of MIT a single vision or appropriate alternative visions for the future of health care for MIT students, employees, and retirees.

To construct and support this vision, the Task Force should:

- Review and articulate the goals of MIT's programs to provide health care and health insurance to our undergraduate and graduate students, employees, and retirees in terms of access to care, quality of care, and costs of providing care.
- Review and assess how well current arrangements are achieving the goals for providing health care to our students, employees, and retirees through the MIT Medical

Department and through other providers accessible through our insurance plans.

- Examine how other leading research universities provide health care and health insurance to meet the needs of their students, employees, and retirees.
- Benchmark the quality and costs of health care services provided directly by the Medical Department as well as the methods used by MIT to set the prices for health insurance.

- Review and assess alternative models for providing health care and establishing health insurance prices from the perspectives of quality of care, access to care, and the cost of care to students, employees, and retirees and to MIT.
- Seek input from the MIT community, including the staff of the Medical Department, Medical Management Board, Medical Consumers' Advisory Council, and Strategic Review of Benefits Committee regarding access to health care, quality of health care, and the costs of health care and health insurance.
- Based on this work, form a set of specific recommendations for advancing high quality health care in a cost effective manner for all members of our community.

So far, the Task Force has been reviewing background information about health insurance and medical care options provided by MIT and the supporting policies that are in place. When this review is complete, the Task Force will seek input from a variety of groups and committees so that the views of constituents are heard. Also, members of the community may send email to *medical-taskforce@mit.edu* to provide comments or questions to the Task Force.

#### Members Paul L. Joskow, Chair Professor, Department of Economics

Larry G. Benedict Dean for Student Life

Mary Boyce Professor, Department of Mechanical Engineering

**R. Erich Caulfield** Graduate student, EECS

**Lydia B. Chilton** Undergraduate student

Gerald R. Fink Professor, Whitehead Institute

Alice P. Gast Vice President for Research, Associate Provost, and Professor of Chemical Engineering

Morris Halle Institute Professor Emeritus

Marc B. Jones Assistant Dean, School of Science

Thomas A. Kochan Professor, Sloan School of Management

Nancy L. Rose Professor, Department of Economics

Alan E. Siegel Chief, Mental Health Service Medical Department Joyce D. Yaffee

**Task Force Membership** 

Assistant to the Director, Lincoln Laboratory

Advisors David Blumenthal, M.D. Professor, Harvard Medical School Director, Institute for Health Policy Massachusetts General Hospital

William M. Kettyle, M.D. Medical Director and Head, MIT Medical

Paul F. Levy President and Chief Executive Officer Beth Israel Deaconess Medical Center

**A. Neil Pappalardo** MIT Corporation member

James Richter, M.D. Chief Medical Officer and Senior Vice President of Medical Affairs Caritas Christi Health Care

Staff Marianne L. Howard Director for Human Resources Administration

Israel Ruiz Associate Budget Director, Strategic Planning and Modeling

Janet L. Snover Special Assistant to the Executive Vice President

# Assessment of Teaching Facilities Continues

**LAST SPRING** the Registrar's Office, in cooperation with the Provost's Institutional Research Group, began what is expected to be a regular assessment of MIT's teaching facilities, by asking faculty to complete a survey on their satisfaction with our classroom resources. The responses will help the Registrar, the Dean for Undergraduate Education, and CRSP ensure that the classroom renovation program proceeds in line with existing needs and current trends in pedagogy.

Some preliminary data which you might find of interest include:

- Over 40% of senior faculty, over 55% of junior faculty, and 75% of other teaching staff are generally satisfied with classroom conditions;
- Classroom lighting is generally good, though window shades can be problematic;
- A significantly higher proportion of senior faculty use a computer in the classroom for their teaching (64% regularly or occasionally) than junior faculty (49%) or other teaching staff (53%).

You will be notified when the new version of the survey is available. The Registrar's Office will provide a more detailed summary of the results when they are available.

# **MIT Poetry**

Watching the One-Eyed Hawk

The half of the world he commands includes me; for this reason he doesn't falter

as I approach his branch. Either I am conundrum in the solid eye or nothing at all in the drafty socket.

