

The MIT Faculty Newsletter

Vol. IV No. 2

October/November 1991

In Memoriam

Margaret L.A. MacVicar

Paul E. Gray

[Remarks made at the October 31, 1991
Memorial Service.]

The cultural expectation in our society is that occasions like this bring us together to celebrate the life of the deceased—to rejoice in memories of her accomplishments, her contributions to our personal and institutional lives.

Margaret's life was rich—extraordinarily rich – with remarkable accomplishments which give us much to celebrate. And I will return to that theme in a moment.

First, however, it must be said that this is an occasion for expressing shock, anger, and that numbing sense of loss which overwhelmed us on September 30 and which has accompanied us on every day since then.

I am shocked that Margaret should be overtaken by this awful disease, which appeared from nowhere in the prime of her life and which sapped her energy and vitality with its steady, inexorable, irreversible march of death.

I am angry at the unfairness of this year of torment and this death, which has taken Margaret from us at the very peak of her powers, at the crest of her creative efforts.

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Editorial

Overhead, Education, and the Technological Revolution

Since the onset of the Reagan presidency the U.S. government has systematically reduced public investment in education, from early child care to secondary school. We now lag behind most industrial countries and some third world countries in a variety of indices of educational achievement. The Children's Defense Fund calls for \$46 billion in new federal funds just to secure the earliest stages; daycare, preschool, and Headstart programs.

The higher education provided in major research universities such as MIT has appeared somewhat insulated from these depredations. In fact, higher education is now following the decline in elementary and secondary education. We are clearly in for a period of downsizing and contraction.

One of the forms of the disinvestment in higher education is the recent congressional effort to limit overhead costs on research. The payment of overhead costs was initiated by the Office of Naval Research in 1947 as part of their program to create a stable civilian base for scientific research and the production of scientists. It was codified

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Women's Studies At MIT

Ruth Perry

When, as a graduate student at the University of California in 1970, I decided to teach a literature class on Jane Austen, Charlotte Bronte, George Eliot, and Virginia Woolf, I did not know I was participating in an intellectual revolution. I was intensely interested in whether or not the gender of these writers would be visible in the way they handled literary structures, moral dilemmas, characters, and the like, but I did not understand the implications of my interest. Women's Studies did not yet exist.

Shortly after this, colleges and universities began to hire more women under pressure from the recently established Equal Employment Opportunities Commission of the federal government. As the numbers of (untenured) women in the academy mounted, feminist intellectuals began to ask such questions as: "What difference has the single-sex construction of my discipline made to the direction of that discipline?" Or: "How has the field I work in been affected by gathering information and perceptions from the perspective of only one gender? How has history been constructed the way it has been constructed – or psychology, literature, anthropology, or even biology

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Editorial

Overhead, Education, and the Technological Revolution

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in 1957 by OMB (Office of Management and Budget) as the A21 form. These funds played a major role in the growth of medical schools and graduate research programs in the post WWII period. They also were essential for the upgrading of undergraduate science and education. Although this aspect of the overhead payments was not always understood by bench scientists, it was well understood by the key congressional sponsors and also by university administrators.

There can be little doubt that universities have too often charged costs to the federal government which should not have been allowed. However, the recent federal audit

indicated that these errors represented less than 1% of the sums involved. Within Congress, the overhead issue will be latched onto as a mechanism for continuing to cut funding for universities, without admitting to reducing access to higher education.

From the student's point of view, a major source of assistance has been the Higher Education Act of 1965, one of the last actions in response to the 1957 Sputnik shock. This budget is reauthorized every five years, and was up this year. The bill which was recently reported out of the Senate Committee on Labor and Human Resources would increase the maximum of Pell grants from the current \$3,100 per student to

\$3,600 in 1994 and \$5,200 in 1999. This is a step in the right direction, but only provides limited help for students attending MIT and other private institutions. Even students attending their own "lower cost" state universities will continue to be pressed—for example the costs at the University of Connecticut next year will be \$8,658 (\$13,695 for

driven by the continuous increase in the level of education, and the expanding of the portion of the population that had access to higher education.

Why is this now reversing? One of the factors is probably associated with the current technological revolution led by electronics and biotechnology. A characteristic of these technologies, is

that they replace a large number of semi-skilled and skilled workers with a very small number of very highly skilled workers. For example, the full computerized and robotized plants recently opened in the auto and computer hardware industries employ a fraction of the former workforces, and produce higher

These funds [from overhead] played a major role in the growth of medical schools and graduate research programs in the post WWII period. They also were essential for the upgrading of undergraduate science and education. Although this aspect of the overhead payments was not always understood by bench scientists, it was well understood by the key congressional sponsors and also by university administrators.

out-of-state students).

Historically, the rise of public education in the U.S.—the victory of the view that every citizen deserves access to education—was driven by economic and political demands of the maturing of the industrial revolution. Farm hands may have been able to do without reading, algebra, and trigonometry, but machinists who had to read blueprints and set up drill presses couldn't do without them. New citizens understood that their ability to secure their economic and political rights required significant education. Much of the enormous technological development and economic growth which occurred over the first 80 years of this century was

quality goods at higher rates and lower costs. Although sectors of the manufacturing community still need a small number of the best trained scientists they can obtain, these represent a small fraction of the total workforce. Thus the corporate sector does not support the general expansion of education access and upgrading of quality along a broad front.

The full utilization of the great potential represented by this technological revolution cannot be achieved with an under-educated population. As the products, for example computer terminals, are broadly diffused through society, their full use and exploitation

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Overhead, Education, and the Technological Revolution (from preceding page)

will require technological literacy throughout the whole population. This means rebuilding the general education base that was transiently achieved for some years in the late sixties and early seventies as result of making science education a national priority.

