

The MIT Faculty Newsletter

Vol. II No. 3

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Presidential Selection Imminent

March Announcement Likely

Robert M. Solow

With any luck, this will be my last chance to report to the faculty on behalf of the Faculty Search Committee about the progress of the search for a new President. The next public event will be the naming of Paul Gray's successor.

We are aiming to be finished in time for the Corporation meeting in March. We think we are on schedule, but of course it is impossible to rule out an unexpected source of delay.

When I say "we" I really mean both the Corporation Committee on The Presidency and the FSC. The search process, which began seriously in September, has been carried on completely as a joint enterprise. We have heard of other university searches in which faculty participation has been secondary or peripheral. That is definitely not the case here.

Nor do I mean just that the process has been conducted "correctly." It has been a shared enterprise. If that sounds yucky, so be it. Sometime before early March we expect the two committees together to settle on a candidate. One always hopes for something like unanimity, at least after full discussion, but that remains to be seen. In the end the CCOP will have to conduct a formal vote and forward its nomination to The Corporation. We are comfortable with that formality, and have full confidence in the process.

Because of Christmas, I am writing this without my files. (The volume of paper is enormous, needless to say.) So the numbers I am going to quote may be inexact, but will give the right impression. We must have sifted through nearly 200 names

initially, some originating with the committees, some by letter from inside and outside MIT, some from consulting lists of people in responsible positions in universities and elsewhere. (We decided not to employ a firm of head-hunters, though there are some that specialize in academic searches. Looking back, I think the probability is negligibly small that we missed a serious prospect that way.) Most of that large pool we felt we could safely eliminate. But members of the two committees made telephone calls and wrote letters seeking preliminary information about - here I am guessing - 70-80 people.

After discussion within the committees, we ended up interviewing about a dozen people from within the current MIT faculty and almost that

(Continued On Page 4)

Editorial

A New President For a New Era

Entering the 1990's we are leaving behind not just the 80's, but the 40 year post-WWII period of US history. The extraordinary changes in the international arena are relegating the Cold War to the history books, and with it much of the rationale of US foreign and domestic policy.

In the economic arena the period of US pre-eminence and monopoly is past; we are being integrated - somewhat painfully - into a world economy. The electronic revolution is transforming production processes so that much more can be produced with far fewer workers. Sophisticated goods formerly available in only a few countries now flood the world market. The application of electronics and computer science in communication has brought the farthest outposts of the Earth into regular communication.

Simultaneously, a new class of problems is emerging on the global scale; the greenhouse effect, ozone depletion, decaying infrastructure, a worldwide AIDS epidemic, continuing impoverishment of hundreds of millions of people. At home, problems such as widespread homelessness - not seen since the great depression - present themselves to us daily. For the first time in 40 years, real wages are declining for a substantial sector of the workforce and

(Continued On Page 3)

INSIDE: IAP: A New Direction? - Page 4
From The Faculty Chair - Page 5
Context II: The Sequel - Page 7
Table of Contents - Page 2

Table of Contents

Presidential Selection Imminent	1
Editorial - A New President for a New Era	1
IAP: A New Direction?	4
From The Faculty Chair Many Hands on the Tiller	5
A Science and Engineering Program for High School Teachers	6
Context II: The Sequel	7
Open Letter to the Faculty from the MIT Association for Postdoctoral Women	9
Nerds Versus World Leaders	10
MIT Numbers	12

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Editorial

A New President For a New Era

(Continued From Page 1)

the next generation will be educated less well than its parents. Shrinking fiscal support for higher education increasingly constrains the social potential of colleges and universities.

The problems of housing missiles should lie behind us. Ahead lie the problems of housing people; unleashing the civilian potential of communications technology; harnessing the biological revolution to prevent disease; protecting the ecosystem; exploring the planets; expanding scientific education to all - regardless of sex, race, economic class, or national origins.

The changes that are taking place in the social, political, and economic spheres will be reflected in all the institutions of the society. MIT is no exception. We will have to change in order to carry out both the educational and technological advances needed. It is serendipitous that we are in the process of seeking a new president for MIT at the beginning of this transition. Prof. Solow reports [page 1] that the selection process is entering its final phase.

What kind of president do we need? The main resource of the Institute is its intellectual community; the undergraduate and graduate student bodies, and the faculty and staff. The talent and energy of the students ensure MIT's appeal for young faculty; the quality of the faculty lures talented, motivated students. The combination attracts committed support staff and administration. The continuing interaction between these groups leads to a fertile and productive environment. It must become an interaction that includes all types of individuals, with women and minorities adequately represented in the ranks of the students, faculty, and administration.