He looks like Rod Stewart: the rockstar haircut and the exquisite tailoring slept in night after night.

Looking at him looking at me, I see the opulent planet tilting toward new light

and I see the whirlpool of obscurity into which every skittering thing will be sucked.

Experience tells the redtail I am inedible. Experience tells me that if I keep

to the wide realm of his rapt patience, I will see a meadow vole surface and vanish.

As a juvenile, he used to come and go, toying with the Everglades; now he winters over,

the monocular monarch of short dark bitter days that undulate with changes.

- Erica Funkhouser

**Erica Funkhouser** is a Lecturer in the Program in Writing and Humanistic Studies *(ericaf@adelphia.net).* Her fourth book of poetry, PURSUIT, was recently published by Houghton Mifflin. If you ride the Red Line to Davis Square, you will find one of her poems sand-blasted into the MBTA station there.

# MIT Reprints A Beer with J. R. R. Tolkien

Samuel Jay Keyser

Jay Keyser's reminiscence of his encounter with the legendary scholar and author J.R.R. Tolkien, reprinted below, was broadcast on National Public Radio's "All Things Considered" on August 23, 2004. The editors hope it will inaugurate a recurring feature in the Newsletter – reprints of recently published short pieces that have broad general interest. We urge our colleagues to submit their own work or to recommend pieces by others for this new feature. Keyser's essay is reprinted by permission of National Public Radio.

#### PRACTICALLY EVERYONE HEARING THIS

will have seen or read J.R.R. Tolkien's trilogy, *The Lord of the Rings*. But I'll bet very few of you have ever had a beer with him. I have.

The first time I saw him was in 1958 in a lecture hall at Oxford University. He was the Rawlinson and Bosworth Professor of Anglo-Saxon. I had never read his trilogy. For me he was simply a stunning translator of an Old English poem called *Exodus* and, of all things, a Middle English manual for nuns, the *Ancrene Wisse*. In Rumpelstilskin fashion, he spun the words of these long dead writers into gold.

Being the only American studying Old English in the class, I stood out like, well, a

hobbit's foot in a Gucci shoe. It wasn't my accent. It was me – eager and seduced by the Oxford-ness of it all. As Tolkien stood at the lectern explicating *Exodus*, I peppered him with questions about the language, the text, the culture. Whereas most Oxford dons would have been put off by my American brashness, Tolkien was generous in his responses.

The day of our beer was the last day of finals, a grueling week of testing. I had just come out of the dingy Examination Schools into the coppery light of the afternoon when I ran into him.

"You're the American?" he asked. "Exams go well enough?"

The words, spoken in a rapid-fire voice shot out of a thin lipped, jowly face, and over teeth stained from years of clenching tobacco pipes.

"Got time for a beer?" I replied. "And I'll tell you. It's on me."

A pub is one of England's greatest contributions to a decent social life, ranking right up there with the Magna Carta. This one was a fine example: smoky, beery, dark-wooded and filled with patrons. In one corner a dart game was in progress. I ordered a pint of bitter. I don't remember what Tolkien drank. The remarkable thing about remarkable people is how much they are like us. They have achieved greatness. Still, they scowl when their pipes go out and they enjoy conversation over a good pint just like the rest of us. I told Tolkien that I was going back to America to study linguistics. He said – wistfully – that he would like to visit America someday. He had been scheduled to go the previous year to receive an honorary degree from Harvard. But his wife Edith's illness prevented it.

We drained our glasses and said our goodbyes. There was a touch of sadness in his voice. Today I like to imagine why. Back then, in 1958, Tolkien was just a year away from retirement. Having only just retired myself, it has taken me a lifetime to savor how bittersweet that passage must have been for him. I have come to learn that retirement dissolves the mystical bonds that exist between a teacher and a student. Now I think of that beer with J.R.R.Tolkien as a kind of farewell toast. We are saying goodbye to Oxford. We are saying goodbye to what connected us.

Then again, maybe he was just thirsty.

**Samuel Jay Keyser** is a Professor Emeritus of Linguistics and Philosophy and Special Assistant to the Chancellor (*keyser@mit.edu*).