Achieving this will require direct federal spending for education. The President did not call for supporting his Strategic Defense Initiative program through volunteerism and 1000 points of light. He fought hard to ensure that funds were appropriated. Critics argue that federal support for education goes against a deep tradition of local control. But like research, education can be nationally financed and locally controlled.

At MIT we need to resist the view that producing a narrow base of scientific excellence is adequate for the period to

come. We need to insist not just on the quality of education given to 2% of the eligible population, but on the continuing improvement in the quality of education offered to the entire population. The establishment of the MIT Council on Primary and Secondary Education is a necessary first step. A significant fraction of our students need to take part in the broader diffusion of knowledge and technique.

At the national level we need to treat access to higher education as a right, not a privilege. Although it may not get through the Senate, the reauthorization of the Higher Education Act supports this by proposing that education loans become entitlements, and not discretionary items in the budget as they currently are, which may or may not be funded.

Editorial Committee

Next Issue

The next issue of *The MIT Faculty Newsletter* will appear during IAP. The December/January double issue will include continuing articles on teaching at MIT and a report on the proposed upgrading of classroom facilities.

The question of information access will also be addressed — who knows what and who's allowed access to that information. Other planned pieces include commentary from newly-appointed administrators.

We welcome articles on these or any topic of interest to the MIT community. Please address all submissions to: **MIT Faculty Newsletter, 38-160**; or reach us by E-Mail at **FNL@ZEISS/MIT.EDU**.



Luce Scholars Competition

The Center for International Studies (CIS) would like to inform the faculty of the annual Luce Scholars competition for undergraduates (seniors), graduate students, recent MIT graduates, and junior faculty.

Faculty are urged to nominate recent MIT graduates who have a record of outstanding achievement and who may be unaware of the opportunity.

Since 1974 the Luce Program has placed young scholars from a wide variety of intellectual fields in a broad range of 10-month internships throughout Asia. Past assignments

have included Japan, Hong Kong, Singapore, Indonesia, Taiwan, Korea, and Thailand—in activities and settings as diverse as an architect's office, a newspaper, a forestry project, a family planning center, a hospital, and a local government agency. The Program is aimed specifically at those with no prior Asia experience, making it possible for non-Asian specialists to live and work in an Asian environment.

Elizabeth Leeds, assistant director of CIS, said that MIT is eligible to nominate two applicants this year. Nominees must be American citizens not yet 30

years old by September 1, 1992, who have earned at least a bachelor's degree or reasonably expect to receive their degree by September 1, 1992, and who are in good physical and emotional health. They must not have a professed career interest in Asian affairs or have had significant exposure to east or southeast Asia, such as service in the Peace Corps or extensive study or travel in that area.

Application forms may be picked up at the CIS, E38-651. For additional information, contact Elizabeth Leeds at X3-9861 or Dana Lang at X8-7610.

From The Faculty Chair

Indirect Costs, Academic Calendar, GIRs, and Misconduct

J. Kim Vandiver

What the four subjects in the title have in common is that this year they are or soon will be objects of faculty committee deliberations. I will briefly describe each of them in this article.

Overhead!!

Who needs it? What does it pay for? Why is it so high? These are commonly heard questions at private universities across the nation. Though I have no intention of attempting to answer them here, it has become clear that we faculty need to be better informed about indirect costs so that we can participate in the effort to contain costs and to establish priorities for those things we need in the conduct of our research.

the activities supported by indirect costs), and (iv) recommendations for improvements in the graduate education and research enterprise at MIT with emphasis on (a) improving the cost-effectiveness of areas and services funded with indirect cost dollars, (b) methods for setting Institute priorities, and (c) specific areas of importance to the research community supported with indirect cost dollars.

The Committee will be expected to engage in discussions that will establish the priorities of faculty with respect to the activities supported with indirect cost dollars. The Committee will also solicit faculty input in identifying areas

Institute Calendar and its implications for the academic program.

The president, in consultation with the deans, the provost, the associate provost for Educational Programs and Policy, and the chair of the faculty, determined that the calendar issues were reasonably well-defined, but that the broader issues involving the scope and content of the GIRs would require a longer time frame and multiple opportunities for community input. The decision was made to proceed with the appointment of an Ad Hoc Presidential Committee on the Academic Calendar. The Committee has been appointed with Professor Robert Silbey, head of the Department of Chemistry, as the chair. The other committee members include:

Professor Larry Bacow, Urban Studies & Planning; Professor Robert Brown, Head of the Department of Chemical Engineering; Professor Elizabeth Garrels, Foreign Languages and Literatures; Professor James Harris, Linguistics and Philosophy; Professor Linn Hobbs, Chair of the IAP Policy Committee; Professor Arthur Smith, Dean for Student Affairs; Professor Karl Ulrich, Sloan School of Management; Dr. David Wiley, Registrar; Mr. Stephen Immerman, Office of the Senior Vice President and Staff to the Committee. Two undergraduate, and two graduate students will be appointed to the Committee in the near future.

The Committee on the Undergraduate Program (CUP) will be given a parallel task of developing the charge to a committee on the GIRs. The issues are at present not well defined. There is no understanding of the extent of the desire for change, nor is there a sense of priority as to what most urgently needs attention.

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...it has become clear that we faculty need to be better informed about indirect costs so that we can participate in the effort to contain costs and to establish priorities for those things we need in the conduct of our research. The provost and I are in the process of appointing an Ad Hoc Faculty-Administration Committee on Indirect Costs and Graduate Student Tuition.