The next president must lead

the Institute through the difficult waters ahead. Such leadership will be effective only if he or she has the full confidence of the faculty, students, and staff. This can only occur through the fullest participation of these groups in formulating and implementing policy, a change from current practice. Thus first and foremost, the next president

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The new president needs to be an individual who is sensitive to those aspects of undergraduate and graduate education which foster the fullest development of human talent. Similarly, the president will need to understand from his or her own experience the special environment required to foster scientific creativity and productivity. The trend toward treating the Institute as a corporation needs to be arrested. To achieve these goals requires someone with vision and ideals: A vision of science and engineering being harnessed to solve the pressing social problems of the present and to release the untapped human potential for the future.

The Cold War is behind us; in the coming period we need leaders who can unleash science and engineering in the service of the productive society. In the past period of established funding patterns for science and education, managers were adequate as leaders. In a period when priorities are being re-evaluated, we need a leader who can clarify at the campus and at the national level the importance of science and technology

for meeting human needs.

For the New Year we wish the Faculty Search Committee and the Corporation wisdom and foresight in their important deliberations.

Editorial Committee

Next Issue

Next month's *MIT Faculty Newsletter* will focus on several issues of great concern to the faculty. These topics include policy and procedures with regard to new faculty hires, tenure, promotion, retirement, and salary compression at MIT.

In particular we are interested in exploring the changing nature of some of these policies and providing an opportunity for identifying the dilemmas that exist. We encourage contributions on these topics or any issue that is of interest to the MIT Community.

Please forward your submissions to: *MIT Faculty Newsletter*, 38-160; or to any member of the Editorial Board.

We Need A Scanner

In a continuing attempt to upgrade the quality of the *MIT Faculty Newsletter*, we have recently purchased a state-of-the-art desktop publishing software program. In order to be able to take full advantage of this product, we need a scanner - a device which will enable us to input photographs, cartoons, or any type of graphic directly into the computer.

We are hereby soliciting your financial support for this endeavor. Send all contributions to: *MIT Faculty Newsletter*, 38-160. Thank you.

IAP: A New Direction?

J. W. Mar

We, the MIT Community, are in the second year of a two-year experiment mandated by the CUP to (a) increase the active participation of the freshmen and (b) to increase the number of credit bearing activities. This experiment, which ends with IAP 1990, will show some modicum of success. However, during this experiment other issues, none of which is entirely new, have come to the forefront and need the attention of the faculty and the administration.

The potential benefits of IAP for the undergraduate student are many. For example, it can be a period for (1) a change in the style and pace of learning, (2) intense UROP involvement, or (3) independent activity. MIT, being the Institute of Technology that it is, should be able educationally to exploit its unique 4-1-4 calendar.

The following discussion is based on the assumptions that IAP is a worthwhile concept and should be retained. Additionally, there are the perceptions that not enough of the faculty are giving IAP sufficient attention to make the month of January educationally beneficial for the undergraduate students and that most of the students are not reaping the potential benefits of IAP. The governance and management of IAP presently resides in the IAP Policy Committee, IAPPC, which is appointed by the President, and the Undergraduate Academic Support Office, UASO, which is a section of the office of the Dean of Student Affairs. There are "IAP Coordinators" for every Department and other entities. The IAPPC, UASO and the Coordinators wheedle, cajole and implore the faculty to devise offerings. Since neither the IAPPC nor the Coordinators have any power, other than that of persuasion, the results of these entreaties have been

discouraging. A conclusion is that the present governance and management of IAP makes it easy for most of the faculty not to think about IAP.

In paragraph 2.16.1 of Policies and Procedures are the following words: Contributions of the faculty and departments are as critical to the well-being of IAP as to the regular semesters.

To insure that the faculty regard IAP as it does the Fall and Spring semesters, the following actions are suggested:

1. The Department Heads and faculty will accept responsibilities for IAP with the same rigor and administrative actions as for the Fall and Spring subject offerings.

2. IAP subject offerings will be prepared at the Departmental level.

3. IAP subject offerings will be listed in the MIT Bulletin and the Registrar's Fall schedule book.

If IAP is to be an integral part of the educational experience of our undergraduates then it should be accorded the same attention and concerted effort as are the subjects required for graduation. There are a number of faculty who believe the governance and management of IAP needs to be changed. The proposed actions will make it easy to assign responsibilities where the present status is an IAPPC without any power.

The writer, presently the chairman of IAPPC, bears sole responsibility for the foregoing. He has had the benefit of many discussions with members of the IAPPC and others but this is not a Committee report. Each member of IAPPC is at liberty to claim credit for or disavow any of the assertions. The expressed opinions and the suggested actions are meant to stimulate a wider discussion by the faculty of these and other issues concerning IAP.

