

The MIT Faculty Newsletter

Vol. XV No. 4

February/March 2003

Results of the Faculty Housing Survey

Lydia Snover

[Assistant to the Provost for Institutional Research Lydia Snover reviews the recent faculty survey results on housing issues.]

In November of 2001, 958 members of the MIT faculty (all tenure track faculty) were invited by the Office of the Provost to complete the HERI faculty survey. Every three years the UCLA Higher Educational Research Institute (HERI) administers a national survey of faculty. MIT has participated the past three cycles.

In addition to the base survey, MIT included a series of questions in 2001/2002 and 1998/1999 on the issue of faculty housing. This article will focus on the responses to those questions.

HERI received 359 surveys from MIT for a response rate of 37.5%. Of the respondents 70% were male and 21% female, 64% were full professors, 19% associate and 17% assistant professors. Of the total, 73% reported that they had tenure. The basic survey results can be accessed electronically at <https://web.mit.edu/ir/spreadsheets/> (you must have an MIT certificate).

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Evaluating Subsidized Faculty Housing

Robert Redwine

[Dean for Undergraduate Education Bob Redwine explores providing faculty with housing subsidies and takes a look at 100 Memorial Drive.]

A longstanding issue at MIT has been the fact that relatively few faculty members live close to campus. The reasons for this phenomenon are well known, including the tightness and expense of housing in or near Boston and the worries of many faculty with children of school age concerning quality of education issues. However, many of us continue to believe that this represents an important opportunity lost, both for our faculty and for our students. It certainly makes it extremely difficult for many faculty to have significant interactions with students outside the classroom or laboratory.

As we as a community are placing new emphasis on the connections between student life and learning and are taking important steps to improve housing and dining for our students, it is time to consider whether we can make

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How to Afford Faculty Housing

Robert A. Brown

[Provost Bob Brown discusses some of the issues connected to affordable faculty housing and talks about what the Institute is doing and plans to do in the future.]

I think we are all painfully aware of the high cost of housing in Boston and its surrounding suburbs. Although always among one of the most desirable and expensive places to live, the cost of Boston housing has increased at an unprecedented rate over the last decade.

Although figures don't tell the story as well as going to some openhouses, a few numbers do help frame the issue. For example, the Office of Federal Housing Enterprise Oversight reports that housing prices in the greater Boston area increased by almost 74% between 1997 and 2002, with more than a 10% increase in 2002. Also, the median single-family house price in the area was reported by the National Association of Realtors to be \$396,000 in 2002, an increase of 26% from 2000.

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This issue of the *Faculty Newsletter* features commentary on the issue of faculty housing at MIT. In addition to the above articles there are pieces on being a housemaster (Page 11) and a history of housing at MIT (Page 12).

We also continue our look at research at the Institute with overviews of the Laboratory for Energy and the Environment (Page 15) and the Center for Transportation & Logistics (Page 17). And there is an article by the Dean for Graduate Students offering guidance in dealing with anxious international students (Page 19).

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Subscriptions: \$15/year On-Campus
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From The Faculty Chair

Six Thousand and Climbing?

Stephen C. Graves

Two years ago, my predecessor as the faculty chair, Steve Lerman, wrote a column for the *Newsletter* titled "Rethinking Graduate Enrollment." [Vol. XIII, No. 3, Jan./Feb. 2003.] He observed that the number of resident graduate students had increased from 4854 students in 1991 to 5566 in 2000, an increase of nearly 15%. He went on to develop a very compelling argument that we should impose a greater control on graduate enrollments, and in particular, that we decrease the number of students as a way to improve both the quality of the students' educational experience as well as the quality of life for the faculty.

I found myself in agreement with Steve's thesis. Yet since that time, the number of graduate students has continued to grow by another 500 students and we now have over 6000 graduate students. The undergraduate numbers have remained flat between 4100 and 4200 students. Whereas I had always thought of MIT as having one graduate student for each undergraduate, we now have a 3 to 2 ratio. And, I am told, the number of graduate alumni will surpass the number of undergraduate alumni in the next few years.

What is driving the steady increase in graduate students? And should we be concerned? I expect we first need to understand what the drivers for this growth have been before undertaking any discussion of how to limit or control the growth. Over the past year I have heard three hypotheses as to why the enrollments have increased.

One hypothesis is that the research environment on campus is much stronger and healthier, leading to a

need for more graduate students. The argument goes that research volumes are up, due to a variety of factors. Over the past five years we have hired a large number of new young faculty into the slots vacated by the early retirement program; these new faculty have very active research programs. Another factor is that MIT has lowered the cost of a graduate student by restructuring the cost of an RA, eliminating summer tuition, and increasing the number of presidential fellowships.

A second hypothesis is that new Masters programs are primarily driving the growth. The Engineering School has introduced the MEng degree, now offered by several departments. Sloan continues to increase the size of its MBA program. And then there are the three-letter acronym programs – LFM, SDM, TPP, CMI, SMA – that result in more graduate students in one form or fashion.

The third hypothesis is that the time to complete a degree keeps increasing. Consider a doctoral program that once took four years on average; if it now takes five years to complete, then there will be 25% more students if we keep the intake rate the same.

To try to explore these hypotheses, I asked Lydia Snover from the Provost's Office for some help. Lydia generously provided me with the enrollment numbers, as well as number of degrees awarded, by department, for the last 10 years. I attach three tables with summary numbers by school. (See Page 5.)

From staring at these numbers, I'll offer my armchair assessment of what has happened.

First, we see that over this 10-year period the number of graduate students

increased by about 700 students, or 13%. The Center for Advanced Educational Studies (CAES) accounts for 85 of the additional students in 2002; these are non-degree students, and were not included in the 1993 numbers, so the true increase in graduate students might be closer to 600.

To get a very crude model for the number of graduate students I did a regression of the number of students (without CAES) against the number of degrees awarded; I found the coefficients for a linear model that minimized the sum of the squared errors. Admittedly I am ignoring all lag effects, as well as the fact that not all students are in degree programs or get a degree. The model is:

$$\text{Total Graduate Students} = 5.4 * \text{Total Doctoral Degrees} + 2.0 * \text{Total Masters Degrees}$$

At a rough level this seems about right as we might interpret the coefficients as the duration of the degree program. A Ph.D takes about five and a half years, whereas the Masters degree is around two.

From this crude model, one has some evidence that the growth is attributable to the Masters programs. Over this 10-year period the number of Doctoral degrees awarded declined slightly, while the Masters degrees awarded grew by more than 300 per year. If one were to believe this model, then this increase in the number of Masters degrees leads to about 600 more graduate students.

By looking at the school level, we can get a bit more insight as to what has happened over the last ten years.

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Six Thousand and Climbing?

Graves, from preceding page

Architecture and Planning: There are about 100 more students, with virtually all of this growth occurring in Media Arts and Sciences. The growth is split between Masters and Doctoral students.

Engineering: The number of Ph.Ds awarded has been flat over the time period, whereas the school is granting about 150 more Masters degrees each year. The school has about 300 more students.

A major component of the growth is certainly due to the MEng programs in EECS and Civil and Environmental Engineering, and the professional masters degrees in the Engineering Systems Division (SDM, TPP). Indeed, all of the other departments in engineering either have had a constant number of students, or actually a decline in numbers since 1993.

I suspect that some of the growth is due to increased time to degree for Doctoral students. I don't have hard evidence of this but only hearsay. But if the average time to degree had increased by one third of a year, which seems quite plausible, then this would account for 75 more students.

Humanities and Social Sciences: The number of graduate students has actually fallen by about 60, with much of this occurring in Political Science and a smaller decline in Economics. But the number of Ph.Ds awarded each year has fallen even more sharply, suggesting that the time to degree has increased over this time period. Thus, there might have been an even greater decline in the number of students, if not for the growth in the time to a degree.

Management: Sloan is awarding about 100 more MBAs each year, which results in about 200 more graduate students, relative to 1993.

Science: The number of graduate students has declined by 7% since 1993, and the throughput, in terms of degree granted, has fallen even more. As with Humanities, it seems that the time to degree has increased over the last 10 years. My "eye-ball" estimate is that the average time to a Ph.D has increased by a half year from around six years in 1993 to now up to six and a half years in 2002. Without this increase, I'd guess there would be 80 to 100 fewer students in the School of Science.

VP Research: The numbers here reflect the students in Health, Science and Technology (HST), the Operations Research Center (ORC), and up to 1998, the Division of Toxicology. The number of graduate students has almost doubled since 1993. But this is somewhat misleading as this increase is entirely due to HST, which has increased from 166 in 1993 to 322 in 2002. My understanding is that most of these students are in non-degree programs, so the actual impact is not as great as one might expect.

I close with three conclusions.

First, the growth in number of students over the last 10 years is primarily due to the Masters programs in the Engineering and Management Schools, as well as the new program in Media Arts and Sciences at the Media Lab. This part of the growth has been planned and is not the result of incremental decisions made by individual faculty or labs. This is not to say that we always made the right decisions when looking at a new program or initiative. But there was a process involving the administration and faculty that presumably tried to evaluate and weigh the costs and benefits of creating a new program or expanding an existing one.

Nevertheless, if we want to control future growth in graduate enrollment, then we need to make sure that the evaluation process for new programs or initiatives properly accounts for all of the externalities from any increased enrollments.

Second, the time to complete a Ph.D seems to have increased over the past 10 years. Admittedly, from the data that I have, I don't have good measures of this. But the numbers from the Schools of Science and Humanities and Social Sciences certainly suggest that this is the case, and I suspect that this is also true in the School of Engineering. As a first step, I'd suggest getting better data so we can have a clearer picture of what has happened and possibly some understanding of why. Then, I'd think this should be an issue for the faculty, at least at a local level, as to how to get better control on the time to degree.

Third, I don't find much evidence to suggest that the growth is attributable to an improved or healthier research environment. The number of doctoral students seems pretty stable, while the number of Ph.Ds awarded has declined slightly – and this seems true across all of the schools. The efforts to lower the cost of a graduate student have been very successful in helping faculty with their research programs and activities; but this does not seem to be a major factor in increasing the number of graduate students. However, at least anecdotally, it makes it much harder to find a TA, as all the students are able to find RAs. And, I do understand that the number of postdocs has been increasing, which might be a topic for another column. . . ❖

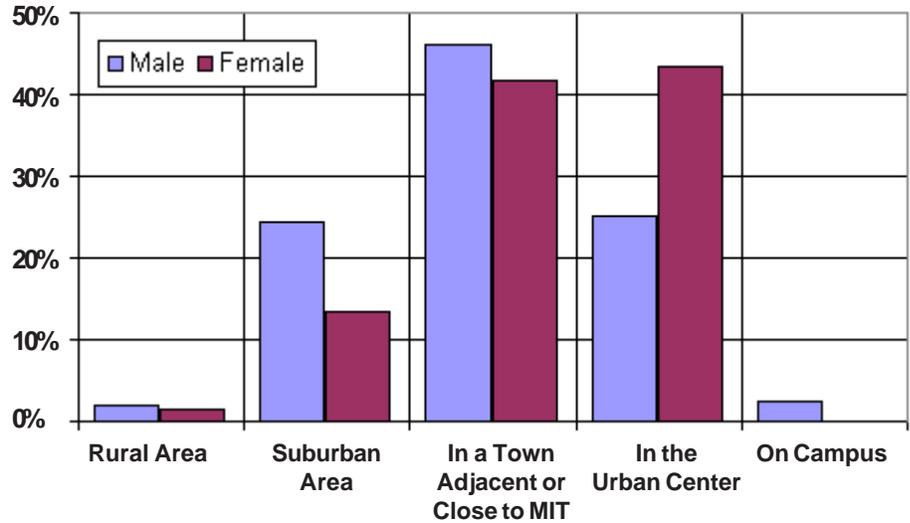
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Results of the Faculty Housing Survey

Snover, from Page 1

The survey asked a series of questions concerning the primary residence of MIT faculty members. About 86% of the faculty own their homes. 66% of the faculty live in a single family home or town house, 15% in condominiums, 12% in apartments and 6% in multi-family homes. On this question, there were differences by tenure status with 96% of tenured faculty owning their residences and 54% of non-tenured faculty. 76% of tenured faculty live in single-family homes or residences while only 36% of non-tenured faculty do. There were smaller differences by gender with 87% of male faculty owning their homes compared to 81% of female faculty. In terms of type of residence, 69% of male faculty live in single-family homes or townhouses, while 55% of female faculty do.