The provost and I are in the process of appointing an Ad Hoc Faculty-Administration Committee on Indirect Costs and Graduate Student Tuition. Among other things, the charge will ask the Committee to prepare a report containing the following: (i) a summary of what constitutes the indirect costs of research at MIT, (ii) the current faculty view on the use of the fringe benefit pool to support graduate student tuition, (iii) Institute views on indirect costs (including summaries of the quality of

that require improved research facilities and areas where more cost-effective measures can be undertaken.

The Academic Calendar and the General Institute Requirements

Last spring, the faculty passed a motion adding biology to the list of subjects to be taken by all undergraduates. In effect, a rider was attached to that motion which mandated that an ad hoc committee be appointed by the president to review the scope and balance of the General Institute Requirements (GIRs) as well as the

Indirect Costs, Academic Calendar, GIRs, and Misconduct (Vandiver, from preceding page)

The CUP will be encouraged to solicit input from the faculty and undergraduate student body during this preliminary phase. Once the issues are more clearly defined, the president can proceed to appoint a committee.

Misconduct

Misconduct takes many forms, and the Institute is making progress toward addressing several of them. Current initiatives include the recent community-wide efforts to stop sexual harassment and the work of the special Committee on Academic Responsibility, chaired by Professor Sheila Widnall. Professor Widnall's committee is focused on the specific issues of academic misconduct by faculty and research staff.

Another area which requires the attention of faculty is student misconduct. The Committee on Discipline (COD), chaired by Professor Nelson Kiang, has written a letter to all students calling attention to the values, standards, and expectations of the MIT faculty. The letter outlines the possible sanctions that may be imposed on students who violate these standards, as well as the external consequences of having disciplinary actions appear on one's permanent record. We as faculty should also be well-informed on these issues and take responsibility for making clear our expectations to students regarding academic and personal conduct. I encourage you to read the letter from the COD and Professor Kiang, which appears elsewhere on this page. There will be an opportunity to discuss the letter and related issues at a future faculty meeting.

In closing, I urge you to attend the faculty meeting on November 20th. The tentative agenda is shown on Page 12 of this issue. ♣

Open Letter to Students from the Committee on Discipline

November 5, 1991

Recently many MIT students have been disciplined by the Committee on Discipline (COD) for academic misconduct. In just one subject during 1990, 78 undergraduates were charged with unauthorized collaboration. Each of these students was given a hearing by the COD, after which some were suspended from the Institute, most were placed on probation, and a few were found innocent. Since then, students have been brought before the COD accused of offenses such as plagiarism, cheating during examinations, changing test scores and unauthorized collaboration on homework. In each of these cases, the boundaries for acceptable student behavior had to be determined by the COD which has broad representation from faculty, students, and the administration.

In listening to testimony over the recent past, the COD has been disturbed to find an increasing perception on the part of students that cheating and plagiarism have become rampant on campus, so much so that an honest student is considered to be handicapped in developing an accurately portrayed academic record. The present COD is determined through its decisions to reaffirm the ideals of personal honesty and intellectual integrity without which the entire basis for trust in social interactions is compromised. To this end, both faculty and students should together examine and articulate the values presumed to be fundamental at MIT. An essential requirement is that students not present as their own work the product of efforts by others. To avoid difficulties caused by misunderstanding the range of collaboration permissible, every student should understand the instructor's expectations of academic conduct at the beginning of each term. If students feel at a disadvantage because of widespread violation of course policy, they should discuss their concerns with the instructors at once. Otherwise the situation may deteriorate to the point where it becomes impossible to assess academic accomplishments fairly.

Students should realize the extent to which they can put their professional careers at risk by their actions. Possible sanctions include reprimands, probation, suspension, expulsion or even withdrawal of degrees already awarded. Sanctions are often noted on transcripts required for applications to schools or prospective employers. Graduate or professional schools and government agencies pay particular attention to disciplinary records. In addition, some funding arrangements can be jeopardized.

We suggest that these matters be actively discussed so that there will be common agreement within this community as to what kinds of actions harm the fabric of any institution dedicated to the pursuit and transmission of knowledge. The experience of the COD is that almost all misconduct occurs when individuals allow thoughts of personal advantage to override consideration of others. Such behavior often emerges in moments of great stress or sudden temptation. Learning to deal with such situations without compromising ethical standards should be an integral part of an MIT education. In the last analysis, MIT should serve, not only to educate the reasoning mind, but also to develop the inner character that gives meaning to a productive life. In this endeavor, the COD plays a limited but well-defined role.

Responses should be addressed to Committee on Discipline Chair Professor Nelson Y-S Kiang, at 573-3745.

Who Gets The Credit?

Ernst G. Frankel

It is very common practice for thesis supervisors to place their names after and often before those of their students who actually carried out the research and usually wrote the paper or report. It seems highly inappropriate to appear as authors or co-authors of research which was not performed and often not even instigated or supervised carefully by the supervisor. A name on a paper or report implies not only responsibility but also significant contribution to its contents. In a way this is like stealing part of the credit from the real performer or the research. The argument is often advanced, that as faculty provide some of the initial guidance in the selection and later performance of the research which forms the thesis, they ought to be able to take credit for the results, even though they often performed no more than the function of guide, supervisor, sounding board, or reviewer.

I have a great deal of trouble with this argument. Does an investment advisor, for example, get part of the credit or profit from investments he or she suggested and transacted for an

Can an art teacher co-sign paintings of his students even though he guided the students' work? Can an editor claim credit as co-author of a book he suggested, helped plan, and edited?

investor? Can an art teacher co-sign paintings of his students even though he guided the students' work? Can an editor claim credit as co-author of a book he suggested, helped plan, and edited? I think not.