Presidential Selection Imminent

(Continued From Page 1)

many from outside the Institute. There were a few people we would have liked to interview as serious prospects who were simply not interested. We are still interviewing. Some time soon, the committees will have to come down to a short list and go on from there.

In the course of the search we have talked with insiders and outsiders, with prospects and non-prospects, about MIT and its future, about the issues that are likely to occupy the new president, and about the sort of person we need. We solicited faculty input and we have had valuable letters from the faculty in response. You collect a certain quantity of truisms that way, but a pattern emerges.

It should not be our role to prejudge the answers to the main questions of the 1990's through our choice of a president. But it is appropriate for us, as representatives of the faculty, to look for the sort of person who is aware of and cares about the important tensions within MIT and in its environment and who has the intellectual stature and the personality to deal effectively and collegially with the MIT community and to represent it to the outside world. Many have pointed out that the president of MIT will have the opportunity, maybe even the responsibility, to serve as a national voice for science and engineering and science- and engineering-education at a critical time for all of those enterprises. We think that is true. Of course it just states the problem, not the solution. That's the bad news.

The good news is that there are excellent candidates in here and out there, and we hope to present one of them soon. We have consulted widely with the faculty and learned from their advice. We have tried to act wisely as their representative in an important job.

FROM THE FACULTY CHAIR**Many Hands on the Tiller**

Henry D. Jacoby

Last year we had an internal discussion on the direction of the Institute, focused on the profile of the undergraduate class we want to admit. The Committee on Undergraduate Admissions and Financial Aid (CUAFA) carried out an intensive review of admissions policies and practices. Their findings and recommendations were reported to the faculty in May, and discussed further in our October meeting. CUAFA's recommendations fell into two main areas: the relative weights given to different applicant characteristics in admissions decisions, and the level of direct faculty involvement in the admissions process.

Regarding the first of these points, the Committee felt greater weight should be given to, ". . . demonstrated capability in MIT's traditional strengths of mathematics and science and in particular on a strong commitment to these disciplines." The admissions process was responding to this recommendation even while it was being formulated, and the class admitted last spring reflected such a shift. This year CUAFA is monitoring the performance of this new freshman class, and working with the Admissions Office on the calibration of policy in this area for the future.

CUAFA's other main recommendation was that there be greater faculty involvement in the admissions process, reading folders (at least 30, for full participation) and taking part in the "round-up" meetings where admissions decisions are made. The number of faculty taking part has never been greater than about 50, but in recent years has fallen as low as 15. In any one year there may be a half-dozen departments with no representation at all in the process.

Of course, with 7000

applications the faculty will never read more than a small percentage of the folders. But there are two reasons why it is important to increase involvement and gain more complete coverage from the different schools and departments. First, we need a

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number of knowledgeable participants in order to represent a full range of faculty views at the level of the details of the process. For all of last year's debate about SAT scores and various summary indices, decisions are made case by case, based in each instance on a complex set of personal information and performance data. In Michael Behnke we have an outstanding admissions director; he and his staff are dedicated to finding, admitting, and recruiting the best possible class. But of course they work within the broad criteria set by those responsible for the educational programs of the Institute. This overall process of criteria setting and selection will be strengthened by more working interaction with faculty.

Second, we need more people scattered through the faculty who truly understand the admissions process. Our discussion of admissions criteria will never be completely settled, certainly not in the next few years when we face continuing change in the demography of the high school supply pool and potential change in the strategic positioning of some Institute schools and degree programs. Last year's discussion was not as productive

as it might have been because many faculty involved in it, I among them I must admit, had no first-hand experience of admissions. For the future we need a wider and better distributed group of faculty who are well informed and experienced in working with the implementation of broad statements of admissions policy.

CUAFA is making an extra effort this year to improve faculty participation. It is working with the department chairs to establish continuing liaison among the departments, CUAFA, and the Admissions Office. Also, each faculty member has received a note from CUAFA chair David Epstein and Michael Behnke inviting us to take part. These efforts deserve our interest and support.

If you are willing to participate as a reader, or are just interested in spending a more limited amount of time to understand the process better, the entry point is on January 17. That afternoon the Admissions Office will hold a "mock" round-up using real cases. By attending this session faculty can see how cases are evaluated, and participate in discussion with admissions staff on what the faculty is looking for in prospective students. The session will be held in 6-120 from 2:30 to 4:30. If you plan to attend and have not already returned the RSVP sent with the Behnke-Epstein letter, or if you have any questions, please contact Patti Cox in the Admissions office (3-4791).

