

# Education reform supplement inside

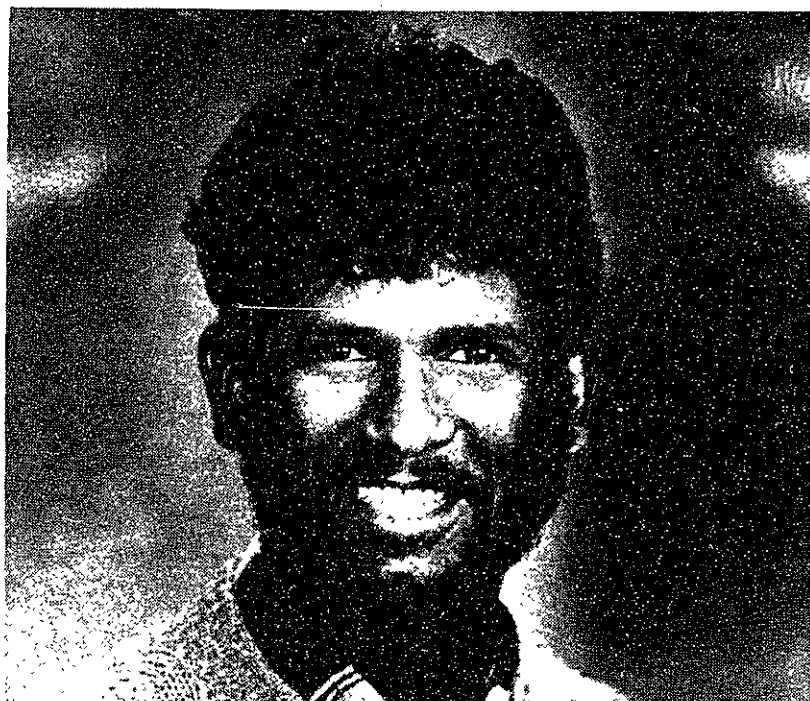
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# TheTech

MIT  
Cambridge  
Massachusetts

Tuesday, April 29, 1986



Ram Manikkalingam '85, who was arrested by Sri Lankan security officials on April 19.

## Sri Lankan grad jailed Manikkalingam incarcerated by security forces

By David P. Hamilton

Ramanujam Manikkalingam '85, an MIT physics graduate, was arrested by government security forces in his native country of Sri Lanka on April 19, according to *The Daily News*, an English-language Sri Lankan newspaper [see "Graduate reported missing," page 5].

Unconfirmed rumors report that Manikkalingam was arrested for a curfew violation.

Manikkalingam was arrested under the provisions of the Prevention of Terrorism Act, *The Daily News* reported. The Act permits the Sri Lankan government to hold prisoners up to 18 months without trial and incom-

municado, according to the *Amnesty International Report 1985*, produced by the London-based human rights organization Amnesty International.

The Act also allows the government to try detainees under special procedures curtailing normal legal safeguards, the report stated.

Manikkalingam is a Tamil, a minority sect in Sri Lanka. Some Tamil groups advocate a separate state for their sect, the Amnesty report stated.

Manikkalingam was first reported missing on April 1, according to an April 11 report by *The Daily News*. He was last seen outside his Colombo home by a servant on March 27. At the time, the Sri Lankan police and the National Security Ministry denied taking Manikkalingam into custody.

Manikkalingam is the son of a former Sri Lankan ambassador

to Indonesia.

### Human rights in Sri Lanka

Sri Lanka is currently undergoing a civil uprising among militant Tamil separatists, according to *The New York Times*. A government-decreed state of emergency has been in effect for several years with the stated purpose of combatting violence by Tamil extremists, according to the *Amnesty International Report 1985*.

In the past three years there have been increasing reports of unarmed Tamil civilians shot dead in reprisal for attacks by extremist groups on security forces personnel, the Amnesty report stated.

Amnesty International has also been concerned about the "detention of Tamils, members of left-wing opposition parties, and students under legislation permitting long-term detention without charge or trial," the report

(Please turn to page 3)

## Senate approves money for student financial aid

By Ben Z. Stanger

A \$300 million increase in higher education funding approved by the Senate last Wednesday "neutralized" the effect that the Gramm-Rudman-Hollings deficit reduction law would have had on universities, according to Director of Student Financial Aid Leonard V. Gallagher '54.

Walter L. Milne, assistant to the Chairman of the MIT Corporation, said the 60-38 vote made universities optimistic that "Congress will not in any way adopt [President Reagan's education] proposals," which Milne said call for drastic cuts in education.

The Senate also voted against an amendment which would have eliminated 43 domestic programs from the 1987 budget in the same session. The 83-14 vote was viewed by the amendment's writers as an indicator of incomplete Senate support for Reagan's proposed removal of popular programs. The administration refused to negotiate with Senate Republicans before the vote, insisting the cuts be made.

The Gramm-Rudman legislation, which calls for a deficit ceiling of \$144 billion in fiscal year 1987, requires Congress and the Reagan administration to devise a budget plan by Oct. 1. The administration, which wants a tax freeze and greater military spending, proposed deep cuts in domestic programs including education.