Faculty are paid to advise and direct students in their research and thesis work. They are paid to help students select research topics, advise them on the methods and approaches to be pursued, and to supervise and review their work. Although they may as a result contribute intellectually, this contribution is in the form of ideas, criticism, and guidance. It is usually not an actual contribution to the research process, unless the faculty member actually performs some of the research himself, and performs the analytical and other work or substantially participates in this process.

Some argue that the student, particularly when employed as a graduate research assistant, actually assists the faculty in the research, works for him, and is under his supervision, and

Problem Sets

L. D. Smullin

If there is one thing that characterizes MIT's academic atmosphere, it is "Problem Sets." The all-nighter is a badge of honor or, alternatively, a sort of inquisition. However, it is not really unique to MIT. I have an old copy of Abraham and Becker "Classical Electricity and Magnetism." At the back of the book is a chapter devoted to problems, it has a subtitle: "But be ye doers of the word, and not hearers only, deceiving yourselves...." James, i, 22.

In the mathematical and physical sciences and the related engineering subjects, we all firmly believe that only by the practice of solving problems can the ideas of the subject be absorbed and internalized.

In the ideal situation, home work clarifies ideas heard in class or read in the textbook. It can lead to the "aha!" of understanding. For some (many?) of our students this is what happens. For others, the random struggle to find the right approach, at 2 am, results in frustration, and very often, in "negative learning" and a conviction that "I can't do this stuff!"

All problem sets are tricky in some sense. To make them interesting, rather than purely rote, we have to demand of the student that he/she think of the "right way." If he does, all is well; but if for some reason the proper gimmick doesn't come to mind, there is trouble. The trouble is cumulative, since future problem sets depend on having understood and solved earlier ones.

We spend a great deal of time in understanding the material of our courses and in organizing it in ways that will (we hope) be understandable to the students. However, we spend very little time teaching students the techniques and strategies of how to solve problems. We have all seen papers with scribbled formulae and equations crossed out and started over. There is no evidence of an organized attack on the problem. I believe that a systematic instruction in problem solving techniques (distinct from particular subject matter) will help many of the students who are now so frustrated.

Several years ago I visited the University of Twente (Holland) where this problem was being attacked by the Center for Educational Research and Development. They arrived at a very mechanistic format that was (is?) being used in the first year courses in mechanics, thermodynamics, and chemistry. I attended a problem solving section and spoke with faculty members and TAs. Overall, I was very impressed..

The basic idea is as follows. (I have additional, more detailed material in my office that you are welcome to examine.)

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Women's Studies At MIT

(Perry, from Page 1)

and physics – because men alone (or for the most part alone) have constructed them? What would those fields look like if women alone had constructed them? What would they look like if men and women together constructed them?"

The impetus for intellectual change, then, as with so much else, began with Affirmative Action. Women looked at areas of study in the academy and asked: "Why am I not represented here?" and

roles and behaviors and ignored areas where women's experience was more likely to be visible. Sociologists, regularly assuming all-male populations, concerned themselves with questions of status, prestige, class mobility, or the workings of bureaucratic institutions. Nowadays many questions involving the so-called private sphere are addressed by a changed sociology: domestic arrangements, informal communication

traditions of women's writing – for some more capacious and inclusive account than the standard male version of literary history – has opened into speculations on the difference that gender makes to reading and writing. By insisting that knowledge be constructed of the experiences and perceptions of women as well as men, Women's Studies has made intellectuals self-conscious about what we think of as knowledge, how it is generated, whom it tells us about, and how it is reproduced.

Much has been learned from this approach. Anthropologists, writing about "man the hunter," assumed that wild animals were the major food source for Paleolithic populations. Questions about women's role in subsistence led to the discovery that among some contemporary "hunting" societies, as much as 80% of the diet consisted of vegetable foods gathered by women. But we stand to learn much more. In medical research, the head of one of the teams of cardio-thoracic surgery at Mass. General recently observed that no research as yet has been completed on women cardiac patients, although there is one small study of a female population in progress. And who is to say whether or not medical research on female bodies might not lead to important discoveries about heart disease?

Women's Studies then, since its earliest days, has always had two foci. On the one hand, there is the elaboration and synthesis of the new research that has grown up in the space cleared by the concept of Women's Studies. We now know a great deal more about the history, experiences, contributions, and perceptions of women in different national and ethnic contexts. This information has directed scholars to new syntheses, such as analyzing the relationship between state policies and

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In history, male-biased research frameworks typically generated examinations of state formations, wars and regimes, rather than an interest in the social history of communities or families. Together with such influential movements as the Annales school in France, Women's Studies has transformed history from being centrally the study of nation states to also include the study of the daily practices of peoples.

then began to think through the research questions necessary to put women back into the picture. In the process of trying to reconstruct a fuller picture, they (we) sometimes noticed how existing conceptions about what constituted knowledge precluded or shut out women – their activities and their cultural sources of power. Issues of affirmative action – of representativeness – thus gave way to questions about epistemology, standards and methods: which questions were being asked? what was deemed worth knowing? how was knowledge pursued? what constituted evidence for knowing?

For example, before the transformation brought about by Women's Studies, sociology focused primarily on public

networks, the impact of the media on individual perceptions, and the like. In history, male-biased research frameworks typically generated examinations of state formations, wars and regimes, rather than an interest in the social history of communities or families. Together with such influential movements as the Annales school in France, Women's Studies has transformed history from being centrally the study of nation states to also include the study of the daily practices of peoples. In literature, too, methods of formal analysis have been called into question by adding gender as an analytic term. The quest in the early '70s for forgotten women writers and for neglected

Women's Studies At MIT

(Perry, from preceding page)

women's reproductive rights, or the gendering of explanatory metaphorical constructs for describing the phenomena of the natural sciences—subjects impossible without an awareness of gender.