This is not likely the last time you will hear a call for more hands on the tiller. The litany of external changes requiring our attention is well known, and internal discussions of direction are under way in several places in the Institute. Many issues will need to be resolved during coming

(Continued On Page 11)

A Science and Engineering Program for High School Teachers A Step Along the Road to Change

R. M. Latanision

Concern over declining science and engineering enrollments in U.S. universities and, even more broadly, low levels of technical literacy among the U.S. public is now widespread and sounding a national alarm. Such decline threatens not only this nation's industrial future, but our very quality of life. Yet, despite all of the reports written in the past decade on the educational crisis in the U.S. (nearly 300, in fact), little concerted action has followed.

This nation's stability today...is less affected by military threats than by increasingly confrontational relations among global trading partners....

In this country we seem to respond to threats with vigor and determination only when such threats are perceived to affect national security; for example, the Russian launching of Sputnik led to massive government-university-industry action in the 60's. This nation's stability today, however, is less affected by military threats than by increasingly confrontational relations among global trading partners and the U.S. decline as a manufacturing nation. From either the point of view of the national security or economic well-being, it seems to me that a technically literate population and workforce is vital. Our way of life and that of all industrialized nations is driven by science and engineering.

Without the general perception of threats like Sputnik, can the public's interest in science and engineering be stimulated? Is there a role for MIT in encouraging such

interest? The answers, I believe, are yes and yes!

This past Spring, the staff of the Materials Processing Center designed a program that combined lectures, laboratory tours, and hands-on demonstrations to emphasize the continuity between the principles of science, as taught at the high school level, and the extension and application of these same principles by scientists and engineers at the university level to create engineering systems of value to society.

Thanks to the commitment of the faculty and staff members from the Schools of Science, Engineering, and Management, this program was highly successful. While I have no illusion that we have the only prescription to remedy this educational problem, I believe that our program could serve as a model for other research universities and, if broadly implemented, could provide a grassroots mechanism for addressing the problem of science and engineering education in America. Let me, briefly, describe the June 1989 program.

Fifty high school science teachers from New England were selected to participate in the program. In designing the program we recognized that teachers - the permanent deliverers of the experience - are the key to catalyzing student interest and enthusiasm in science and math. Many, however, are untrained in the sciences themselves. Even among those prepared to provide science education, personal experience in engineering is minuscule. Our experimental program was not designed to train or retrain those responsible for science teaching in high schools. Instead, the program offered teachers a new perspective through a one-week exposure that

demonstrated how engineers apply the principles of science to meet the technological needs of society. In short, we had hoped that after attending this program, teachers would return to their classrooms with a renewed enthusiasm that would generate excitement for science and engineering among their students.

The program began with an update of the state-of-the-art and frontiers in chemistry, physics, math, and the life sciences. Next came a discussion of the first principles of the synthesis, processing, properties, and performance of new materials, emphasizing the view that useful materials must be produced in shapes and with the properties required for use in engineering systems. The week ended with presentations on the design and manufacture of engineering systems, including management and techno-economic decision making, with emphasis placed on engineering systems important to international commerce and the national defense (integrated circuits, aircraft engines, artificial intelligence, and bioengineering) as well as systems that affect the quality of life on Earth (such as water treatment, the infrastructure, and energy conversion). Each day was intensive, with morning and afternoon lectures and laboratory visits and an evening dinner with the faculty and staff. A 30-minute videotaped summary of the program is available to anyone who would like to see it.

Financial help from the Carnegie Corporation of New York, the Office of Undergraduate Education, the School of Engineering, and the MPC, provided free tuition, room, and board for the teachers.

Six department heads and four center directors were among those

(Continued On Page 8)

Context II: The Sequel

Context Support Office Established

L. M. Lidsky and M. R. Smith

The Context Initiative is based on the premise that reductionism has its limits and that the interaction between narrowly-defined disciplines is interesting and important. The goal of the Context Initiative is to facilitate cross-disciplinary activities for their intellectual and pragmatic values.

Phase One of the Context Initiative, focused on the development and teaching of general "Context Courses" has been completed. It is clear that the complex problem does not have a simple solution. Some of you told us that Context subjects would not work and some of you have reminded us that you told us. Peace.

Phase Two of the Context Initiative is, we believe, more realistic. It is based on the Low Report on Context issues circulated to the faculty last October. We will attempt to strengthen and publicize the many activities at the Institute that already deal with cross-disciplinary areas, most notably those that deal with the interactions of technology with the rest of society. We are compiling a list of those "natural context" subjects identified by Francis Low's Context review group. We are setting about to implement some of the other suggestions made in the Review Group Report. As you will see below, we have already arranged for several IAP activities. We are discussing the possibility of setting up several UROP-like activities based on local (i.e., on-campus) environmental concerns. We are in the very early stages of planning a faculty minicourse focused on the art and aesthetics of engineering.