## **Not Another Survey!**

Lydia Snover Gregory A. Harris

**SOMETIMES IT MUST SEEM** like you receive a request to complete a survey in paper or electronic format almost every day. And surveys take time to complete – and it's often hard to determine the relative worth compared to the effort. Surveys come from within MIT and from outside. What happens to the data and how is it used? This article will discuss the different MIT surveys, the rationale behind their conception and administration, how the data is used, and the usefulness of the results.

Although surveys can be and often are sent out by departments and offices throughout the Institute, a large proportion is administered by the Institutional Research Group within the Office of the Provost. This academic year, the Institutional Research Group will be administering major surveys to first-year students, faculty, graduate students, and alumni. All of these surveys are consortiabased – that is, they are being administered by other institutions as well. The Group also assisted in a transportation survey to the entire community.

#### Philosophy

The number of surveys administered by the Institutional Research Group has expanded over the past several years. Decisions about surveys are based on a few overarching principles.

- A broad-based survey is preferable to a special topic survey
- One comprehensive survey is preferable to multiple focused surveys
- A consortium/standardized survey is preferable to an MIT-only survey

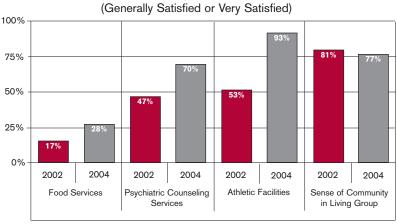
- A Web-based survey with authentication is preferable to a paper survey
- Repetition of surveys on a regular schedule is preferable to administering multiple surveys over time to the same population
- Timing is everything
- Survey results are illustrative, not predictive

Broad-based surveys that cover a variety of topics, such as the Faculty Survey administered in the spring of 2004, provide incredible flexibility in the analysis of the data. The relationships and interactions among demographics, attitudes, and perceptions are often impossible to anticipate. A broad-based survey that covers a number of topics often provides a greater ability to investigate interactions. For example, data on levels of stress may predict general satisfaction, but unless you include factors such as workload, discipline, and rank, the genesis of the stress may be impossible to understand.

Broad-based surveys with core questions give us the ability to produce a variety of analyses over time, between populations within MIT and with our peers. Here are a few examples of how data has been used at MIT.

#### **Trend Analysis**

Beginning with the spring of 2002, MIT began administering a survey to seniors every other spring. The survey asks seniors to rate departmental and institutional services. Figure 1 illustrates the change in measures of satisfaction for a number of central services. The increase in satisfaction with mental health services and athletics facilities is a direct reflection of the opening of the Z Center and increased resources in mental health services at the MIT Medical Department. By



**Figure 1** Satisfaction with Campus Services and Facilities (Generally Satisfied or Very Satisfied)

Source: 2002 and 2004 COFHE Senior Survey

repeating core questions to similar populations, we are able to measure the effect of changes made.

#### **Peer Comparisons**

The Senior Survey also contained a number of questions about how students spend their time. Anecdotally, there is a cultural belief that students at MIT work harder than students at peer institutions. Because the Senior Survey was administrated simultaneously to a number of similar private institutions, we are able to compare what students self-report for hours spent on a variety of activities. Figure 2 compares MIT to peers for hours spent on various activities. The peer schools are all private universities.

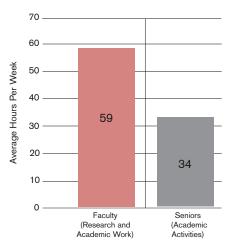
#### **Cross Survey Analysis**

Interesting analysis can be done when the same or similar questions are included in surveys administered to different populations. In the spring of 2004, all tenured and tenure track faculty were invited to complete a survey sponsored by the Provost. This survey included a number of questions that have allowed us to explore how faculty spend their time both in terms of hours and work load (number of classes, number of students, number of publications, etc.). Figure 3 contrasts the number of hours seniors report spending in class, doing homework, and doing other academic work, and the number of hours faculty report spending overall on academic, research, and administrative activities. Both surveys ask respondents to estimate an average over a week. As such, these surveys provide an insight to each group's perception of how they spend their time.