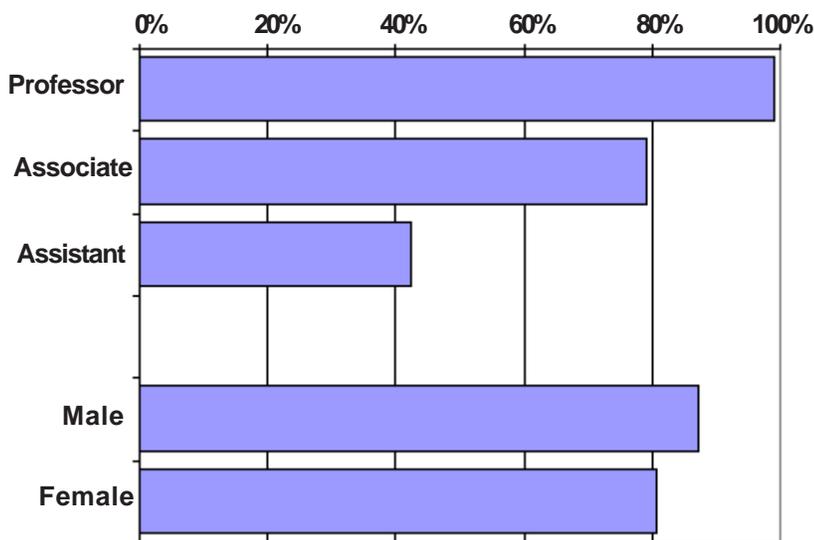
Location of Current Primary Residence



reported living in the urban center compared to 15% of the men. In terms of differences by tenure status, 37% of

A primary reason for including these questions on the survey was to better understand what effect, if any, housing options might have on an individual's decision to come to MIT. Of the respondents, 62% said that the availability of housing on campus would have had no effect on their decision to come to MIT. Although there was no real difference by gender on this question, there was a difference by tenure status, with 23% of non-tenured faculty responding that it would have made the decision easier, versus 9% of the tenured faculty. Likewise, the availability of affordable housing near campus would have made the decision of 36% of the non-tenured faculty easier compared to 21% of the tenured faculty. Again, there were minor differences by gender.

Percentage of Faculty Who Own Their Primary Residence



Of the faculty responding to the survey, 45% of the total reported that they live in a town adjacent or close to MIT and 29% in the urban center. However, 43% of female faculty

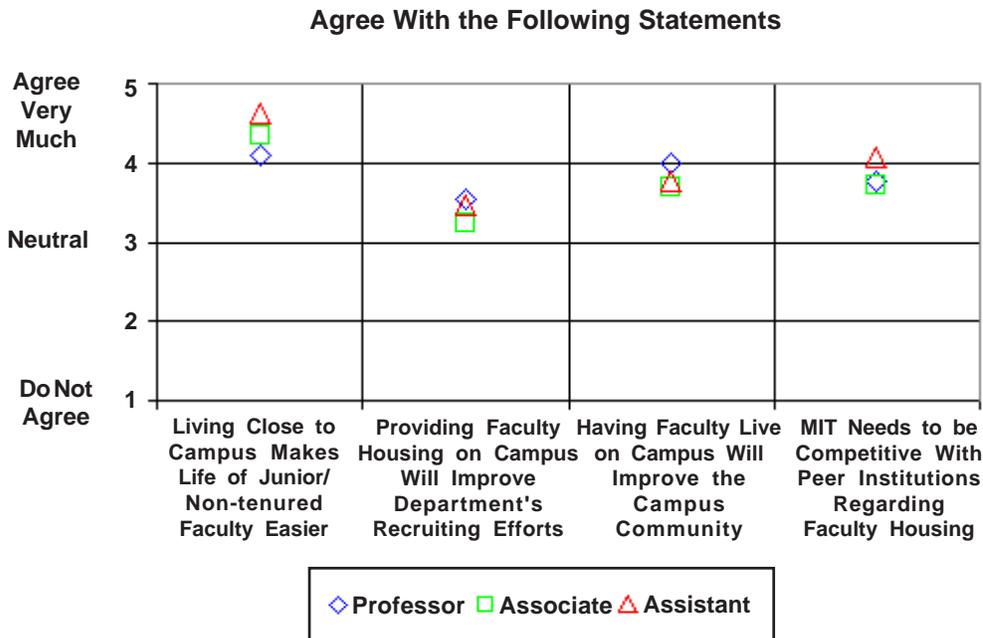
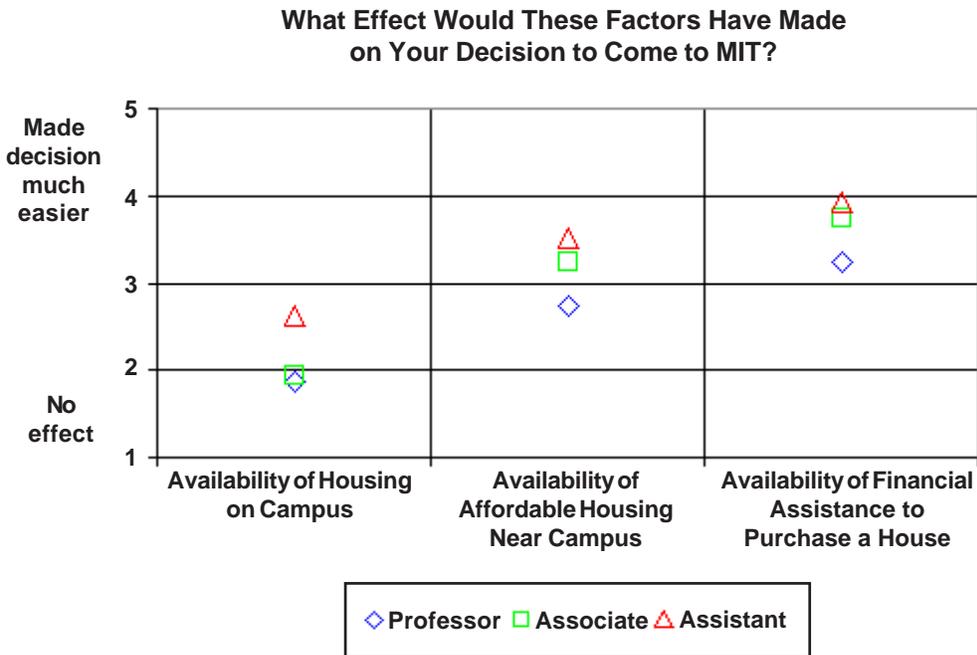
the non-tenured faculty say that they live in an urban center and 12% in a suburban area, while 26% of tenured faculty live in the suburbs and 25% live in the urban center.

We also asked a series of questions concerning views of the faculty about housing issues. Members of the faculty, in general, think that living close to campus makes the life of junior faculty easier. Women and non-

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Results of the Faculty Housing Survey

Snover, from preceding page



tenured faculty felt more strongly about this than tenured faculty and male faculty. Almost 70% felt that having faculty live on campus will improve the campus community and almost 65% felt that living on campus would help faculty understand student

needs. Only 21% of the faculty felt that faculty housing on campus would not improve their department's recruiting efforts although 60% agreed that peer institutions have faculty housing programs and MIT needs to keep up to be competitive.

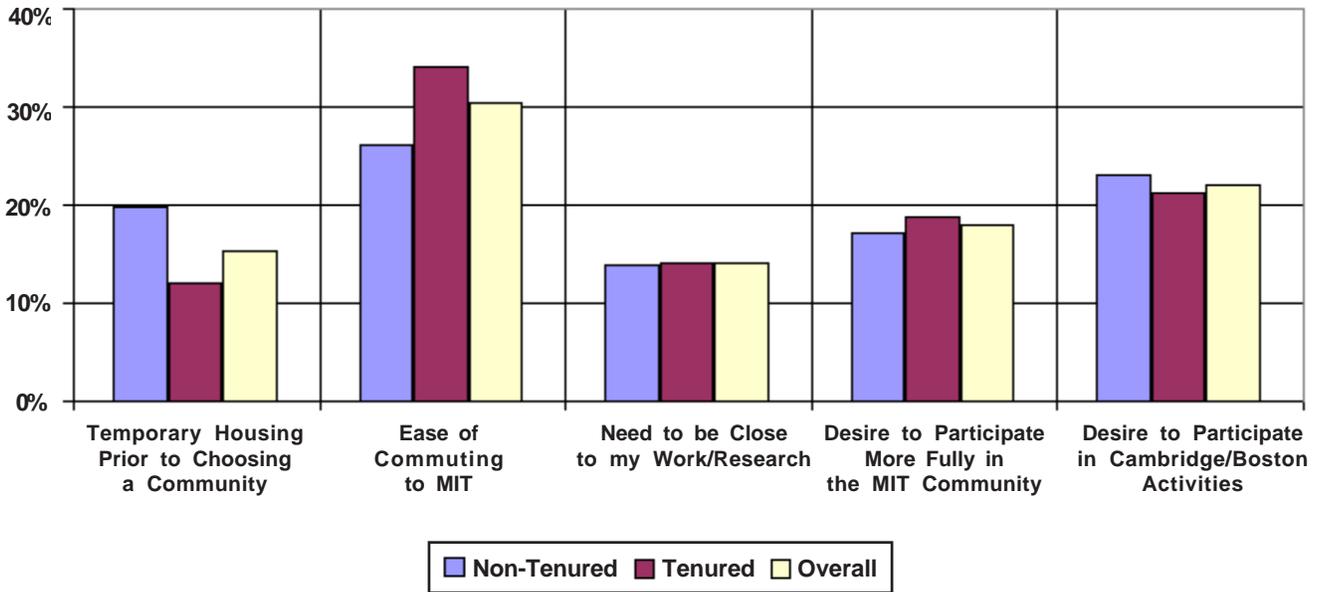
When asked what other issues were more important than housing, 55% of the respondents chose competitive faculty salaries, 26% chose resources to support research, and 12% indicated graduate student support. (See back page.)

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Results of the Faculty Housing Survey

Snover, from preceding page

Which of the Following would be Most Likely to Motivate You to Participate in an MIT Faculty-Housing Program?



In 1998, the faculty survey contained five questions that focused on aspects of on-campus housing. At that time, 15% of the faculty said they might participate if MIT built on-campus housing now and 13% said they might in the future. About 30% said they were not interested. About 59% of the faculty preferred detached or attached single-family structures and 23% preferred apartment style housing. Only 7% of the faculty would consider a faculty and staff or faculty and student complex on campus, although almost 38% would

consider a similar complex adjacent to campus. When asked what factors might motivate them to participate in an MIT faculty-housing program, 25% chose the ease of commuting to campus and 17% a desire to participate in Cambridge/Boston activities.

In the fall of 2001, the Council on Work and Family also surveyed the faculty about issues related to their quality of life at MIT. The Office of the Provost was asked to do an analysis on one of the opened ended questions, where members of the faculty were

asked to suggest ways of improving their quality of life. Twenty-six members of the faculty mentioned housing issues in their responses. These comments included “Temporary residences for new faculty (one year);” “more decent, affordable housing nearby;” “support in house finding and financing;” “more financial help with Boston-area housing;” and “the Institute needs to do more to help junior faculty afford housing in the greater Boston area.”✦

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Evaluating Subsidized Faculty Housing

Redwine, from Page 1

real progress towards solving this longstanding issue of faculty housing. I believe we can. It will require some continuing investment of funds, but I believe the payoff will provide, in many ways, a wonderful return on investment.