Perhaps the most important thing we have done is to establish the Context Support Office as a focus for information, inspiration, and support. We (Lidsky and Smith) will be co-directors of the Office, Assistant Dean

Peggy Richardson will act as the executive officer. Seed funds have been provided by the School of Humanities and Social Sciences and the School of Engineering, as well as

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by the Dean for Undergraduate Education. The Office is located in Room 20B-141, sharing space with the Undergraduate Education Office, who will provide all staff support. Contact any of the three principals with ideas, questions, requests, or information. We hope that the Office will serve as both catalyst and clearing-house; we'll work out our procedures as we go along.

As one of our first projects, the Context Support Office is planning a Faculty Forum on Thursday, January 11, on the question, "Should MIT try to influence public policy?". The forum, to be moderated by Paul Gray, will feature faculty panelists with a variety of opinions on the question - Richard Lester (Nuclear Engineering), James Melcher (EECS), Daniel Roos (Civil Engineering and CTPID), and Eugene Skolnikoff (Political Science and CIS) -- and will then be open for audience debate.

Planning for the forum was stimulated in part by Professor Melcher's article in the October *MIT Faculty Newsletter*, which argued: "Much as we like to picture MIT as determining its own direction, our history shows us to be overwhelmingly shaped by outside 'political' influences over which we have had little control. Once the US decided to fight the

battle of the North Atlantic, MIT responded with the Radiation Laboratory. The post WWII decision to defend against Russian ICBMs resulted in our Lincoln Laboratory. Our Space Center originated from Kennedy's commitment to put a person on the moon and our Energy Laboratory reflected the concerns of the 70's for energy and environment....Given that MIT's future is inextricably the future of US industry, and that political decisions will be decisive in turning resources from fighting the ghosts of the past to the real problems at hand, it is clear that MIT must now enter the political arena. MIT's future is MIT's business."

The simple question, "Should MIT try to influence public policy?" contains in its answer any number of additional questions: If yes, how?; If no, why not? Not to mention such issues as "What do you mean by MIT?" and "What do you mean by influence?". What do you think? Don't miss the opportunity to hear all sides of the argument on Thursday, January 11, 9-12 Noon, in Room 6-120.

Two other activities are being planned during January at which we encourage faculty participation:

-- "Is the Arms Race Winding Down?" If so, what are the implications for the pursuit of science and technology in America? Should well be an interesting debate on a particularly timely topic. With Professors Robert Fano, James Melcher, Carl Kaysen, Lester Thurow, Theodore Postol, and Dr. Kosta Tsipis. Monday, January 29, 2-4 pm in Room 4-163.

-- "Is Nature Dying?" Is technology the problem or the solution? And can MIT be doing more to help? A panel

(Continued On Next Page)

Context II: The Sequel

(Continued From Page 7)

discussion with Professors Jay Keyser, Leo Marx, David Gordon Wilson, and Massachusetts Water Resources Authority head Paul Levy, '72. Tuesday, January 23, 2-4 pm, in Room 4-270.

We'd like to hear from you if you're incorporating contextual material into your subjects. A number of freshman and sophomore level subjects are having good success with taking time either at the beginning or end of class to work in some "current events" or other real world examples to illustrate the impact of the example on the discipline. Gus Witt has been doing this in 3.091 for years, and the new subject SP01 devotes a portion of each Friday's lecture to current events.

The freshman chemistry classes hosted a visit from Congressman Daniel Ritter who spoke about "Science, Technology and Politics" one evening in November in response to the students' clear enthusiasm for the topic. Aero/Astro faculty member Edward Crawley also endorses what he calls "mainstreaming Context" and devotes time before each Unified Engineering lecture to informal discussions of current events and feels that all faculty should try to work contextual material regularly into their classes. To clearly signal that this information is important, some faculty have taken to putting a question on the quiz that incorporates the material discussed in class.

The Context Support Office exists to support and encourage faculty and students interested in exploring issues at the interface between science, technology, and society. We believe our task is to create an environment in which contextual issues are highlighted and their study facilitated. We want to hear from you if you have an idea, opinion, or want to get involved.

A Science and Engineering Program

(Continued From Page 6)

from MIT who took part in the program. Their participation emphasized the commitment of MIT to the educational enterprise that begins in elementary and secondary schools.

...to at least 50 high school teachers, MIT is now perceived as more humane than they had ever imagined.

Our guests' reaction to this program was remarkable. We not only achieved the objective of illustrating the important interrelations between science and engineering; we also, through our speakers, impressed our colleagues from the high schools as being genuine in our concern about education in America. To some teachers this was quite a surprise since they expected, given our standing as a technological institute, that we were so insulated from declining student interest in the sciences that no one here would care. We are all, of course, part of the same educational continuum: high school students today are our students tomorrow and, ultimately, they represent the future educated workforce required by industry. Moreover, our guests really appreciated the interest of the MIT faculty in them as individuals. I am not sure that I know exactly what our image was prior to this program, but to at least 50 high school teachers, MIT is now perceived as more humane than they had ever imagined.