#### Analysis of Subgroups of Populations

One of the most valuable uses of data gathered through surveys is analysis by subgroups. These subgroups can be class year in the case of undergraduates; major/program/department/school for undergraduates, graduate students, and faculty; or even room in the case of the classroom study. Whenever possible, the Institutional Research Group provides schools and departments with an analysis of their population. These reports can be used internally for discussion and

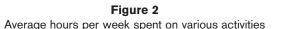
Figure 3 Self-Reported Time Spent on Academic Work Per Week



Source: 2004 Faculty Survey and 2004 COFHE Senior Survey

program review. Figures 4 and 5 (next page) illustrate two different types of subgroup comparisons. Figure 4 provides a comparison of graduate student responses by school on their satisfaction with overall program quality. Figure 5 continued on next page

Average hours per week spent on various activities 0 10 20 30 40 50 42 Academics 35 11 Socializing 13 8 Health and Athletics g 5 Job 6 3 Partying 5 MIT (all classes) Peers (all classes) Source: 2003 COFHE Enrolled Student Survey



#### Not Another Survey!

Snover and Harris, from preceding page

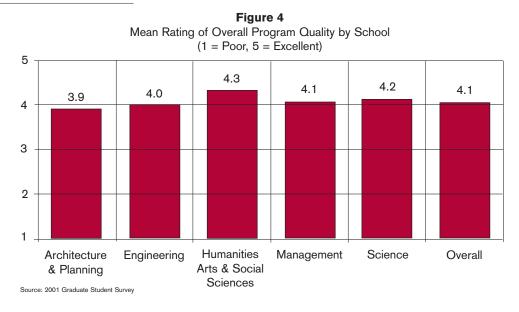
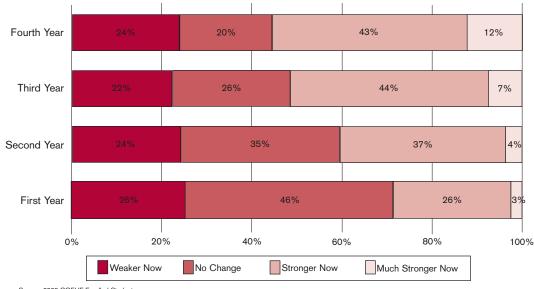


Figure 5 How Has Your Ability to Write Effectively Changed Since You First Enrolled at MIT?



Source: 2003 COFHE Enrolled Student

provides a comparison of whether students think that their ability to write effectively has changed since they enrolled at MIT by class year.

These graphs are illustrative of how data gathered from surveys can be used. The Institutional Research Group has assembled a rich set of data that is a resource for the community. The data can be used by academic and administrative departments, task groups and committees to examine student, faculty, alumni, and parent attitudes and opinions on a large number of topics. That being said, great care is taken to protect the confidentiality of individual responses, so while special analysis will be provided when requested, individual data sets cannot be provided. To learn more about the data available and/or request special analysis, please contact Lydia Snover, Office of the Provost, Institutional Research, *lsnover@mit.edu*, 617-253-5838.

Lydia Snover is Assistant to the Provost for Institutional Research(*lsnover@mit.edu*). Gregory A. Harris is a Data Analyst, Office of the Provost (*harrisgr@mit.edu*).

# letters

#### The role of the Faculty Newsletter

*To the Editorial Board of the MIT Faculty Newsletter:* 

#### **OVERALL THE SEPTEMBER/OCTOBER**

issue of the *Faculty Newsletter*, but especially the Editorial, speaks with more candor and authority than I have previously noted. I am encouraged that the *Newsletter* can become more than another voice of the administration.

The *Faculty Newsletter* was one consequence of the Applied Biological Sciences Department debacle, with the faculty expressing the need to be better, and more timely informed on administration decisions, and have an instrument in which to express their position.

The more lasting result was the Widnall Committee and changes in *Policies and Procedures.* But MIT institutional memory is known to be very short. In the current merger of the Mechanical Engineering and Ocean Engineering Departments, mandated by the Dean of Engineering, although the Widnall recommendations are being carefully followed, very few current faculty know why!