A special opportunity is represented by the apartment building at 100 Memorial Drive. Because of MIT's financial interest in the property, we have the right to place tenants in units as they become available for rent. The program I am suggesting consists of providing the opportunity and a financial subsidy for faculty who wish to live at 100 Memorial Drive. I should point out that this idea is by no means original with me; it apparently has been discussed by a number of people at different times. However, I believe it is time that we look seriously at the benefits and costs of such a program. I am assuming that the program will be of special interest to junior faculty, but certainly any faculty member who expresses an interest should be considered. Such a program would seem to have several benefits.

First, it would provide the one commodity which studies have shown is most precious to our faculty today – time. Many faculty, especially those unable to afford housing close to MIT, have long commutes to campus. This adds length and stress to their days and clearly reduces their flexibility to be on campus for events which may occur outside their “usual” hours. 100 Memorial Drive is basically on campus, and is only a very short walk from all of the academic buildings.

Second, as we continue in the direction of providing more opportunities for faculty to interact with students in a variety of ways, having significant numbers of faculty living near campus will almost certainly help in making this occur in

a natural way. I would not think it appropriate to require a formal connection with students (such as an appointment as a Faculty Fellow in a particular housing unit) as part of the housing subsidy agreement, but I would expect that we would advertise such possibilities, especially to faculty who live near campus.

Third, such subsidized housing should be an important recruiting tool

A special opportunity is represented by the apartment building at 100 Memorial Drive. Because of MIT's financial interest in the property, we have the right to place tenants in units as they become available for rent.

for faculty. Many of us remember the difficulty and expense of breaking into the very tight Boston housing market when we came as junior faculty members. I know that I would have jumped at the chance to spend the first few years in an apartment which was readily available, convenient to campus, and affordable.

Fourth, such a program could begin almost immediately. Because of the large number of units in 100 Memorial Drive, there are vacancies at any given time, so we could start the program as soon as we decide to devote the resources.

There would, of course, be financial resources needed to make this happen. The scale can be quickly estimated. If one assumes a subsidy of \$1K per month for 80 faculty members (which I believe would represent a phenomenal success), then the cost is about \$1M per year. The issue of the duration limit of the subsidy, if any, would have to be addressed. There also are apparently issues of quality of some of the units in 100 Memorial Drive which would need to be looked

at. But overall I believe the necessary resources would be very well spent, given the important benefits.

As this proposal has been discussed informally among a few of our colleagues, the question of our expectations and rewards for junior faculty has naturally emerged. I believe that all of us understand that junior faculty already have extra-ordinary demands on their time and that we

must give them every chance to succeed professionally. One of the real attractions of this proposal is that it would free up time which would otherwise be spent commuting. It is also true, I believe, that we are putting more and more emphasis on classroom teaching and on less formal activities with students as part of our definition of professional success for our faculty. I am certain that most, if not all, junior faculty members arrive at MIT with a desire to do many things professionally, including teaching and interacting with our remarkable students. Currently we do not make it easy or always rewarding for these activities with students to occur. This proposal would go a long way toward allowing our junior faculty to establish professional and personal lives which are balanced and rewarding in a variety of ways.

I hope that you find this proposal as exciting and potentially important as I do. I very much welcome your comments.♣

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How to Afford Faculty Housing

Brown, from Page 1

For those of us already established in the housing market, these numbers are music to our ears, because they constitute growth of our investments. But for new members of our faculty or colleagues in transition from one type of housing to another, these increases are a tremendous hardship.

Clearly, the compensation increases that MIT has offered over the years have not kept pace with the housing market. As a result, our younger colleagues have to leverage their household incomes to an increasing extent to buy ever-smaller homes and potentially longer commutes into Cambridge. Potential new faculty members are faced with choices when considering positions at MIT: Should they come to MIT and settle for a great professional environment, but perhaps a lower quality of life, or go to another school where their personal and family life may be better. This is a difficult choice to make. Even when they decide in favor of coming to MIT, much too often the question leaves some second-guessing their decision. This impact is visible in the faculty responses to questions about housing and its competitive impact in the recent survey on faculty quality of life.

One might think that we are fortunate that many of our competing universities are in housing markets that are just as expensive as MIT (at least before the dot-com bubble popped). Although this is true, it has resulted in the increasing need for the type and quality of the housing program at the school to be an important ingredient in the financial decision for colleagues to accept positions. Like it or not, faculty housing programs are becoming a form of compensation, or a benefit. Schools are using combinations of cash, home equity-sharing, and low-interest and

contingent interest mortgages arranged by the school to make it feasible for faculty to buy houses in markets under conditions where their base salary would not support the purchase.

Optimally, the programs are designed to get housing subsidies to the individual faculty in ways that are the most financially effective and tax efficient. Different programs may work

This constraint is becoming increasingly difficult as housing prices move up. In the absence of a structured housing program that works for all, individual cases are being handled on a case-by-case basis. This situation is not satisfactory.

In collaboration with Executive Vice President John Curry and Treasurer Allan Bufferd, I have commissioned a

In collaboration with Executive Vice President John Curry and Treasurer Allan Bufferd, I have commissioned a small committee to re-examine the MIT CIM Program and to recommend how MIT might change/expand our program to better help our faculty with housing.

for faculty at different stages of their careers. For example, low-cost rental housing on or near campus may be best for new faculty (and maybe others) and would help build the sense of community that we all want at MIT. Bob Redwine addresses this need in his article in this *Newsletter*. [“Evaluating Subsidized Faculty Housing,” Page 1.]

MIT is lagging in expanding its housing program. Since the 1980s MIT has offered a Contingent Interest Mortgage Program (so-called CIM Program). It is a fixed-term bullet second mortgage with a capped interest rate that is designed to increase the buying capacity of a first-time homeowner by allowing for a portion of their mortgage to have no monthly payments for the term of the CIM at the price of a large bullet of interest and principle which is due at the end of the term. CIMs work reasonably well when the size of the CIM is small enough that the burden which occurs when the CIM comes due is manageable.

small committee to re-examine the MIT CIM Program and to recommend how MIT might change/expand our program to better help our faculty with housing. As we wait for their recommendations, we should remind ourselves that many of the housing programs used by other schools are simply forms of additional faculty compensation that are directed to faculty members for a specific purpose – to buy a house – and thus are not available to others who do not want or ask for this support. It is easy to envision housing programs that amount to the deployment of 5% of the total faculty salary compensation pool to a housing program. There is an uncomfortable amount of inequity and social engineering inherent in implementing such a program; however, the housing market in Boston makes the need for a more aggressive housing program inevitable. I hope to have more to report before the fall.♣

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On Becoming Housemasters

Steven and Lori Lerman

About three years ago, we made one of those major decisions that changed both our lives: we decided to become housemasters of one of MIT's new graduate dormitories. This decision to move from the familiar confines of our single-family home in the Boston suburbs to living on the MIT campus with 120 students has been one of the best choices we have ever made.

Our decision to join the small group of faculty and staff who choose to be part of MIT's residential community wasn't made lightly. We both grew up in suburban communities and had lived in the suburbs of Boston for about 27 years. We had strong ties to the town of Winchester where we lived, and we enjoyed the privacy and relative seclusion that single-family dwellings offer. We spent time discussing the pros and cons of making such a radical change in where and how we lived, and talked with many of the current housemasters about their life styles. We recognized that deciding to live where one of us already worked long hours was going to further blur the separation between our professional and personal lives, and weighed whether such a radical change in our day-to-day lives would be positive or negative. We discussed the pros and cons of the comfortable and familiar versus the excitement, uncertainty, and challenges of becoming part of a student community.

We ultimately decided that becoming housemasters was the right choice for us. In August 2001, we moved into 224 Albany Street (a.k.a. NW30 or "The Warehouse"). This building was originally constructed very early in the 1900s, and was completely gutted in 2000-2001 for reconstruction as a graduate dorm. Because we signed up to be the dorm's first housemasters, we had the good fortune to be able to work with the architects and the MIT administration to influence the design of the building, including our own apartment, the students' rooms, and the common spaces.

Over the last year and a half, we have been frequently asked by friends and colleagues about our decision to move on to the campus as housemasters. The idea of living in a student dormitory intrigues many people and admittedly scares others. People wonder about the additional time demands of being a housemaster and the possible loss of privacy. My informal talks with the other housemasters suggest that they too are asked innumerable questions about their own choices.

The reasons we all chose to become housemasters are probably enormously varied. Our sense is that all of us have found the experience to be incredibly positive. At least for us, being housemasters has become a major aspect of our lives. It has reminded Steve of why he decided to become an academic, and has brought both of us into a larger community of students, staff, and faculty here at MIT. Some of the highlights for us include the following:

- We see an entirely different side of student life that has little to do with the research labs and departments. Our students are enormously talented and diverse, and being part of their lives is endlessly fascinating. Our involvement with them ranges from giving them mundane help (such as walking a new foreign student who has never lived away from home through the steps involved in establishing her first checking account) to counseling students on whether they made the right decision in coming to MIT in the first place. We also have an opportunity to allow students to get a better idea of what their lives might be like as university professors, by enabling them to see beyond the classroom and lab and into our behind-the-scenes life at home.

- We have come to better understand and appreciate the invaluable resources provided by the campus housing staff, maintenance personnel, desk workers at the dorms, and student health and counseling services. As faculty, we often

undervalue these services, and we don't recognize the extraordinary commitment and talent these people bring to the Institute. Housemasters quickly learn that the quality of residential life is crucially dependent on how well these people do their jobs.

- There are some pragmatic aspects to living on campus that shouldn't be underrated. After commuting every workday for 27 years, Steve didn't realize how much time and energy would be saved by his being able to walk to his office. And although having a backyard was nice, not having to mow the lawn and shovel the snow is even nicer.

- In our case, we decided to become housemasters after our children were adults, and we probably would have been less inclined to move to Cambridge while our children were still in school and living at home. However, many of the present housemasters do have young children, and raising their families within the dorm setting seems to work very well for them.

- On a personal level, as a couple in the "empty nest" stage of life, becoming housemasters has linked together our separate professional lives in very positive ways. The truth is that being a faculty member at MIT takes enormous amounts of time. Becoming housemasters together has made us part of the MIT community jointly at a time in our lives when each of us might have further focused on our respective careers, and has given us many opportunities to spend time working side by side in the dorm and in the larger MIT community.

Moving to the campus isn't likely to work for everyone on the faculty and their families. Our sense, however, is that there should be more options for faculty to do so, and that there would be tremendous benefits to both students and the overall community if more of us lived here.❖

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Housing for MIT Faculty and Staff: Where Have We Been and Where Are We Going?

O. R. Simha

[Director of Planning, Emeritus Bob Simha offers a brief history of housing decisions at the Institute and suggests a potential future.]

In 1922, just a few years after MIT moved to its new home in Cambridge, a plaintive letter appeared in *Technology Review*. The letter, from a young instructor, urged that the Institute provide housing accommodations that would enable young members of the teaching staff to live near the new MIT in order to enjoy the benefits of social acquaintance as well as intellectual camaraderie.

When Karl Compton came to lead MIT in the 1930s, his experience at Princeton, where housing for faculty and graduate students played an important part in the life of that academic community, gave him a sense of the limitations faced by MIT's faculty and students at the Cambridge campus.

As he moved MIT toward a broader science- as well as engineering-based community, Compton recognized that by expanding the number of graduate students and faculty at MIT he would increase the need for housing. He urged the Corporation to purchase the River Bank Court Hotel in 1937 for a graduate residence and in 1939, Bexley Hall, a privately managed apartment house for faculty and staff.