I believe that this experimental program also represents the beginning of an important period in New England science education. First, I'm certain that this program, perhaps with some fine tuning and the necessary fiscal resources, should become a

regular part of our summer session at MIT. Secondly, the remarkable group of teachers who attended the program were most energetic: they met well into the evening after each full day of topical presentations in order to discuss philosophical questions and broader policy issues. They have organized themselves into what is now a loose federation with representation from each New England state. Working with these delegates, we planned a weekend conference in November at which the teachers reassembled to establish an agenda for high school science (and engineering) education in New England. The president of the National Science Teachers Association and an officer from NSF's Science and Engineering Education Division addressed the group. The support required for this weekend conference had been generously provided by corporations in New England: Analog Devices of Norwood and Texas Instruments of Attleboro, Massachusetts; Pratt and Whitney of Connecticut; and Hitchiner Manufacturing of New Hampshire.

The implications of this meeting are, I think, enormous in the sense of a grassroots phenomenon that may begin with this truly committed group.

MIT has served as a catalyst in this process, but broader university and secondary school collaboration is needed.

I'll keep you posted on the consequences of all of this. For the moment, I want to publicly thank all those who have been associated with the MIT Science and Engineering Program for High School Teachers and I'd like to invite those who are interested to join us next summer in the second edition of this program. This MIT Program may be only a small step along the road to change in the American education system, but it is a real step.

Open Letter to the Faculty from the MIT Association for Postdoctoral Women What can the Faculty do to Help Postdocs Succeed?

Colette Hodes, Jenny McFarland, Sarah Pallas

"All animals are equal, but some animals are more equal than others."
[George Orwell, Animal Farm, 1945]

This letter provides information about postdocs at MIT and asks you to help us in our efforts to improve our working conditions. We believe that your efforts to help us will be beneficial not only to us, but to you and the entire Institute community.

Although it is very difficult to obtain statistics, estimates show that there are approximately 500 postdocs at MIT. There are many issues that are of concern to postdocs.

First and most important, postdocs have no voice at MIT. There is no office or advocate for postdocs. Second, at a crucial point in our careers we are sometimes isolated from peers and often receive little guidance in our careers. Third, at a time when we are spending long hours in the lab, we are also at an age when many of us are making important family decisions and sometimes becoming parents. The conflicts between work and family life can become very stressful, especially for women postdocs, since they are often taken less seriously as professionals if they have or plan to have children. Finally, all of these problems are compounded by the low salaries postdocs make (generally \$17,000 to start).

There are two types of postdocs at MIT: postdoctoral fellows and postdoctoral associates. Although they are here for the same reason and perform the same tasks, there are important practical differences (and inequities) between associates and fellows. Postdoctoral associates are employed by MIT and receive requisite benefits. Postdoctoral fellows are not MIT employees! They receive

stipends, but no benefits. Individual postdocs are sometimes switched between fellow and associate status by her/his employer without being notified.

...postdocs have no voice at MIT. There is no office or advocate for postdocs.

There are many significant problems unique to fellows. They are not eligible for Workman's Compensation in the event of an accident in the lab. They also are not eligible for the employee health plans, but have access only to the "Affiliate Health Plan", which is expensive and often grossly inadequate, especially for families.

The issues that are of concern to women postdocs in particular include: hiring women faculty and administration and the development of better sexual harassment and pornography policies. We need role models - we need to know that people who "look like" us can have successful, happy careers in science and engineering. To this effect we need to see more women, and "non-traditional" men, on the faculty at MIT.

In order to address many of these problems we have formed an active organization, the MIT Association for Postdoctoral Women, with funds from the Schools of Science and Engineering, Whitaker College and the Industrial Liaison Program. The main purpose of our group is to provide a supportive community for postdoctoral women and to share information. Several of the women faculty have been very generous with their time and support and have actively participated in some of our meetings. We have provided input to many MIT committees including: the

Women's Advisory Group (WAG), the Ad Hoc Committee on Family and Work and the Committee on Sexual Harassment, the Medical Consumers' Advisory Council, and the Equal Opportunity Committee. This summer we wrote and distributed the first edition of a Handbook for Incoming Postdoctoral Associates and Fellows at MIT.

In order to reach our goals, we would like stable institutional support and the support of the faculty. **What can the faculty do?** We suggest the following ways in which the faculty can act to support postdocs at MIT.

- We would like to receive active support, encouragement, and advice from faculty. Postdocs are not here to serve as drones to get research done for faculty; to treat us as a source of cheap labor does a disservice to the individual postdoc, to MIT, and to science in general.