And then there is the other focus of work in Women's Studies: the story of the field or discipline itself. Taking gender (or race or class) seriously in the construction of knowledge is not merely a matter of adding or subtracting a few books to a syllabus. One does not simply, as they say, "add women and stir" any more than one can add "masculinity" as a category of analysis to solve the problem of bias. The transformation that comes about by including information from a new population encourages reflexivity about one's own terms and methods. This methodological introspection, in turn, generates debates about such matters as the distinction between sex and gender, the problem of essentialism (a new form of the nature-nurture divide) and theories of difference. Thus, the "new scholarship on women" not only operates as a lens through which to look at existing subjects, but as a discipline in itself, with its own discourse, published in two dozen journals and whole sections of publishers' catalogues. Women's Studies has by now its own classics, its own evolving terms, its stages of development, and its mechanisms of self-criticism – consortia, conferences, caucuses, colloquia.

The best example of Women's Studies' transformative power at MIT is the story of Professor Nancy Hopkins' subject in Reproductive Biology. In 1986, Hopkins became interested in teaching a subject for non-biology majors that offered enough background about the relevant topics in biology (cell biology, population genetics, gene therapy) to be able to explain the technicalities of the new reproductive technologies. Because

it was to be a Women's Studies subject, it was designed to be about the whole organism (as opposed to molecular structures), male and female, and to include the social context of the technical issues. Developed to serve the needs of male **and** female students in a changing society, this course subsequently became a model for the first version of the new Institute-wide requirement in biology.

The Women's Studies Program at MIT

to send course proposals to the Women's Studies curriculum committee, chaired this year by Professor Margery Resnick.

If you want to educate yourself in Women's Studies, to read some of the classic theoretical texts, or to get a sense of the revisionary work in a particular discipline, visit the Women's Studies Research Room in the Humanities Library, a first rate special collection created over the past eight years by

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draws on faculty from twelve departments and sections, from the Schools of Engineering, Science, Humanities, Art and Architecture, Urban Studies and Planning, and the Whitehead Institute. Two men teach in the program. All important decisions are made collectively by a committee of the whole. We believe that diversity is our best hedge against the blind spots, projections, and rationalizations that result when knowledge is too narrowly defined by a single sociological/social group. We welcome the participation of all MIT faculty interested in teaching the new scholarship on women and gender. Any faculty who are interested in teaching Women's Studies at MIT are encouraged

Marlene Manoff. If you want to keep abreast of lectures and symposia in Women's Studies in the Boston area, call the Women's Studies program at 253-8844 and ask to be put on the mailing list for our publication, "Women's Studies Around Boston." ♦

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Margaret L.A. MacVicar

(Gray, from Page 1)

I am overwhelmed with the sense of loss: loss for MIT which relied so heavily on her insights and skills; loss for the greater community of teachers and learners with whom she shared so generously her time and energy; loss for each of us who loved her, who took delight in her irrepressible optimism and vitality, who relied so intensely on her friendship.

One could go on to recount her creation—a creation out of the void—of UROP—the Undergraduate Research Opportunities Program. Din Land's seminal idea had been around for more than a decade before Margaret applied her energies to its practical development. This was no pushover. There were powerful, conservative forces in the Institute in 1969 which were informed

influential educational development in this half century at MIT.

Many universities have tried to clone UROP; all who asked had Margaret's generous assistance and advice. That so few have been successful is a measure both of her uniqueness and the difficulty of the task.

And one could describe Margaret's key role in these last five years in rethinking and reshaping the overall undergraduate program at MIT in her capacity as dean for Undergraduate Education and chair of the Committee on Educational Programs. Under her leadership, the Institute reviewed, reconsidered, and restated the roles of the humanities and social sciences, the objectives of the grading system, and the science requirements. It has been said that the task of getting a faculty to change its collective mind is like the task of moving a graveyard. Once again Margaret made it happen—made it happen cheerfully and enthusiastically, not grudgingly. Strategists of academic politics should take note.

* * *

Henry Adams said, "A teacher affects eternity; no one can tell where his influence stops." Margaret was a teacher of students, of colleagues, and of fellow learners to be sure. But she was, as well, a teacher of institutions—a teacher of the evolving, growing, learning institutions she respected and loved. While none of us knows where her influence will reach, each of us can witness its scope and power.

We come together today as members of Margaret's extended family, as colleagues and friends, to celebrate her extraordinary life, to mourn her passing, and to share our grief, our shock, our anger, and our loss.

Neither we, nor the Institute, nor the greater academic community will soon see her peer.♦

Those of us who worked with her, an untenured assistant professor, in those early years know how lonely, how difficult, how risky the enterprise was. We also know that it was her organizational genius, her indomitable will to succeed, and her wise judgements about this academic culture and its core values that made UROP not just a success, but the most significant element of this MIT experience for many MIT students, and the most important and influential educational development in this half century at MIT.

None of these feelings will soon pass. None of us will soon be whole again.

* * *

I said there was much to celebrate in Margaret's life. Where does one begin?

One could begin with her undergraduate days here. None who had contact with Scotty in that year in which she worked so hard as president of the Association of Women Students to shape the environment in the first residence hall for women at MIT will forget her persistent, insistent demand that the Institute get it right. It was only the beginning of more than twenty-five years of steady effort to make MIT a better place for women—and for men as well. Throughout these years it was evident that Margaret cared deeply about her associates and had the courage to speak out to relieve injustices or incivilities.

by the opinion that UROP could not possibly succeed—indeed that UROP did not deserve to succeed. Margaret overcame those forces which put the nascent UROP at peril, even as she overcame, through the same qualities of mind, of energy, of spirit, those related forces which seemed to put her career at peril.