As MIT's faculty ranks began to grow in the post war years of 1946 and 1947, housing for new faculty members became a matter of real concern. Compton, Vice President James R. Killian, and Treasurer Horace Ford, came up with a plan that was as audacious as it was respectful of the Institute's limited capital resources. MIT decided to lease the land it had

acquired next to the MIT president's house to the New England Mutual Life Insurance Company for a housing development. The company designed and built 270 rental apartment units at 100 Memorial Drive. The agreement called for MIT to receive a modest rent for the land and to have first call on any vacant unit. The project was completed in 1948 and attracted both young and older faculty members as well as people from other walks of life. A penthouse apartment was reserved for the chairman of the MIT Corporation.

But the path to providing faculty housing was far from smooth. In some cases, MIT's changing priorities even moved the faculty housing agenda backwards. MIT's purchase, in 1948, of a private apartment house at 410 Memorial Drive that had housed faculty, staff, and graduate students was used to meet the expanding needs for undergraduate housing.

That year, 1948, also saw the presentation of the Report of the Committee on Educational Survey to the faculty. One of its conclusions was that major improvements to the physical environment were essential to the future good of the Institute. It recommended that over the ensuing 20 years MIT increase the opportunities for faculty families to live on or near the campus. The language of the report is startling in its contemporary relevance.

"We should like to see a nearby area developed which could be used for faculty homes. We believe that faculty residing near the campus can do a great deal to create a more attractive and civilized atmosphere. We believe such proximity would encourage the social gatherings, evening lectures, debates and other activities which

bring faculty and students closer together."

During this time, some MIT faculty families did settle in Cambridge, primarily in the Harvard and West Cambridge areas. Others migrated to the suburbs. But as MIT prepared for the mid-century, the issues raised in the report regarding the environment were high on the list of things that MIT's leadership knew needed doing in order to build a healthy community at MIT. The Faculty Club, as a center for faculty social life on the campus, was established in the newly acquired Sloan Building. And in 1955 Killian, now president of the Institute, asked Corporation member Edwin Ryer to lead a committee that would review all of MIT's housing needs. The Ryer Committee Report reiterated the high value of creating more faculty housing opportunities close to the campus.

By 1960, Planning Office projections for student and faculty growth prepared for MIT's Long-Range Planning Committee noted that housing would be a critical feature of MIT's ability to recruit and compete successfully for both faculty and students.

Julius Stratton, who had become president of the Institute in 1959, moved the faculty housing agenda forward by appointing a Committee on Faculty Environment. In 1963, he asked Professor Ithiel De Sola Pool to work with the Planning Office in conducting a survey of faculty interest in Institute-sponsored housing. The results showed a strong interest, particularly from younger faculty members just starting their careers who had not yet made a permanent housing choice, as well as older faculty members with "empty nests" in the

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Where Have We Been and Where Are We Going?

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suburbs who wished to live closer to MIT and to the cultural and social resources of the city. In 1964, MIT established the Northgate Community Corporation to implement a program of providing housing for faculty, staff, and students in Cambridge.

Northgate went into action purchasing a variety of housing resources including existing single family homes and apartment houses. Homes were sold to faculty and staff with buy-back provisions and apartments were made available to faculty and staff, as they became vacant. Unfortunately, this was a period of escalating real estate costs. MIT was buying in a rising market. We had waited too long. To make matters worse, rapidly rising real estate values and the resulting higher rents led to the establishment of rent control which reduced Northgate's income and ultimately put it at risk.

In 1965, a Master Plan for the Sloan Campus was developed which envisioned both academic and residential buildings that would serve both married students and faculty. The first residence in this plan, Eastgate, was completed in 1968. Its 20 stories included two floors of apartments for resident and visiting faculty members. In addition, a child care facility was built on the ground floor of the building. One of the building's early tenants was Neils Bohr and his wife. But this step forward was to be short lived. As pressure built up for more graduate housing, the faculty apartment program was once again sacrificed in order to house more students.

In 1969, MIT announced the acquisition of the Simplex Wire and Cable property and President Howard Johnson declared that it would provide an opportunity for MIT to build

housing for MIT faculty and staff on a portion of the site. A faculty and staff committee was appointed to help establish goals for the development. The Corporation Joint Advisory Committee, after reviewing the recommended goals and the results of the housing surveys and a prospectus for financing and building MIT housing in the Simplex area, recommended that MIT move forward

demography of the city. Homogeneity was now being replaced with diversity. A new generation of young homeowners – artists, musicians, young professionals, and faculty from a variety of institutions were moving into neighborhoods formerly the exclusive domain of blue-collar families. This variety helped to make the areas between Harvard and MIT a more congenial, interesting, and

In 1965, a Master Plan for the Sloan Campus was developed which envisioned both academic and residential buildings that would serve both married students and faculty. The first residence in this plan, Eastgate, was completed in 1968. Its 20 stories included two floors of apartments for resident and visiting faculty members. In addition, a child care facility was built on the ground floor of the building. One of the building's early tenants was Neils Bohr and his wife.

to build 1,200 units of faculty and staff housing in the area now known as University Park and on other land MIT owned in Cambridge, as soon as possible. The average unit cost for three-bedroom apartments at that time would have been \$31,000. Unfortunately, no progress was made on this recommendation. As before, MIT focused its housing activities in the 1970s on student housing on the campus. The Vietnam War, a desultory economic period, and the threat of highway construction nearby continued to defer consideration of faculty and staff housing by MIT in Cambridgeport.

In 1980, the Planning Office conducted a fresh housing survey which reasserted faculty and staff interest in a housing program. However, one thing was changing: the

desirable place to settle.

By the mid-eighties, however, the pressures of rising housing costs and high mortgage interest rates resulted in demands by some young faculty members for greater financial assistance to help them obtain housing within their means. A second-mortgage program was quickly assembled to meet this concern and is now MIT's principal program of housing assistance available to all faculty. Sadly, for some, it has not always offered a satisfactory means of financing their housing. MIT also experimented with alternate ways of expanding its housing stock in Cambridge. Through agreements with small, private town house developers to purchase a portion of their development, MIT enabled these

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Where Have We Been and Where Are We Going?

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developers to secure favorable borrowing rates. In exchange, MIT was able to purchase its portion of the development at below-market rates. MIT occupants then enjoyed the rent advantage. Some of these units were subsequently sold to MIT faculty members. These techniques helped to expand the MIT housing inventory at a minimal cost to the Institute.

In June of 1990, a planning report to the MIT Corporation's Sub-committee on Real Estate outlined the trends the Institute would likely face in the 15 years ahead: a 50 percent turnover in the faculty; rising housing costs in Cambridge; greater demands for supporting services such as day care; and increasing competition from peer institutions with significant housing assistance programs designed to recruit and retain faculty. Several options for addressing these trends were once again presented. The land resources which we had carefully assembled within walking distance of the campus were identified. But no champion for faculty housing was at hand and no action was taken.

In the years that followed, the MIT community has done much soul searching about community, diversity, and opportunity for minorities and women. Whether stimulated by tragedy or by competition or the growing recognition that there is a relationship between the quality of life offered by MIT and its ability to recruit and retain the best faculty, MIT has been under increasing pressure to develop and implement a strategy that would provide access to convenient and affordable housing resources for its increasingly diverse community.

When compared to our competition, the Institute's housing efforts seem modest.

By comparison, our nearest neighbor, Harvard, has maintained an aggressive faculty housing program in Cambridge for years. It has included the purchase and resale of single family houses and the development of new rental and condominium apartment buildings. Within the last year, it has acquired 120 new condominium units for sale to its faculty and staff just a few blocks from the MIT campus. Harvard also intends to develop additional housing for its faculty and staff along Memorial Drive and in the university's new developments in Allston.

By comparison with MIT, Princeton provides approximately 600 apartments, single-family houses and town houses for its faculty and staff within walking distance of the campus. Yale University has, since 1994, instituted a plan to encourage university employees to live in New Haven. Over 230 members of the faculty and staff have taken advantage of this program and are making a significant contribution to the attractiveness of New Haven as a place to live.

Stanford University has one of the oldest faculty housing programs, which continues to be a major anchor in its ability to recruit and retain faculty. In addition, the City of Palo Alto now makes it mandatory for Stanford to build additional housing for its faculty and staff before the city will issue the "general use" permit which controls all development on the Stanford campus. Columbia University has long depended on its stock of housing in the Morningside Heights neighborhood to recruit and retain faculty.

If we could glean from these experiences the common elements of a successful faculty and staff housing program they might include: (1) take

the long view. Housing is a long-term investment whose purpose is to continue to support MIT faculty generation after generation. A good housing program is not simply another competitor for general funds; it is the price of doing business. (2) a focus on providing the young and most vulnerable teaching and research staff with quality housing. Good, convenient, and safe accommodations when you are starting out will provide not only shelter but also a network of faculty and family associations across disciplines from which MIT will profit in untold ways. As junior faculty members with a positive community experience become tenured, their willingness to contribute to the larger community can only be enhanced. (3) providing opportunities for the senior members of the faculty to transfer their housing equity to units near the campus. Several have already done so, drawn by a desire to remain part of the Institute community. If more could do the same they would be able to contribute to the critical mass of students and colleagues required to sustain a livelier environment. (4) recognition that the diversity of life styles now characteristic of the faculty and staff requires more imagination and risk-taking to meet their needs and to help them be fully productive citizens of the Institute. (5) realization that timely initiative and leadership in housing is always less expensive than crisis-oriented solutions.

But in the end it will require consistent and unselfish support from the faculty, administration, and the Corporation to make the plea of that young instructor writing back in 1922 come true.♣

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Research at MIT**Laboratory for Energy and the Environment**

David H. Marks

The 2001 founding of the Laboratory for Energy and the Environment (LFEE) was a milestone in MIT's efforts to coordinate wide-ranging Institute research on environment and sustainability issues. The successful merger of the Center for Environmental Initiatives (CEI) and the Energy Laboratory marked the completion of a 10-year effort to integrate MIT's strengths in science, technology, and the social sciences in this area of increasing international concern.

In its first year, LFEE brought together over 50 faculty members, 100 students, and staff in 14 departments, forming multidisciplinary teams to address the complex, long-term issues of sustainability. As a neutral broker, LFEE fosters constructive relationships among industry, government, academia, and the public around environmental and energy issues that affect both developed and developing nations.

Defining contemporary and future environmental problems, shaping the multidisciplinary research to resolve them, and conveying the very best methods and results to students of all ages and policy makers at all levels, LFEE is building on the achievements of its predecessor programs. LFEE enables MIT to offer international leadership on integrating advanced science and technology into international energy and environmental choices that will shape the future.

Building synergy across the Institute, LFEE has attracted significant support, established new linkages among projects and their proponents at MIT

and internationally, and expanded educational initiatives emphasizing the importance of building development policy on cutting-edge science and technology. Among many highlights: Following LFEE workshops, Shell Oil Company has signed an agreement with MIT to support substantial international collaborative research on "Smart Wells/Smart Fields," advanced gas technologies, and other energy concerns. Major research emphases have addressed the challenges of global growth in demand for transportation, advanced important work on carbon sequestration, and given a common institutional base to researchers in several MIT departments studying energy and environmental conditions in China and other parts of the developing world.

International Perspectives

In the 2001 merger, LFEE inherited the international influence built over the past decade by CEI. The Lab coordinates MIT's participation in the **Alliance for Global Sustainability (AGS)** which currently sponsors 60 research projects in three broad areas: water, energy, and mobility. In 2002, the annual meeting of this group was held in a developing country, Costa Rica, for the first time, signaling the Alliance's commitment to issues and opinions from the South. The meeting attracted over 400 scholars and representatives from industry, government, and NGOs around the world. In 2001-2002, AGS launched a new book series on sustainable development; its first two volumes focused on problems of the world's growing megacities. MIT

will host the annual technical meeting of the AGS in November 2002.

The **MIT/AGS Consortium on Environmental Challenges** addresses issues of environmental quality and sustainability at the regional level. Consortium research highlights the role of scientific and technological knowledge in environmental decision making. The **Mexico City Integrated Assessment Project** is an important example of this work: Supported by the Mexican government as well as through the MIT/AGS consortium, researchers work with public officials and stakeholders to improve air quality in the city, the region, and the world.