- Postdoctoral fellows would appreciate the support of the faculty in our efforts to improve the overall treatment of postdocs and, in particular, to extend staff health plans and workman's compensation to fellows.

- We need the support of the faculty in the recommendations of the Family and Work, Sexual Harassment, and Equal Opportunity Committees in regard to the concerns we have outlined.

- We need support for active recruitment of women and minorities onto the faculty and administration.

- Although some lecturing in courses and seminars is welcome by and useful for postdocs, faculty and/or departments should not ask postdocs to teach **entire** courses or to act as TAs or graders. (MIT is supposed to hire people to perform such services.) Although explicitly against MIT policy,

(Continued On Page 11)

Nerds Versus World Leaders

Kerry Emanuel

In her article in the *MIT Faculty Newsletter* [Volume II, No. 2], Vera Kistiakowsky focuses the debate on admissions policy by raising the question of whether we should admit "nerds" (defined as those with high Numerical Indices but with low Personal Ratings) or students who "not only do well academically but whose broader interests lead to an understanding of national and world problems and a commitment to contributing to their solution." Her letter raises several interesting points which I would like to address.

I have served as a freshman advisor here for 7 years and among my advisees are a few who might be described by the casual observer as "nerds." I have found that under the admittedly unattractive shell of a

I find it ironic that students devoted to math and science are ridiculed as "nerds" while those with an equally singular devotion to beer, sex and sports are celebrated as "All American."

person perceived to have a single-minded devotion to math and science lies, almost invariably, a sensitive individual whose shyness and lack of social skills perhaps stems from the ostracism such a person is generally subject to at schools. These students are sometimes shunned even by their teachers, and Dr. Kistiakowsky is undoubtedly correct in stating that they would have a hard time getting into other top universities. I find it ironic that students devoted to math and science are ridiculed as "nerds" while those with an equally singular devotion to beer, sex and sports are celebrated as "All American."

Before coming to MIT in 1981, I served on the faculty of UCLA

for three years. There I found wholesome, well-rounded individuals who were a pleasure to interact with. But I came to MIT because I prefer its very special atmosphere, attributable to the special nature of its enterprise, its singular faculty and its unique student body. I hope we continue to admit students uniquely suited to MIT. To shun them as others do is only to contribute to the popular attitudes that I believe are largely to blame for the scientific illiteracy about which we purport to be concerned.

Yet one cannot disagree with Dr. Kistiakowsky when she admonishes that MIT should not graduate nerds. An 18 or 19 year old student is hardly a wholly formed individual and MIT does well to insist that the humanities constitute a prominent part of undergraduate education. We can certainly expand and improve this component. Students have the right to expect that the humanities will give them a sense of history, an improved ability to communicate, an appreciation of our culture and of others and an exposure to the arts...these are the subjects that give one perspective and a certain joy in life. But in the realm of politics, and to some extent ethics, there is a delicate difference between teaching students how to think and teaching them what to think. Frankly, I think students are wise to shy away from courses in ethics taught by academics. This no more indicates a lack of concern for this subject than declining to go to church to learn about evolution indicates a lack of interest in science. I by no means wish to denigrate the faculty who teach these courses but rather to point out that ethics and politics are highly personal matters traditionally (and perhaps best) learned in the home, in church (for some), and in dormitory hallways.

I agree with Francis Low that courses in such subjects should not be forced on students. Whatever else is done, students do learn by example and we would do well by fostering at MIT an attitude that puts the well-being of students ahead of or at least on par with our own personal success.

Finally, it has been stated that MIT suffers from not producing world leaders. I am not sure what is meant by that term, but I suspect it refers to political and/or corporate leadership. The David Baltimores and Richard Feynmans of this world do not qualify by that definition but they have improved the world immeasurably through their efforts. That they might happen to be working for others in some nominal sense doesn't bother me at all. The Yales and Harvards produce "world leaders", some of whom (e.g. Daniel Ortega) are making life miserable for millions. Let them do what they will, but let us continue to do what we do very well, to produce the science and engineering talent that has done so much to improve life.

Prof. Kistiakowsky Responds

Professor Emanuel identifies those MIT applicants who have been admitted with high Numerical Indices but low Personal Ratings (hNIIPR) with "students devoted to math and science." While there may be an occasional case where such devotion goes unrecognized, the hNIIPR is much more frequently someone who has devoted all of his or her energies to getting grades. Interest in science or math manifests itself, and this is reflected in the letters and activities on which the Personal Ratings are based. MIT should certainly seek to produce scientific leaders, but the likelihood of

(Continued On Next Page)

Prof. Kistiakowsky Responds

(Continued From Page 10)

increasing their numbers by admitting students who have never demonstrated any sign of individuality or creativity, is small.