Those of us who worked with her, an untenured assistant professor, in those early years know how lonely, how difficult, how risky the enterprise was. We also know that it was her organizational genius, her indomitable will to succeed, and her wise judgements about this academic culture and its core values that made UROP not just a success, but the most significant element of this MIT experience for many MIT students, and the most important and

Parking at MIT

Fall 1991 Update

Last fall, the Planning Office prepared a summary article on Parking facilities and policies at MIT. This year, although the basic structure and philosophy behind the administration of these resources has not changed, there have been some operational and physical changes which affect faculty and staff.

During the past several years, the population housed in buildings on the East end of MIT's campus has grown larger than what can comfortably be accommodated by the Sloan, Amherst and Hayward parking facilities. Compounding this problem, the renovation of Building E56 forced a reduction in the number of spaces

Inquiries about parking policies and resources can be sent to the Parking Committee in care of the Planning Office, 12-156, extension 3-5831.

available in the Sloan lot. Rather than reduce the allocation of permits to East Campus employees below last year's level, the Institute Committee on Parking and Transportation made the decision to shift permits into facilities on the North and West sides of campus. Therefore, many departments housed toward the middle of campus received allocations with fewer or no permits in these East Campus lots and an increased number in northern and western lots.

This year, because of the construction of the biology building, the renovation of building E56, and planned maintenance work in several parking facilities, a fluctuation in the number of spaces available to permit holders was forecast. In order to ease this situation,

the East Annex was moved from the space adjacent to the Biology Building construction to a leased lot on the corner of Ames and Main Street. The number of East permits allocated to departments was set at a level consistent with the total capacity of the East Garage and East Annex lot. As a result of this change, the East Garage reaches its capacity earlier in the morning and people with East permits arriving later in the day find available spaces in the East Annex lot.

Effective with this academic year, the Parking Committee approved the following overnight parking policy:

Individuals with valid MIT parking permits who need to be out of town on Institute business for an extended period of time (up to one week) may leave their automobiles in their assigned parking facility. Before leaving the Institute, individuals are requested to notify Campus Police either by sending a completed Extended Parking Notification form [available from the Department Parking Coordinator] to the Institute Parking Manager, or by sending electronic mail containing the required information to **parking @ mitvma.mit.edu**. Individuals are also asked to notify their department parking coordinator. MIT assumes no responsibility for the safety of any automobile or its contents while parked on Institute property.

This policy requires that users of this overnight parking privilege designate an emergency contact person prior to leaving vehicles. During the winter months, vehicles should not be left on the roofs of garages or in open lots.

Inquiries about parking policies and resources can be sent to the Parking Committee in care of the Planning Office, 12-156, extension 3-5831.

Prepared by the MIT Planning Office. ♦

Who Gets The Credit? (Frankel, from Page 7)

therefore the results are the bona fide research results of the faculty member.

This argument assumes that the student only performs as an assistant to the faculty member, a situation rarely experienced, and certainly not in cases where the student submits research as the pivotal graduate research consideration, for example, as a doctoral dissertation. In fact, the supervising faculty certifies that the research and analysis represented by the thesis is the sole and original work of the candidate, yet soon thereafter often turns around and claims co-authorship and credit. While not perjurious in the legal sense, this certainly is inconsistent.

In addition to attaching their name as author to reports on research supervised by them yet performed by graduate students or researchers, faculty quite often use research results to write their own papers without credit to the actual researchers.

Other lapses of intellectual honesty, such as outright plagiarism, have been on the rise as "publish or perish" continues to be applied as the principal criteria in tenure and promotion decisions.

Some fill their resume largely with papers authored jointly with graduate students and based largely on their thesis. This certainly presents less than a fair record of a faculty member's contribution.

While research is often performed jointly and all members of such a research team should participate fairly in the credit for results, I believe it to be important for faculty to honestly record their contribution to research papers or other publications for which they claim some or all the credit.

Even if academic rules are lax on this issue, intellectual honesty demands no less. ♦

Special Notice from the Corporation Screening Committee

The MIT Screening Committee urges you to participate in identifying outstanding recent MIT graduates to serve on the Corporation, the governing body of MIT. The Corporation Screening

students, and alumni/ae from the last two graduating classes. This year's nominees will come from the classes of 1990, 1991, and 1992. The Screening Committee is responsible for selecting

Once elected, recent alumni/ae carry a full vote and participate equally with other members of the Corporation in the governance of the Institute. At any given time, five recent alumni/ae serve in this category, with one position turning over each year.

Those eligible for nomination and eligible to vote in this special election include seniors, final-year graduate students, and alumni/ae from the last two graduating classes. This year's nominees will come from the classes of 1990, 1991, and 1992....Once elected, recent alumni/ae carry a full vote and participate equally with other members of the Corporation in the governance of the Institute.

Committee, composed of four members of the Corporation who are themselves recent graduates and one additional Corporation member, each year solicits nominations from the MIT community – students, faculty, and Institute administrators.

Those eligible for nomination and eligible to vote in this special election include seniors, final-year graduate

those names that will appear on the ballot which is sent out by the Alumni/ae Office in the early spring to the classes eligible to vote, as indicated above. The name of the winner of this special election is then sent to the Corporation Membership Committee for inclusion on the slate of nominees for term membership voted on by the Corporation at its final meeting of the academic year.

Members of the faculty have received a letter describing the election process for recent alumni/ae and an enclosed nomination form. In addition, an open meeting will be held on Wednesday, November 13, 1991, from 6:00 PM to 8:30 PM in Room 491 of the Student Center. This meeting will provide an opportunity for information discussions on the functions of the MIT trustee body and eligibility requirements for nomination to the Corporation in this category of recent alumni/ae. All students and faculty are cordially invited to attend. (The notice to students includes the added incentive of pizza, which faculty are welcome to share!)