A particular regional emphasis at LFEE this year has been on systems for the generation and use of energy in China: Among its extensive international research, the **Building Technology Program** is implementing a demonstration project and related educational workshops on cleaner building technologies in China. In collaboration with Tsinghua University, the **Center for Advanced Nuclear Engineering Systems (CANES)** continues to help China's growing nuclear energy sector develop safety standards, techniques, and features in operating plants. CANES supports an extensive research program on technical and scientific aspects of nuclear energy worldwide. The **Analysis Group for Regional Electricity Alternatives (AGREA)** (see below) is also conducting research relevant to China as well as to Europe, the U.S., and Mexico.

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Laboratory for Energy and the Environment

Marks, from preceding page

Research: Energy Sources, Energy Choices

The realities of many environmental crises – local, regional, and global – are tightly linked to energy choices. Combining the international partnerships formed by CEI, the research strengths of the Energy Lab, and MIT's commitment to global development, LFEE is forging new levels of understanding on which future policy can be built. Research affiliated and coordinated through LFEE includes the economic, social, technological, and scientific ramifications of energy production and use. For example:

- The **Clean Diesel Fuel Research Initiative Program**, a collaboration of the Sloan Automotive Lab and the Chemical Engineering Department, is assessing the potential for significantly cleaner diesel fuels.

- The **Center for Energy and Environmental Policy Research (CEEPR)** continued its research on emissions trading and electric utility restructuring, initiated collaborative research with Cambridge University, and held three international workshops. CEEPR research is focused on evaluating the functioning and performance of markets created for the provision of environmental goods and for providing electricity and associated services. Its work is conducted under the auspices of the **Joint Program on the Science and Policy of Global Change**, and is sponsored by LFEE, the Department of Economics, and the Sloan School.

- The **Carbon Capture and Sequestration Technologies Program** investigates technologies for carbon dioxide mitigation through carbon capture and sequestration.

- The **Center for Airborne Organics**, in its 10-year lifespan, has brought together scholars interested in the pollution of ambient airsheds by energy and other industrial sources and the use of that understanding to prescribe new means of detecting and tracing organic pollutants and new methodologies for preventing pollutant emissions.

- The **Analysis Group for Regional Electricity Alternatives (AGREA)** is the center of LFEE research in the area of strategic planning for energy infrastructures and environmental performance. **AGREA** is studying comparative emissions of different energy sources. Further research in competitive power systems in 2001-02 was performed in the **Laboratory for Information and Decision Systems (LIDS)**; it included the development of congestion management structures and computational capabilities for regional grid operators; price-forecasting techniques for generators and marketers; and revised criteria to measure the adequacy and reliability of supplies.

- The **Political Economy and Technology Policy Group** is a joint program of LFEE and the Center for International Studies. Its purpose is to identify means to improve public and private responses to critical environmental problems by combining political and economic expertise with the best possible technical and scientific understanding.

- Projects in the **Sloan Automotive Laboratory** involve quantitative and cross-disciplinary study of complex energy and environmental systems. Investigators are working to improve engine performance, efficiency, and fuel utilization in internal combustion

engines, and to reduce adverse emissions. Sloan Laboratory researchers are also involved in assessing new vehicle and propulsion system technologies for future road transportation use.

Education: Building

Understanding and Awareness

In 2002, LFEE also launched the **Program in Science, Technology, and Environmental Policy (P-STEP)** which is focused on improving the quality of environmental regulation and policy by bridging the gap between engineering and the social and management sciences. P-STEP will offer Masters and Doctoral programs jointly supervised by engineering and social science faculty members. LFEE-affiliated faculty also taught the **graduate elective on Sustainable Energy** (22.811J/10.391J/ESD66/11/371J/1.818J/3.564J) for the fifth year in spring 2002.

With the establishment of LFEE, existing environmental education initiatives at MIT, particularly the **Program for Environmental Education and Research (PEER)**, found a new organizational home. The **LFEE Education Program** is designed to enhance environmental literacy and strengthen awareness of the complexity of environmental and sustainability challenges, particularly among future science and technology leaders. Program managers have identified three broad constituencies – the MIT community, local and regional communities, and national and international communities – and conduct a range of activities to meet specific goals for each group.♣

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Research at MIT**The Center for Transportation & Logistics****Thirty Years of Teaching and Research on Land, on the Sea, and in the Air**

Cynthia Barnhart

The Center for Transportation & Logistics – originally started in 1973 as the Center for Transportation Studies – has long been recognized around the world as a leader in its field. Along with fundamental contributions to the understanding of transportation system planning, operations, and management, its efforts have included significant contributions to all the various modes of transportation, both passenger and freight, in both the public and private sectors, ranging from broad conceptual planning to the specifics of equipment design and operations analysis.

Graduates of the Center's education programs now play leading roles in both the private and public sectors – at airlines, railroads, trucking firms, and consulting organizations, and at transit agencies, airport authorities, and government agencies such as departments of transportation and highways. A large percentage of Ph.D graduates also now hold faculty positions at U.S. and foreign universities, while others are pursuing research or consulting careers.

Much of the Center's most ambitious work has been conducted under the aegis of major research and education programs such as the International Motor Vehicle Program, begun in 1980, and the New England Transportation Consortium, initiated in 1983. More recently, a multi-year collaboration has been undertaken between MIT and the University of Puerto Rico, focused on the development of Tren Urbano, a new rail system planned for the San Juan metropolitan area.

In 1999, the Global Airline Industry Program was begun to study the economics, management, and operations of the entire aviation industry, including international, domestic, local, and regional carriers, aircraft and engine manufacturers, airports, air traffic control, and supervisory

agencies. MIT has also been tapped, along with UC/Berkeley, to head the FAA Air Transportation Center of Excellence in Operations Research, a coalition of universities focused on the development and use of operations research to address specific aviation issues.

Other major research programs currently underway include:

- *The University Transportation Centers Program*, an ongoing multi-million dollar grants-matching program with the U.S. Department of Transportation begun in 1988

- *The MIT Program in Intelligent Transportation Systems*, established in 1990 to conduct research on the applications of modern information technologies to transportation systems

- *The Integrated Supply Chain Management Program*, started in 1995 to accelerate the implementation of supply chain management principles in the participating companies and to advance the state of the art of supply chain management in general

- *The Age Lab*, established through the Center in 1999 as a partnership with industry and the aging community to develop new technologies promoting healthy, independent living throughout the human lifespan.

In addition to these programs, MIT has been designated a National Maritime Enhancement Institute by the Maritime Administration of the U.S. Department of Transportation. And the Association of American Railroads has designated MIT one of three AAR Affiliated Laboratories.

Along with helping coordinate the extensive research into transportation and logistics that is conducted throughout the Institute, the Center also administers three interdisciplinary graduate programs. Approximately 75 students are currently enrolled in the programs, coming from a wide range of backgrounds including

engineering, urban planning, economics, science, mathematics, social science, and the humanities. More than half have one-to-five years of full-time experience in the field, bringing a wealth of practical insight into classroom discussion, and several students have also served in their nations' military service.

The flagship program is the Master of Science in Transportation (MST), established in 1978 to give students a comprehensive education in transportation. The Interdepartmental Ph.D Program was introduced in 1992 to provide a structured follow-on for students in the MST program or other transportation-related Masters programs. And a fast-paced nine-month program was begun in 1998 leading to a Master of Engineering in Logistics (MLOG).

The initiation of the MLOG program reflected the growing inclusion of logistics and supply chain management issues in the Center's research and education agenda, a development that eventually led, in the summer of 2002, to the adoption of the Center's new name. Among the new initiatives is a nascent research program investigating strategies for coping with the terrorist threat to supply chain operations.

To support its research and education mission, the Center established the Transportation Computing Laboratory in 1983. The laboratory serves as the focal point for all academic and research computing in transportation and is open to students and faculty 24 hours a day. A number of notable applications have been developed in the laboratory during its operation, including a transit fare and route analysis model, a truckload routing and scheduling model, a logistics inventory model, and various rail maintenance and inventory control models.

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OpenCourseWare Update**How Can I Participate?
Making Web Publishing Easy for Faculty**

Jon Paul Potts

[The OCW communications manager explains the process for faculty participation.]

Over the last six months, representatives of MIT OpenCourseWare have met with a wide array of audiences on campus, explaining why the Institute has chosen to undertake this ambitious initiative, what the goals of the project are, and, most importantly, what it means for MIT's faculty.

A key principle that the staff of MIT OpenCourseWare (MIT OCW) is sure to mention to all of these audiences is that we know that, to encourage voluntary MIT faculty participation, we must make it easy for faculty to contribute their course materials without extra burden, and ensure that there is clear benefit for faculty in return.

With MIT OCW committed to publishing 500 subjects in September (including the 50 already online at <http://ocw.mit.edu/>), the bar is set high. As of March 10, we were working with almost 400 MIT faculty on our September 2003 publication – but we still have a ways to go.

If you are interested in joining your faculty colleagues and would like to publish your subject with MIT OCW in September,

we are asking that subjects meet the following basic requirements:

- the subject is already in some electronic format (if your subject is not already on the Web, MIT OCW would be glad to work with you in future publishing cycles), and;
- the subject's content includes at least a syllabus, calendar, and lecture notes (or equivalent appropriate to the subject).

If your subject meets these basic requirements, you will be assigned an MIT OCW Faculty Liaison who will lead a team that includes production, metadata, and intellectual property specialists. MIT OCW will consult with you on site design, will coordinate content collection and conversion (including scanning, transcription and, in some cases, typesetting), will provide graphic support, and will then input that content into the MIT OCW content management system in preparation for Web publication. Just as importantly, the MIT OCW team will work with you to establish copyright ownership of every learning object embedded in your lecture notes, problem sets, etc. MIT OCW will then obtain publication clearance, or work with you to find another way to represent that particular concept, graphic, or image in the final MIT OCW Website.

Participation would require two meetings between you and your MIT OCW faculty liaison.

The hope of MIT OCW and the Provost's Office is that in the very near future, publication of electronic course materials should be a natural byproduct of your normal course development and teaching process. However, in this beginning phase of MIT OCW, we are focused on reducing any extra burden and making the process as seamless and easy as possible for you to participate.

Once a subject has been published at <http://ocw.mit.edu/>, you will have a digital and accessible archive of teaching materials from past semesters, ensuring those materials will not get lost in overstuffed filing cabinets or misplaced in cluttered C drives on faculty computers. MIT's DSpace will serve as MIT OCW's digital archive.

If you choose to participate in the September 2003 publish, you will receive a modest scholarly allowance of \$3,000 per subject, to be used at your discretion.

If you are ready to participate in MIT OCW, please contact me as soon as possible at jpotts@mit.edu or 2-3621.✦

**The Center for
Transportation & Logistics**

Barnhart, from preceding page

In addition to its research and education efforts, the Center maintains several important outreach programs to the transportation community, maintaining long-term relations with a number of important organizations in the field including the Volpe National Transportation Systems Center, the Federal Highway Administration, the

Federal Transit Administration, and the UPS Foundation. The Center's Affiliates Program in Logistics also develops important working relationships between MIT and corporations that lead their field in logistics practice.

The Center promotes interaction among more than 50 faculty members from all schools at MIT, as well as from other

universities and organizations around the world. The interchange of information, ideas, and inspiration among faculty, students, and researchers makes it one of the most dynamic focal points of activity in the transportation and logistics field.✦

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What Faculty Can and Should Do to Help Anxious International Students

Isaac M. Colbert

Since the terrorist attacks of September 11, 2001, our international students and visitors have felt tremendous pressures and growing anxiety. It is useful to highlight some of the circumstances since then that have added to these pressures. Among them have been:

- Heightened scrutiny of visa applications, especially for students who are citizens of, or who were born in, the 25 “special registration” countries flagged by the U.S. government, most of which have large Muslim populations;

- Requirement for students from these countries to report to local INS offices for “special registration,” which includes fingerprinting and a lengthy interview;

- Delay for a handful of MIT students for additional scrutiny of their visas, with further delay by a U.S. State Department “administrative review” for a smaller number;

- Implementation of the new Student and Exchange Visitor Information System (SEVIS), with significantly increased information reporting and student tracking demands; and

- Heightened potential for additional conflict in the Middle East and on the Korean peninsula.