In my article in the previous MIT Faculty Newsletter I suggested that MIT should produce leaders, and Professor Emanuel incorrectly assumes that I limited myself to political and/or corporate leaders. However, the days are long past when scientific and technological leadership meant only recognized excellence in one's own

On the question of ethics, the issue is neither a question of teaching the students how to think or what to think....It is teaching them that it is important to think about such issues.

field. Influential scientists and engineers today are those who have a vision beyond their fields and even beyond their disciplines. And I doubt that anyone would argue with the desirability of MIT graduates being among those who help create scientific and engineering policy, rather than just being the workers who follow its dictates.

On the question of ethics, the issue is neither a question of teaching the students how to think or what to think as Professor Emanuel suggests. It is teaching them that it is important to think about such issues. As I said in my article, the example set by the majority of faculty at MIT conveys the opposite message. It is interesting that at Berkeley a faculty committee advisory to the Academic Council recently recommended for the third time that the University's relationship with the weapons laboratories be

phased out. This may be contrasted with the recent report of MIT's Lincoln Laboratory Committee chaired by Joel Moses which did not grapple with the basic issues and advance the argument beyond the questions raised in the previous report written on this topic by the Smullin Lincoln Laboratory Committee (1986). The justification for the continuation of the present MIT/Lincoln Laboratory connection, presented by Professor Moses at the November faculty meeting, was the acceptance of the current arrangement expressed in thirty-six of the forty faculty letters received by the Committee, coupled with a healthy appreciation of the \$23 million cost of divestment. This don't-rock-the-boat pragmatism is the antithesis of ethics, and it is what we are teaching our students.

From The Faculty Chair

(Continued From Page 5)

months and years, and a key part of this task will fall within our system of faculty governance. Clearly, for the sake of our primary roles in teaching and research, it will be important to be efficient in the use of faculty time in these matters, and to focus effort on the most important questions. But for the sake of the effective guiding of the Institute, we will all need to be willing to pay attention to these matters, and to allocate some portion of our time and effort to the faculty's role in running the place.

Finally, a personal comment on a related issue. As we deal with the complex and contentious issues that change will raise, we need to treat one another with graciousness in public debate. Ideas and proposals are fair game, but I hope we can avoid unleashing our rhetorical skills in personal criticism of fellow faculty, as happened at a couple of points in our

November meeting. We will all work better, and more willingly, in an atmosphere of consideration and mutual respect.

Open Letter to the Faculty

(Continued From Page 9)

it does happen, and a postdoc is generally not in a position to say no.

- Faculty, especially the heads of departments and programs, could sponsor colloquia, workshops, and informal gatherings of postdoctoral fellows and associates. These functions could provide guidance, develop skills (such as grant writing), or merely improve the "climate" for the postdocs.

- There is no formal orientation for new postdoctoral fellows (unlike that for new faculty, students, and staff). There are many things that the faculty, department, or laboratory group can do to help new fellows. Please let new postdocs know that they should have a copy of the Handbook for Incoming Postdoctoral Associates and Fellows at MIT, available from us or departmental administration. Have your department or laboratory group buy copies of HowToGAMIT, for new research staff of all kinds. Finally, please support us in our efforts to establish an MIT committee responsible for concerns of postdocs.

Thank you.

Errata

Apologies to Prof. Herman Feshbach for misspelling his name in our last issue; also for the confusion on the continuation page of his article, "Minorities and Women at MIT." The first sentence on page 4 should have read: *The Bureau has estimated that only about 9% of the new entrants will be from the traditional white male cohort while the remaining 90% will consist of the minorities (55%) and white women (35%).*

M.I.T. NUMBERS

Faculty Participation in Undergraduate Educational Commons (UEC)

The activities included in UEC are given below, together with faculty participation in 1988-89.

Activity	Faculty Participants	
	#	%
1. UROP	413	41
2. IAP	211	21
3. Athena	71	7
4. Institute Committees Dealing with Undergraduate Matters	102	10
5. Freshman and Undesignated Sophomore Advising	61	6
6. Freshman Advisor Seminars	53	5
7. House Masters and Resident Fellows	36	4
8. Undergraduate Seminar	33	3
9. Admissions Folder Reading	<u>30</u>	<u>3</u>
Total	1010	

The following table addresses the question of how many individual faculty members participated in activities 4 through 9 in 1988-89

# Faculty Members	Activities per Faculty Member	# Activities
216	1	216
41	2	82
8	3	24
<u>1</u>	4	<u>4</u>
266		326

Thus 28.0% of the 949 members of the MIT Faculty participated in UEC exclusive of Athena, IAP, and UROP.
Source: Based on numbers taken from the "Report on Undergraduate Educational Commons to the Committee on the Undergraduate Program," Les Perelman (December 6, 1989).