If you would like more information or need additional forms, please contact Kathleen Cragin, Association of Alumni/ae, X3-8212, Room 12-090. ♦

Faculty Meeting November 20, 1991 Tentative Agenda

Resolution on the Death of Professor MacVicar

Vote on the Motion to Abolish the End-of-May Meeting to Vote Degrees
— Professor Vandiver

Report from the Equal Opportunity Committee on Current Programs and Initiatives
— Professor Wrighton and Professor Feshbach

Report from MIT's Council on Primary and Secondary Education
— Professor Latanision

Who's In Charge Here?**Dollars To Donuts****Newsletter Staff**

There used to be an MIT Food Service "Coffee Cart" at the intersection of Buildings 4 and 12. Mainly frequented by students and staff, it offered hot and cold beverages, muffins, bagels, sandwiches, and the like. Prices were reasonable and camaraderie was high.

In its place is now the 4-115 "Dunkin' Donuts" room. Prices are outrageously high and the cramped quarters permit little socializing.

Aside from the question of the wisdom of affiliating MIT with Dunkin' Donuts – there is now a proliferation of Dunkin' Donuts products and advertising paraphernalia throughout the Institute – there remains the issue of the pricing structure of the items sold.

Coffee now costs more than it did when there was no commercial attachment, as do the baked goods. Indeed, a Dunkin' Donuts muffin costs \$.20 more at MIT than at the Dunkin' Donuts in Central Square. Other items are priced even more out of line: a candy bar ice cream is priced at \$1.25 when your local Li'l Peach (hardly America's discount food store) only charges \$.89 and one can purchase 6 for \$3.00 at the supermarket; Dove Bar ice cream pops

are \$2.50 a piece (\$2.50!); a 1 3/4 ounce (tiny) bag of potato chips is \$.95 [to quote a colleague: "That's a great deal

The 4-115 coffee room has been offering "Enviromugs" for sale. Pictured with several endangered species of animals, the implication is that for \$1.95 you are doing something positive to help save the environment. Unfortunately, the exact opposite is true. Composed of some sort of polyethylene/polystyrene plastic, the mugs are likely to biodegrade several millennia after the last cockroach.

—for the potato chip company."]; even a lowly apple costs \$.65 (a bag of 10 for \$2.00 is not an uncommon supermarket price).

These prices are constant throughout the Institute, but perhaps most galling in this locale, frequented by effectively a captive audience. So one question is, why are the prices so high and who is

making the profit? The losers clearly are the staff and students. Is MIT reaping the economic benefit or is ARA Food Service, the Institute's food contractor? Further, shouldn't prices be at least competitive with, if not lower than those in the outside world?

Which returns us to the question of why does MIT have such a strong and, most offensively, *obvious* affiliation with Dunkin' Donuts. The benefit for Dunkin' Donuts is apparent; income and free advertising at an institute with the prestige of MIT. But what does MIT get out of the deal?

Which leads to the final question: Who's in charge here?

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Who's In Charge Here? is reserved for short pieces reflecting troublesome rules, regulations, general inconsistencies, and random anomalies that can seem to pervade the Institute. We encourage submissions on any and all topics, with the goal of encouraging some changes.

Please send all commentary to: ***The MIT Faculty Newsletter, 38-160;*** or via E-Mail at **FNL@ZEISS.MIT.EDU.** ♦

Authors

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Letters

Dear Former Colleagues:

I have been teaching at Northrup University in Inglewood, CA under the approach to 25R at LAX. Northrup U. was founded as a kind of aeronautical trade school by the late John Knudsen Northrup, sometime around the end of World War II. Originally it was a nut-and-bolts (shears and riveting hammer?) school dedicated to the problems of metal airplanes. It expanded into an A&E (aircraft and engines) "Institute," which prepared students for FAA certificates, and a separate University about 20 years ago. Last spring the University starved to death trying to support itself on student tuition.

During my stay, from January 1986 to last spring, the University's student body was about 1/3 "white" Americans, 1/3 "orientals" (Chinese, Taiwanese, and Vietnamese), and 1/3 privileged class "Arabs." Most of these people didn't have the academic ability to attend schools like Caltech or Stanford. It was a challenge to recast my MIT lectures on aircraft aerodynamics and flight vehicle dynamics into a form appropriate to such a student body. I had hoped to find a student note-taker to play "Tietjens" to my "Prandtl" role, but none was forthcoming. I have a complete set of video tapes of my flight dynamics lectures, though. Now I think textbooks on traditional engineering disciplines should be put in cartoon book format for self-teaching and semi-literate clientele, e.g., Chinese and Japanese.

The best thing about Northrup was airliners coming over the school at five minute intervals on final approach to LAX to remind us all of "reality."

I am happy to see faculty concern about what needs to be taught and how.

Best wishes for better teaching,

E. Eugene Larabee

Professor Emeritus, Aeronautics and
Astronautics

To The Faculty Newsletter:

The September 1991 issue of *The MIT Faculty Newsletter* announced the creation of a Faculty Lunchroom where faculty (and Knight Fellows) can converse with one another and practice the art of collegiality. In addition, they can have a sandwich, hot/cold drink, and cookies for only \$2 per person. As a non-faculty staff member, I feel this discriminates against all non-faculty members of the MIT community.

To my knowledge, no other "group" has an exclusive lunchroom — and certainly no other "group" has a facility available that serves a complete lunch for only \$2. Have any of these deans tried Walker, Lobdell, or the Dunkin' Donuts (DD) 4-115 coffee room? They certainly will not come close to purchasing a complete lunch for two dollars. For \$2.50 (more than the cost of a complete lunch at the Faculty Lunchroom) they could buy a Dove ice cream bar at the DD 4-115 coffee room — a very nutritious lunch indeed! My question, why are non-faculty members paying more, and getting less?