In light of all this, students may be looking to faculty for advice and counsel about complex visa matters or about their personal anxieties. Although you are not expected to have all the answers, you can be helpful by pointing students towards a number of available resources not yet widely known and by taking advantage of them yourself. These include Websites and briefings for up-to-date information, as well as the Institute’s compliance with new visa regulations.

Websites

Several Websites publish information of relevance for the entire MIT community:

International Students Office
<web.mit.edu/iso/www/>

The site publishes up-to-date information about visa regulations and requirements, as well as FAQs in response to questions already raised by international students.

International Scholars Office
<web.mit.edu/scholars/>

The site posts up-to-date information for scholars about visa regulations and requirements.

Committee on Community <web.mit.edu/community/>

Giving broad consideration to institutional and individual responsibilities during times of crisis, the site makes specific recommendations and identifies resources for the MIT community.

Briefings

For information on student- and scholar-focused briefings on visa requirements (sponsored by the Chancellor, Provost, and Vice President for Research, and Dean for Graduate Students), check the related Websites or the *Graduate Student News* (both print and online versions) for schedules.

For briefings on community expectations sponsored by the Committee on Community, refer to the committee’s Website, or *Tech Talk* (print and online) for schedule information.

New Regulations

Faculty can also be helpful by being aware of a few essential facts about ongoing compliance with the new visa regulations:

- Every student and visiting scholar, and their dependents, must be issued a new visa document by August 1, 2003. Currently, the International Students Office is working with student

administrators in each department to schedule data collection and entry for each student.

- Retroactive actions of any sort are effectively impossible for international students with the new SEVIS reporting system. This presents a genuine challenge for timeliness of funding decisions, late registration and registration changes, medical leaves, and other actions that we have become accustomed to recording or changing after the fact. We want to avoid creating two systems, one for international students and one for everyone else.

- Some students will be delayed outside of the U.S. for added visa scrutiny. Some will be delayed for a short time, while others may be subject to extended scrutiny and delay. Your departmental administration has in hand a set of recommendations for responding to these circumstances. Please refer to my Memorandum of February 6, 2003, with attached recommendations approved by the Academic Council.

- While the International Students Office and the International Scholars Office can help with questions about federal regulations, most student questions about accommodating their individual problems can best be addressed within the department.

- Newly admitted international students may need specific encouragement and outreach to get them here. They should be encouraged strongly to start the visa process as early as possible and should be asked to keep your department informed about any complications they encounter.

Our international students are a vital part of the MIT family, and we all share responsibility to support them through these difficult times.♣

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News From The Dean**Enhancing the Graduate Experience**

Isaac M. Colbert

In my role as advocate for graduate students, I've been working for several years to stimulate and inform the discussion about graduate community at MIT. Some earlier phases of this effort are described in two previous issues of the *Faculty Newsletter* (Vol. XIII No. 3, January/February 2001; Vol. XIV No. 3, January/February 2002). This work has raised in my mind a number of questions about what it means to be a graduate student today. The world in which today's graduate students live and work has changed from that of my generation. It is more racially and culturally diverse, international, and interdisciplinary – a reality requiring students to develop skill sets not necessarily learned within the circumscribed context of a traditional research lab, where they are primarily acculturated to their fields.

Naturally, this suggests a dialogue with faculty around the evolving relationship between faculty and their graduate students, focusing on questions such as: What is the difference between faculty expectations for a graduate student's work ethic and the student's desire for a "more balanced" graduate experience? To what extent can or should faculty encourage students to strive for such a balance? Is there any realistic alternative? What are implications for research productivity, professionalism, and time-to-degree?

This article describes two strands of work conducted over the past year that shed additional light on the discussion. Two outcomes of this work are an analysis of answers to three open-ended questions included in the online graduate student survey

administered last October; and, second, a set of proposals for enhancing the graduate experience, submitted to me in two request-for-proposal cycles.

As you know, the springboard for the ongoing discussion of community has been the educational triad, the three essential components of the ideal education at MIT. Since the triad was introduced in the 1998 report of the Task Force on Student Life and Learning, the relevance of academics and research has not been challenged. But the role and relevance of community as the third leg of the triad have been, especially for graduate students.

To explore this discrepancy, I've surveyed graduate students, faculty, and alums in focus groups to learn what they had to say about community. There has been surprising alignment between students and alums, although less so – at least initially – with faculty. For example, students and alums considered experiences of community as essential for grad students who, after graduation, step into roles as global leaders. They linked community experiences with refining communications skills, the ability to explain, clarify, persuade, teach, and "sell" their ideas to others. They agreed that community experiences were vital to the student's cognitive development, and that the lack of emphasis on community at MIT limits the graduate student's potential contribution. On the other hand, faculty are certainly not aligned uniformly with these views; they may not agree that community can exist institutionally for graduate students.

This past year, I saw another opportunity to enlighten the discussion, using the graduate student survey as a vehicle. Together with the Office of Institutional Research, I crafted three open-ended questions to include in the survey. The first of these questions addressed the relevance of the triad for graduate students. The second and third questions asked students to comment on their personal experiences.

- The September 1998 report from the Task Force on Student Life and Learning states that "An MIT education should prepare students for life through an educational triad composed of academics, research, and community." How is this relevant for graduate students?

- If you could change one thing about your experience to make it more successful or fulfilling, what would it be?

- What three things would you like to see happen at MIT to enhance the quality of life for graduate students?

Forty-four percent of the graduate student body, or 2,765 students, responded to the survey. What they had to say offered strong support for the original focus group research. Seventy-one percent of the students who responded to the triad question agreed on its relevance, and 37 percent of those who qualified their responses believed that the community element was lacking at MIT.

Typical comments included:

"Simple. You need to gain knowledge: hence academics. You need to also expand the bounds of knowledge: hence research. And you

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Enhancing the Graduate Experience

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need to learn to relate all these to the people around you: community.”

“It [community] is relevant for graduate students in creating a balanced and fulfilling graduate education. Graduate students should leave the Institute not only competent in their field but also understanding the impact they can have when their perspective includes the world as a whole.”

“I think MIT does an excellent job preparing grad students in the areas of academics and research. I think MIT needs to do a little more work in the area of community though. Things like getting along with one’s peers. The days of the lone genius coming up with Nobel quality work are more or less over. These days most of us work, or will work in a lab with others, and we need to know how to commend them for their great work, and to disagree with them when the need arises. I think we often assume if our brains are fine tuned, others will excuse our social ineptitudes. If we can, why should we not just be more perfect individuals?”

The second strand of work was motivated by the availability of \$200K in student life fee funds. This was the perfect opportunity to gather fresh ideas about programmatic efforts that might make a difference for the graduate experience. Deciding to request proposals for enhancing graduate life, I assigned a committee (four graduate students and three administrators) to publish a set of proposal guidelines and design a selection process open to the entire community. In just over six months, 50 unique proposals were submitted by students, administrators, and even one alum; of these, 23 proposals have been funded to date, at a relatively modest cost.

Some proposals encourage socialization among different groups while others focus on integrating academic and social aspects of graduate life; some proposals hope to strengthen communications and outreach to the entire student body, while others support the arts. Still others are sound programmatic efforts that might serve as models for community building. A few examples: the Physics Pride Campaign sparks student interest and involvement in fostering community among graduate students through orientations and social events that convene faculty and students from widely dispersed departments, labs, and centers. The hugely successful arts reception at the List Visual Arts Center introduced graduate students (only) to the student loan art program. Plans for a Research Expo, a conference-style venue for celebrating the research being conducted at MIT, are already underway.

Two by-products of this process are important to note: the variety in the proposals submitted, and the accumulated wisdom of the selection committee. Proposals describe what students perceive as missing, the opportunities they wish were available as part of a common graduate experience. In implementing the selection process, the committee came closer to articulating what we mean by graduate community, and by discerning patterns in the kinds of proposals accepted for funding – and those that were not – how we might “operationalize” such an elusive concept. We have learned that students want support for integrating academic and social aspects of graduate life; strengthening communication and outreach; focus on the arts; bringing together diverse

constituencies; and developing additional facilities and infra-structure for community life.

In focus groups, in answers to questions posed on the graduate student survey, and in proposals submitted for enhancing the graduate experience, students are expressing a desire for something different, more relevant, from their graduate experience. This requires a broader effort than what departments already do so well in preparing their students intellectually and socially within their chosen fields. The question now has to do with our collective responsibility: What does it take to reorient our thinking to address students’ changed expectations and to realign our efforts and priorities? Departments can’t do it all, so how do we organize and coordinate a broader effort that effectively bridges institutional initiatives to departmental activities?

My view is that a collaborative approach leverages the efforts of a broad array of organizations and individuals, and moves us in the right direction. In a variety of ways, I’ll be seeking broad input from the faculty to further articulate issues about evolving graduate student expectations. I welcome observations and suggestions from individual faculty and from others who have already been engaged in exploring issues of “community” at MIT.

For their contributions to this work, I wish to thank Barrie Gleason and Blanche Staton in the Graduate Students Office; and for their recent efforts, Lydia Snover and Greg Harris, Institutional Research.♣

[Isaac M. Colbert can be reached at ikec@mit.edu]

Time Scarcity

Rosalind Williams

[From *Retooling: A Historian Confronts Technological Change*, The MIT Press, 2002. **Note:** Footnotes have been omitted due to layout considerations.]

In public and in private, Bob Silbey and John Hansman, co-chairs of the task force [Task Force on Student Life and Learning], repeatedly stated the conclusion of the task force that the scarcest resource at MIT is not money, not even space, but time. “We used to be an exciting place,” one member of the task force lamented, “Now we’re just busy.” The same thought was often expressed in Reengineering circles, whether in speech or on stickies. Everyone at MIT talks about the time crunch. When a group of faculty members pressed President Vest to put money back in the budget to reopen the Faculty Club, he wondered out loud, “If we find the money, will anyone have the time to use it?”

Thomas Hughes has often said that we express our values, both good and bad, in our technology and architecture. The same is true of our calendars, the scaffolding of our days. Each person at MIT, from top to bottom, is engaged in a constant temporal cost-benefit analysis in which complicated and ultimately incommensurate values are weighed and sorted to reach a precarious personal compromise. Faculty members weigh civic duties against exercise, family time against work time, committee service against research work, local community against extended community. For students, the analysis weighs time investment in a technical class against investment in a humanities class, or both against some form of student-centered recreation. The “felicific calculus” has invaded

everyday life far beyond decisions we think of as market-based ones.

Like people elsewhere who lead similar lives, MIT people depend on clever ways to appropriate time – snatching moments to chat in the hallways or rest rooms, reading email while they chat on the phone, reading hard-copy mail in committee meetings, always multitasking and shoehorning. They use an array of technological fixes, ranging from the Palm Pilot to the Web-based “student stress minimizer” that links a student’s registration with class syllabi in an attempt to smooth out the workload over the semester. The students are the real masters of time management. They combine and juggle requirements, figure out how to sequence work on assignments, and sign up for a large number of classes and then drop them at the last possible moment if the combined workload becomes too heavy.

In most cases, students do all this time management in a candid and straightforward way. Unfortunately, in other cases, time scarcity at MIT – like any other shortage – causes dissension and resentment. For example, the student stress minimizer depends on the cooperation of faculty members, who have to be willing to shift homework assignments, paper deadlines, or quiz dates forward or backward by a few days to smooth the student workload. Some faculty members would be willing to do this, but by no means all. As the report of the Student Advisory Group of the task force explained, while students often feel that faculty members should spend more time in personal interactions with students, faculty members often feel that students spend too much time on their own time-

wasting activities (each faculty member has his or her favorite culprits: parties, computer games, athletics, . . .).