My role as the "loyal opposition" in the Faculty Meeting debates on the ABS affair reminded me of my role as member and then chair of the Committee on Community Service in the late '60s, when the MIT community felt a need to know what was going on. *Tech Talk* resulted, but was soon vetted by the administration. I have been concerned the *Faculty Newsletter* was on the same trajectory.

Concerns remain. I note a prominent member of the administration, not a member of the faculty, on the FNL Editorial Board. And the FNL should routinely receive its funding as part of the annual budget for operations of the "Office of the Chair of the Faculty," as described in Faculty Chair Bras' article in the current FNL [September/October 2004].

Professor Bras' discussion of the "Preliminary Position of the FPC" has the Chair, the Associate Chair, and the Secretary "Setting the agenda of the faculty meetings." Is this current practice or a proposed change?

I again harken back to the ABS matter. Over the Christmas-New Years holiday the president, the provost and the dean of science made the decision to eliminate ABS, consulting no one on the faculty. With no faculty meeting during January Independent Activities Period, the president, as chair of the faculty meeting, refused to accept discussion of the ABS decision under New Business for February, so it was March before the issue began to be aired at a faculty meeting.

Professor Bras' proposes (as an experiment) that "Some faculty meetings be led by the Chair of the Faculty." Sounds minimally appropriate.

#### Robert W. Mann Professor Emeritus, Mechanical Engineering

# Faculty Mentor Program – Faculty & Athletes: A Winning Combination

**IN THE SPIRIT OF PROMOTING** faculty/student interaction at MIT, the Department of Athletics, Physical Education and Recreation (DAPER) along with the Student Athlete Advisory Committee, is organizing a program for interested faculty to adopt or mentor a varsity athletic team. This program is under the direction of Assistant Director of Athletics John Benedick.

More specifically, it is hoped that faculty "mentors" would be available to

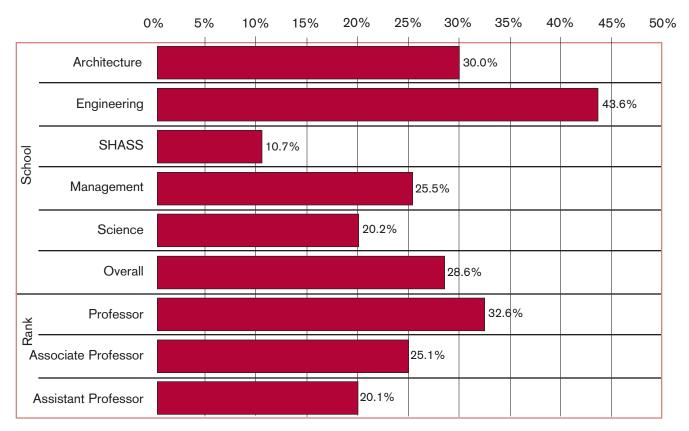
talk with student-athletes, especially about conflicts between academics and athletics, but also about their undergraduate lives generally. Mentors would be expected to attend an early season practice to introduce themselves, and to attend at least two home competitions during the season. The working group foresees a oneyear commitment, renewable if both sides are satisfied.

Longer term ideas include social gatherings during each season, bringing

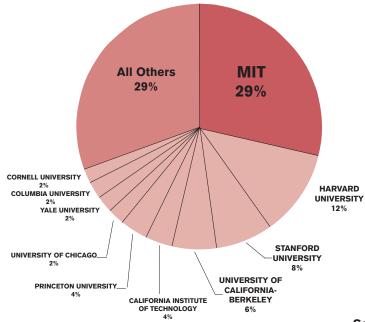
together athletes, coaches, and mentors, perhaps at a dinner, and the possibility of underwriting travel by mentors to away contests.

Faculty who are interested in taking part should contact Mentor Program Coordinator Kari Hebert at *khebert@mit.edu* by December 17th, so that assignments can be made. Faculty should feel free to identify sports in which they have a particular interest or with which they have particular experience.

# M.I.T. Numbers Percentage of Faculty with Highest Degree from MIT



Awarding Institution of Highest Degree Tenured and Tenure Track Faculty



Source: Office of the Provost