MIT claims to be a non-profit, non-discriminating university. Any non-faculty member of the MIT community who reads of this new faculty lunchroom and what it offers its exclusive clientele, would certainly think otherwise.

**A Concerned Non-Faculty Member
of the MIT Community**



The *Faculty Newsletter* welcomes letters or brief comments by any member of the MIT Community and their associates.

Please address all mail to: **MIT Faculty Newsletter, 38-160;** or send us E-Mail at **FNL@ZEISS.MIT.EDU.**

Problem Sets

(Smullin, from Page 7)

Pads of "problem set" paper are printed with forms and spaces devoted to:

- Write the knowns;
- Write the unknowns;
- Units and dimensions;
- Estimate the answer;
- Set boundary and initial conditions;
- Divide problem into sub problems;
- Make assumptions if necessary;

and so on.

They claim two advantages for this process. The detailed, step by step procedure takes a lot of the magic out of problem solving. For the uninitiated, this is a fail safe way of proceeding. As students get more skilled, much of this is skipped. For the instructor, the organized form of the paper helps to quickly identify at what point the student went wrong.

Whether or not we at MIT adopt this system as a package, is not very important to me. What is important is to recognize the separate pedagogical problems of teaching the student how to solve "story problems" of any kind; and then, the other problem of teaching the details of circuit theory, mechanics, or whatever. At MIT we work hard at doing a good job on the latter; but the first part is largely ignored. This may derive from the fact that we have a lot of students — maybe more than half — who are naturally good at the techniques of problem solving, and we tend to think of the others as "dumb" or at least "not as smart." Most of us got our faculty positions because we were good at problem solving, and we find it hard to understand why someone else can't do the same.

MIT is an expensive place, and we owe our students whatever it takes to bring them up to speed. A serious effort to help with problem solving techniques in the first year or so, should pay big dividends. ♦

M.I.T. Numbers

On-Campus Research Expenditures By Major Sponsor (\$000)

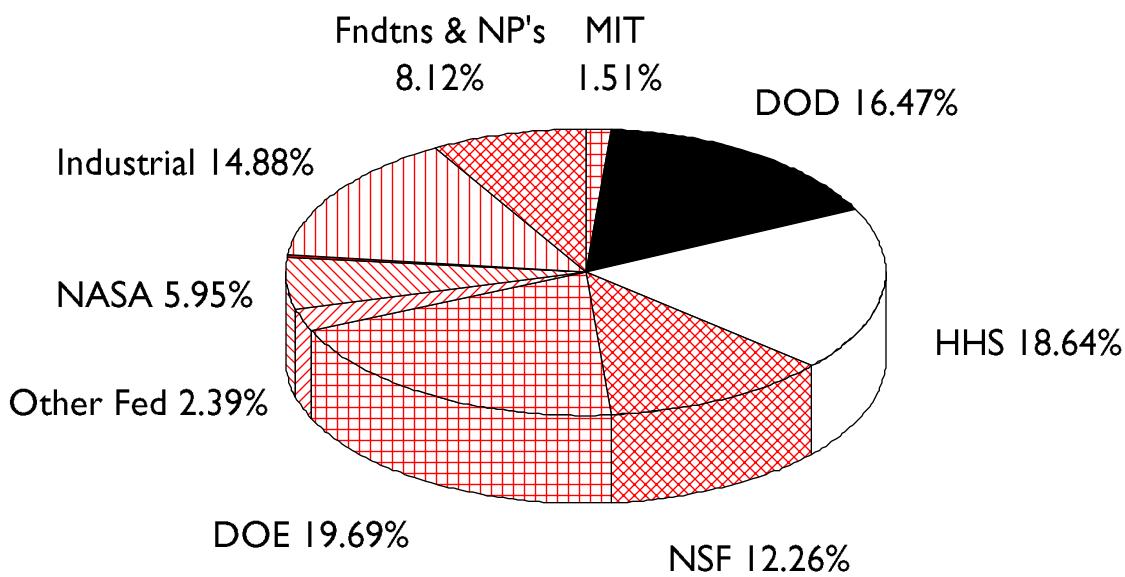
	FY 1970	FY 1975	FY 1980	FY 1985	FY 1990
Department of Defense	16,010.3	12,460.4	19,182.8	38,576.0	51,158.3
Health & Human Services	9,005.7	15,363.9	24,566.8	40,252.1	57,914.7
National Science Foundation	6,484.7	19,642.8	25,054.4	33,627.6	38,093.2
Department of Energy*	8,673.9	11,351.7	50,004.4	56,364.0	61,097.8
Other Federal	2,818.5	5,764.9	10,307.8	8,862.8	7,429.9
NASA	6,510.7	6,940.1	9,293.9	12,315.3	18,469.3
TOTAL Federal:	49,503.8	71,523.8	138,410.1	189,997.8	234,163.1
State, Local, & Foreign	399.7	757.0	609.2	398.1	369.1
Industrial	1,993.5	5,319.3	13,058.1	33,486.7	46,223.2
Foundations & Non-Profit	6,171.9	7,473.3	9,653.6	15,281.9	25,220.3
MIT Internal & Lincoln Labs	56.2	806.4	1,390.1	2,560.0	4,684.3
TOTAL:	58,125.1	85,879.8	163,121.1	241,724.5	310,660.1

Note: Due to rounding, totals may differ from actual figures by ± 100 .

*1975 - Atomic Energy Commission.



On-Campus Research Expenditures By Major Sponsor - FY1990



Source: MIT Factbook, Prepared by the Planning Office, June 1990.