Furthermore, faculty members blame one another for taking up a disproportionate amount of the student’s time budget. Nearly all curricular discussions boil down to competition for the student’s time. Because faculty members are not able to agree on priorities, they all throw their requirements onto the heap, and the result is the curricular logjam. Scientists are sure the major requirements of the engineering departments are the main source of curricular overload. Engineers are sure the heavy General Institute Requirements (including the new biology requirement) are the problem. Humanists blame both science and engineering for heaping so many problem sets on the students that they doze through discussions and dash off papers at the last minute. The MIT curriculum is an educational commons that has been severely overgrazed, the result being exhaustion not of land but of students.

This situation worries everyone, because it leads to a sort of Gresham’s Law that bad time drives out good. MIT’s lifeblood of creative work, for faculty members and students alike, depends on having two different types of high-quality time: time for intellectual grazing, when random and apparently disconnected ideas are brought together in new ways, and time for prolonged and intensive work on ideas and projects. Time that is cut up by multiple demands, or cut across by multi-tasking and incomplete attention, is generally less productive. Weed time seems to keep spreading, driving out the better varieties.

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On the task force, we understood that we were describing the problem, not really solving it. Our report contends that increased time commitment to community is essential for MIT's educational leadership, but provides no convincing mechanism for providing that time. We did ask the Institute to "recognize" student and faculty participation in community activities in the form of notations on student transcripts, or to have community participation considered a part of a faculty member's teaching record in tenure, promotion, and performance reviews. These are weak recommendations compared to the dominant reward structure, which is based on teaching as judged by the department and on research performance as judged by the extended scholarly community. After the task force's report, as before, community time remains marginal pro bono work, undertaken by a limited pool of dedicated faculty "good citizens" attracted by a hard-to-define set of rewards, including the hope of "making a difference." That is why the task force report ends with a call for a deep "cultural shift." If you feel it is well-nigh hopeless to change socioeconomic structures, you can always call for cultural revolution.

Two years to write a report! Governance, whether of MIT or of our society more generally, depends on investing time in decision making. Here it is difficult to achieve significant gains in productivity. Gathering relevant information and reflecting on it are activities that cannot be greatly compressed. Accordingly, institutions and individuals often do an informal cost-benefit analysis and figure that the consequences of making a less-informed decision will cost less than spending much more time to arrive at a well-informed one. This is the

paradox of "the rationale of growing irrationality," by which quality of decisions declines because the processes of argumentation, negotiation, reflection, discussion, compromise, adjustment, and response are so woefully inefficient.

But there is no other way to compose a common world. In a reflexive world, time is as reflexive as anything else. How we invest in time shapes and reinforces our future investment. When time and space are in short supply, community life suffers and shortages of time and space become even greater. There is an old saying that it takes money to make money. Similarly, it takes power to produce power, and it takes civic time to make civic time.

Provost Bob Brown once commented that "community has a cost: it's time." The only way to have community time taken seriously is to pay the cost. But how does an institution do this, especially when the people there are so tied up in networks of achievement that extend beyond the institution and over which it has no control? At least in theory, the space crunch can be relieved by spending huge amounts of money. There is no obvious financial solution to the time crunch, however.

Time scarcity is psychologically much more complex than space scarcity. Space is perceived as material and external. It is someone else's problem: if it is not provided, you can get angry and frustrated, but you do not typically blame yourself. Time is different. Time is you. When you are short of time, you scrutinize your priorities, then run through a private cost-benefit analysis, then make some accommodation between your own desires and your obligations. Time management is so stressful because this internal process involves such an

array of subconscious desires and guilts.

The most serious obstacle to reducing the time crunch at MIT is the conviction of so many people there that it is inevitable because its sources are internal, not external. We have constructed a silicon cage of internalized discipline. In the task force's many discussions about the time shortage, over and over again faculty members (and students too) said that they drove themselves relentlessly, and then even if they were somehow given more time they would continue to drive themselves. In our truly honest moments, some of us admitted that our lack of attention to "community" was due less to a lack of time than to other priorities. We really like to teach, learn, and do research. Without a "cultural shift," the internalized drive toward individual priorities was not likely to change, and no one could see where that shift might come from. Even if MIT were to figure out how to pay the cost of buying time for "community," would the offer be accepted?

MIT staff have the same tendency to internalize the problem of time scarcity. At one all-day Reengineering retreat, the facilitators concluded by asking people what one change in the reengineering process would be most helpful. As usual, stickies were passed around for people to write on and post on the walls. Most of them ended up bearing a single word: TIME. Earlier in the day, we had engaged in a discussion about time scarcity, which had led the participants to list possible remedies: stress-reduction techniques, cell phones, massages, and, of course, more lists. I commented that we had identified a collective problem, which might conceivably have collective solutions. So far all the suggestions

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Time Scarcity

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were individualistic in nature: should we not try to think of common remedies? There was silence, some nodding of heads, and then the discussion reverted to individual responses for “coping with stress.”

Most people at MIT do not think of these feelings and experiences as political issues. Staff, faculty members, and students continue to internalize and individualize the problem of time scarcity. In fact they often resist efforts to address it by a sort of defiant addiction argument: “That’s the way we are at MIT. We love what we do and whatever you do, you can’t stop us from working hard.” When Paul Gray was installed as MIT president in 1980, in his inaugural address he famously called upon the MIT community to take steps to reduce its deleterious “pace and pressure.” When he retired ten years later, he just as famously remarked: “I didn’t lay a glove on it.” These two incidents are regularly recounted in discussions of the time crunch to demonstrate its intractability. This is MIT. We will always be stressed. Just try to stop us.

I respond, quoting Karl Marx: “Economy of time, to this all economy ultimately reduces itself.” It takes a combination of institutional parochialism and macho posturing to deny a connection between the time crunch at MIT and larger trends of time compression everywhere apparent in the economy. We have always prided ourselves on long hours and hard work, but these are no longer unique. Everywhere today you hear the same laments about lack of time for enjoying life, family, and community.

One major economic driver of the time crunch is the much larger trend toward defining work as an accumulation of roles rather than as a series of tasks. Tasks can be completed; open-ended role playing is never done. This redefinition of work is evident in the new world of Reengineering, where workers are encouraged to see

themselves as free agents, moving from one team to the next. It is evident in engineering education, where entrepreneurship rather than job holding is the new ideal. And it is evident in the continuous expansion of the faculty role at MIT, as each professor tries to manage the integrated lifeworld effects resulting from multiple demands on time: research, teaching, private life, and now the MIT community. Occasionally the task force talked about trying to get a grip on this sprawl by writing a faculty job description, but we would have been swimming against the current in a world where employment in information-based work is defined less and less by “jobs” and more and more by ability to adapt, expand, shift, retool.

The protean and open-ended nature of the faculty role is, for better or for worse, a portent of the way things are going generally in the world economy. Such roles offer flexibility and variety; however, as open-ended hybrids, they place ceaseless demands on individuals who are unable to distinguish the internal world from the external one and who, with mixed self-praise and self-blame, regard themselves as the source of their own busyness. MIT faculty members offer love of their work as a reason for putting up with the degradation of the common world. They are, in the words of the economist Nancy Folbre, prisoners of love.

Where have we heard this before? The other job that people do because they love it, they say, sort of, is motherhood – a priceless source of joy that, when you cost it out, carries a huge price tag for women in lost wages and opportunities. It has taken the women’s movement decades to develop the conceptual tools to begin to address the “prisoner of love” argument. Self-exploitation is still exploitation, just as in Reengineering self-Taylorizing is still Taylorizing. In developing a new Politics in Latour’s sense of the term (i.e.,

the progressive composition of a common world), what has been learned in the women’s movement is crucial to success.

The appeal to faculty members to devote more time to “community” when no tangible reward is offered sounds eerily familiar to women. A faculty survey done by the MIT Planning Office in 1997, which became an important part of the “information gathering” of the task force, shows that female faculty members at MIT are more likely than their male colleagues to be asked to set aside time for the MIT community, and more likely to agree to do so. They also feel significantly more stressed in their professional lives. It is not clear from these results if women feel this way because of greater attention to family life or because of greater susceptibility to guilty feelings. It does not matter. If MIT or any other institution relies primarily on “good citizenship” to motivate people to set aside “community time,” women will respond, and suffer, disproportionately.

The dilemma is that “building community,” to use that favorite phrase of the task force, makes demands on the lifeworld. Each human link one tries to make, each connection, each message, each effort to reach out and touch someone, happens both in space and in time. The framework of the lifeworld will continue to degrade until it is recognized that the provision of common time and space is part of Politics. The state of lifeworld consciousness today is similar to that of feminist consciousness in the 1950s and the early 1960s, when there was diffuse angst, anger that had nowhere to go, and vague awareness of a “problem that has no name.” In confronting the crisis of the lifeworld, we are just beginning to understand, again, that the personal is the political.✦

[Rosalind Williams can be reached at rhwill@mit.edu]

SpamAssassin

Theresa M. Regan

[The IS Director of Office Computing Practice tells of new ways for faculty to deal with unwanted e-mail.]

As a member of the MIT faculty, you have probably found yourself overwhelmed by the volume of unsolicited and unwanted “junk” e-mail. The previously simple task of sorting through one’s messages and identifying particular items requiring some action, has become increasingly difficult and often times perhaps frustrating.

Until now, the options available for handling this e-mail nuisance have had limited effectiveness. You could try to identify the messages you do not want to receive by filtering on key phrases such as “lowest mortgage rates” or “toner cartridges.” Or, perhaps attempt to identify the messages you do wish to receive by filtering on the sender. But, with a large and dynamic student body, a diverse community of colleagues, collaborators around the globe, and the unbounded nature of the problem, it is a difficult challenge.

To this point, the most common and practical solution has unfortunately been to simply evaluate each message and delete those that were not wanted. Information Systems has recently added features to the MIT mail system to provide an alternative for those members of the MIT community who receive their email directly from the Institute’s central mail servers to help manage the ever increasing volume of “spam.”

SpamAssassin to Help Provide Relief

Information Systems recently announced the deployment of the open source spam identification software SpamAssassin <<http://spamassassin.org>> on the MIT central mail servers. SpamAssassin performs rule-based text analysis of the headers and bodies of e-mail messages, producing a cumulative numeric score indicating the likelihood that a message may be spam. The higher the numeric score associated with a message, the more likely it is considered spam. A series of additional headers are now added to each delivered e-mail message containing the results of SpamAssassin’s analysis. You may

have already noticed these additional headers, which have the form

- X-Spam-Score: 4.5
- X-Spam-Flag: NO

Further information will be found at <<http://mit.edu/is/help/nospam>>.

How Do I Use SpamAssassin to Filter Spam?

There are several options available based on how you receive your electronic mail. MIT’s mail servers provide two options for accessing stored e-mail: the Post Office Protocol (POP) or Internet Message Access Protocol (IMAP). Should you access your e-mail via the POP method, the e-mail software on your computer can be configured to take advantage of the additional headers. This is done by setting up a filter that moves messages with the X-Spam-Flag header set to “YES” to a different mailbox.

IMAP clients allow you to configure your mailbox so that the server delivers all messages flagged as spam to a sub-folder of your Inbox. Additionally you may further configure your server settings so that e-mail in the sub-folder is purged automatically of messages older than fourteen days at regular intervals. Messages in the sub-folder count in your 250MB mail quota. Since spam accumulates quickly you need to either configure your mailbox to automatically purge the messages or manually do this frequently to ensure that delivery of your e-mail is not interrupted by your mailbox being full.

The challenge of identifying spam is constantly changing and difficult. “Spammers” are real people whose goal is for their message to reach your eyes. They continue to adapt and develop alternative methods in the hopes of defeating the numerous identification and filtering tools that are available. The solution Information Systems has implemented requires that we commit to change and adaptation as the methods spammers use change. Spam identification is not an exact science. Thus, some legitimate messages will be flagged as spam and some unwanted messages will not be flagged. Information Systems recommends that if you choose to filter spam, you review regularly all the messages scored

as spam the first six to eight weeks to ensure that any legitimate e-mail is not mistakenly filtered as spam.

One of the most common types of messages mistakenly identified as spam are subscription newsletters such as airline special fares announcements and security announcements. To help better identify the legitimate messages you can customize your “Allow” list in your spam settings to not mark messages from a particular sender address as spam. You may also configure your spam scoring threshold, the score above which messages are flagged as spam, and any of your other personal spam settings.

The Contents are Untouched

Be assured that the contents of your e-mail are not being filtered, changed, or blocked. All mail sent to you at MIT will be delivered without modification as it always has been. Should you choose not to take advantage of these new features, the only change you will experience is the addition of the X-Spam headers to e-mail messages you receive. The decision is left to you, and you may elect to use these new features either by making a filter within your e-mail client or the creation of a specific IMAP mailbox. Please remember the IMAP solution requires you to periodically delete the messages within the mailbox, or configure your personal spam settings so it is purged automatically.

Further Information and Assistance

Information Systems Spam Screening Website is your best source for information on handling spam. Information is available pertaining to:

- A list of pros and cons about both the POP and IMAP solutions
- Instructions on setting up the most prevalent e-mail clients to take advantage of spam scoring
- Details on customizing your personal spam settings

The Computing Help Desk is available to help implement the solution that is right for you. They can be reached via either phone at x3-1103 or e-mail at <computing-help@mit.edu>.

[Theresa M. Regan can be reached at tregan@mit.edu]

Deshpande Center Issues First Grants to Engineering Faculty

Krisztina Holly

[The executive director of the Deshpande Center talks about its purpose and the grants awarded MIT Engineering faculty.]

The Deshpande Center for Technological Innovation (Deshpande Center) announced on March 3, 2003 that it issued its first round of grants for 2003. Selected from 34 pre-proposals in this round, the grants were awarded to MIT faculty in the School of Engineering and support a wide range of emerging technologies, including tiny technology, information technology, and alternative energy innovations.

Part of the School of Engineering, the Deshpande Center was established last year through a \$20M gift from Jaishree Deshpande and Desh Deshpande, the co-founder and chairman of Sycamore Networks. The Center was created to serve as a catalyst for innovation and entrepreneurship by supporting the research of MIT faculty and facilitating collaboration among entrepreneurs, venture capitalists, innovative businesses, and MIT faculty.

The Ignition grants awarded provide seed funding of up to \$50,000 each and benefit those projects in the early, more conceptual stages. The grants help catapult risky ideas into research that, if proven successful, would have broad implications on technological innovation. Judged by the Deshpande Center's steering committee and an extended panel of experts, grant recipients are selected based on the novelty and potential

impact of the proposed research programs. In addition to receiving research funding, grant recipients are introduced to a host of business resources on and off campus.

Professor Charles Cooney, faculty director, said, "I am thrilled with not only the number of proposals submitted by the faculty, but by the quality and potential of the proposed research."

The Deshpande Center's next grant deadline is June 6, 2003. The grants will be awarded in the fall of 2003. Additional information on the Deshpande Center's grant program, research portfolio, and other entrepreneurial resources can be found on the Website: <<http://web.mit.edu/deshpandecenter>>.

The 2003 grant recipients are:

Vladimir Bulovic:

Nanocrystal non-Volatile Memory Devices

This new innovation could lead to smaller, faster, and lower voltage memory for computers, cameras, and other electronic devices by combining organic chemistry and quantum dot technology.

Fredo Durand:

Contrast Reduction For Digital Photography and Video

This new image processing technology could be the key to taking full advantage of new high dynamic range digital cameras.

Eric Feron:

Slow down warning system for safe highways

This unique innovation would make the highways safer for drivers, even if a small fraction of vehicles had them installed.

William Freeman:

Image Analysis For Digital Cameras

This technology would enable cameras to recognize objects, making it easier to edit photographs and possibly enhance them automatically.

Jovan Popovic:

Reusable Deformations For Computer Animation

This technology would make the once very time-consuming work of animating characters much faster and easier.

Emanuel Sachs:

Metallization on Solar Cells

This method for applying circuitry to solar cells could make them much more affordable and energy-efficient.

Yang Shao-horn:

Novel Air Electrode Designs for Metal-Air Batteries and Fuel Cells

This new electrode technology could lead to an inexpensive, environmentally friendly, and efficient energy storage method.

Francesco Stellacci:

Bridging Nano-Lithography with Industrial Production

This innovative approach could solve the most elusive challenge with nanotechnology: scaling the manufacturing process.♣

[Krisztina Holly can be reached at zholly@mit.edu]

Letters**A Strategy to Deal with Increasing Journal Costs**

To The Faculty Newsletter:

Carol Fleishauer raises the important issue of the high and increasing costs of professional journals and suggests some sensible steps to take to mitigate the problem. ["Journals Purchasing Environment Poses New Problems to Faculty Research," *MIT Faculty Newsletter*, Vol. XV, No. 3.] Based on a recent experience I had serving on the governing board of a professional society, I advocate an additional strategy that may prove effective.

Many of the journals we subscribe

to are published under the auspices of professional societies that are (at least nominally) run by their members. These societies can choose among different printing houses and can distribute costs between page charges and subscriptions. Sometimes they use revenues from journals to subsidize other activities. In my case, the members, acting through the governing board, directed our professional society to make each of its activities independently self-sustaining, and to price journal subscriptions to reflect the actual production costs, which favors on-line over printed subscriptions. Both of these measures reduced costs and appear to have at least slowed the

rate of increase of subscription prices. We also persuaded the society to provide free and open electronic access to all of our journals more than four years out of date, thus virtually eliminating the issue of future access.

If you are a member of a professional society that publishes journals, I urge you to inquire about the costs and pricing policy associated with journal publication. A few concerned members can often steer their professional society onto a course more consistent with their stated mission of supporting research and education.

Kerry Emanuel
Professor of Meteorology

**Letter to Faculty Addresses Cost of Living and Proposed Rent Increase**

Dear Faculty:

We would like to bring to your attention the concerns of many MIT graduate students with regards to cost of living and in particular, the recent proposal for on-campus rent increase.

On-campus rents for graduate housing in the next academic year will rise by 6.5% on average, to the point where more than half of the beds will cost over 50% of the median student salary. Growing costs of living and insufficient stipend increases compound the problem. International students will be particularly affected, as they are not allowed alternative sources of income. In essence, on-campus housing is becoming unaffordable for MIT graduate students.

Yet graduate students are one of MIT's best assets. They do the research

upon which the Institute builds its reputation and future funding. We understand that these are challenging times for MIT. However, students cannot be forced to bear the burden of a bad economy. Nor should they have to pay for the managerial inefficiencies in the on-campus housing system, which loses millions of dollars every year.

If these problems are not properly addressed, MIT will lose in the long run. Prospective graduate students will turn to rival institutions, such as Stanford University, which offers better housing subsidies. The daily hassle of long commutes and challenges of living off-campus on a tight budget are negative distractions to students.

We hope that you use the power of your voice to convince the decision makers of MIT that graduate students are of top priority. Please help bring the cost of living down and in line with the stipends.

Sincerely,

Paulina Varshavskaya
Anke Hildebrandt
Mine Ozkar
Sidney Pacific Graduate Residence Officers

Joseph Acar
President, Graduate Association of Mechanical Engineers

Javier Arbona
Secretary, Architecture Student Council

Shunmugavelu Sokka
President, Sidney Pacific Graduate Residence

Sanith Wijesinghe
President, Graduate Student Council

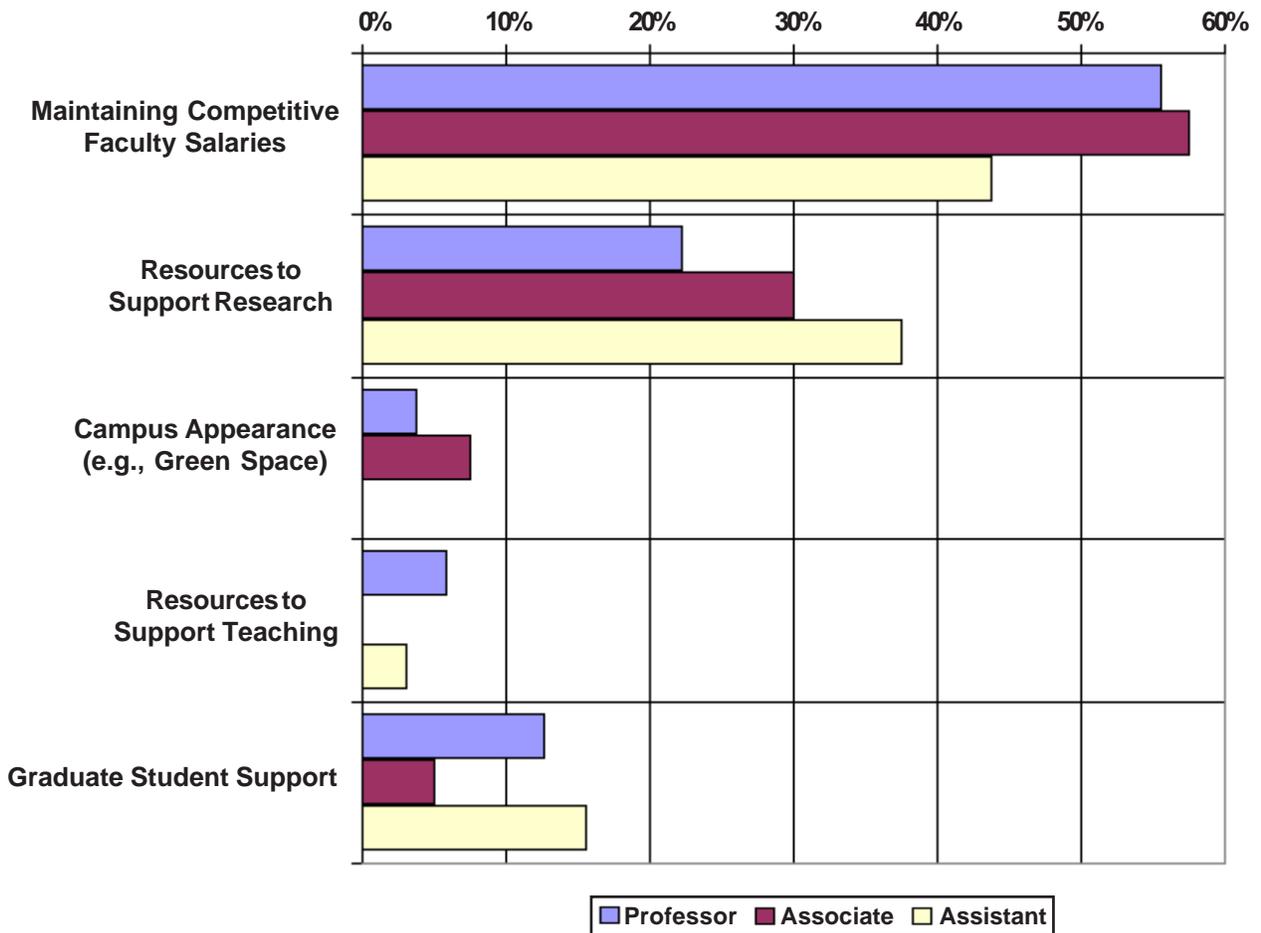
Roger and Dorothy Mark
Housemasters, Sidney Pacific Graduate Residence

Keith and Brenda Hampton
Associate Housemasters, Sidney Pacific Graduate Residence

M.I.T. Numbers

from the Faculty Housing Survey 2001-2002

While Housing is Important to Me,
There are Other Things that are More Important



Source: Office of the Provost