The deficit-reducing law will cause a four percent reduction in student aid programs at MIT in 1986-87, Gallagher said. MIT feared "severe cuts" in financial aid of up to 35 percent in 1987-88 if education cuts followed the expected path. Last week's vote would keep MIT aid levels about the same for the next two years, he said.

MIT belongs to several lobbying groups in Washington, including the Consortium on Financing Higher Education (COFHE), the Association of Student Financial Aid Administrators (ASFAA) and the Association of American Universities

(AAU), "all of whom have been crawling over the Senate [on the education aid vote]," Gallagher said.

MIT President Paul E. Gray '54 met with the AAU in Washington from April 20-22, where he thanked congressional student aid supporters, Milne said. Among those he saw were Congressman Silvio O. Conte (R-MA), ranking minority member of the House Appropriations Committee, and Senator John Kerry (D-MA), a member of the Committee on Human and Labor Resources, which is responsible for determining cutoffs for grant qualification.

Gray goes to Washington regularly, Milne said, where his major efforts are guided towards student aid and scientific funding.

The Senate vote affects Pell Grants, Supplemental Education Opportunity Grants (SEOG), National Direct Student Loans (NDSL) and the College Work Study program, which together account for a total of about \$4.2 million of MIT's aid money, Gallagher said. The Guaranteed Student Loan (GSL) program, which is voted on separately from these programs, "has also fared pretty well," he added.

"This is good news," Gallagher said. "I see other ways that the budget can be cut than these particular programs."

The final budget for 1987 will have a lot to do with the Supreme Court's decision about Gramm-Rudman's constitutionality to be determined in June, according to Milne. Ernest F. Hollings (D-SC) introduced the educational support legislation along with Mark Andrews (R-ND). The measure called for increases in tax revenues to equal the increase in educational funding.

## Gray talks to GSC members

By Earl C. Yen

President Paul E. Gray '54 told the Graduate Student Council (GSC) last Thursday that the administration will rank its four candidates for the site of the new graduate dormitory by the end of August.

MIT may experience some dif-

ficulty in obtaining approval for the new dormitory from the city of Cambridge, Gray predicted, but he expects MIT to eventually receive approval for construction.

"There's a climate of suspicion in Cambridge," Gray said. "The city looks for an evil motive in anything Harvard and MIT do."

The architect and builder will take one year to formulate the plans for the dormitory, Gray said. Senior Vice President William R. Dickson '56 said in early April that MIT will complete construction by 1989.

MIT did not include the graduate dormitory in its upcoming capital funding campaign because in the past MIT has been unable to raise funds for housing from its capital campaigns, Gray said.

In the mid-1970's MIT tried to include the construction of 500 Memorial Drive in its capital funding drive, Gray said. But the Institute was unable to use money from the capital campaign because most donors designated their money for a restricted purpose, such as supporting a research laboratory or a professorship. MIT was forced to dip into general operating expenses to cover construction costs.

"Just because you put housing on the campaign list doesn't mean donors will contribute to it," Gray said.

Gray estimated the cost of the new graduate house at \$20-24 million. 500 Memorial Drive cost between \$10-12 million.

### Gray would support limit on student enrollment

Gray also answered GSC members' questions about the graduate school's size, the lack of administrative attention to graduate students, and the graduate tuition policy.

Gray said he would consider implementing a quota system to curb undesirable growth in graduate school enrollments. Over the past 20 years, the graduate schools have seen a gradual but

(Please turn to page 10)

## BU students arrested during shanty protest

By Andrew L. Fish

Fourth in a series on anti-apartheid protests at other schools

Last Thursday 11 Boston University students were arrested for preventing the removal of shanties from the front of Boston University's student union building. The shanties had been erected approximately half an hour earlier by members of the Southern African Task Force (SATF) to protest the university's investments in South Africa.

The protesters were arrested both for preventing university workers from removing the structures and for blocking police cars from leaving the scene. They were all charged with disorderly conduct and released Thursday on \$15 bail. The university administration said it did not arrest the students for protesting, but rather for interfering with the removal, according to Greg Lang, a staffer for the *BU Free Press*.

The students were arraigned in court Friday. They were informed that any more disciplinary action could lead to \$1000 fines and up to six months in jail, Lang said. The students then had their court cases continued until June.

The SATF, a group claiming to have approximately 60 members, has been working to achieve divestment of the university's \$20 million invested corporations which do business with South Africa. The group claims to have been successful in raising awareness on the BU campus, and says that the movement itself is as important as divestment, according to Lang.

On March 26 SATF member Yosef Abramowitz started a hunger strike to raise awareness about the apartheid issue. By April 3 he had been joined by 19 other students. Several days later he halted the hunger strike because "he raised enough awareness," Lang said.

The hunger strike was a "big success" at getting people aware of the situation, according to Jane Friedlaender, one of the 20 participants. "Lots of things started happening." When the

(Please turn to page 16)

## Students watch CP videotape of shanty arrests

By Harold A. Stern

The Cambridge district attorney viewed the Campus Police's videotape of the March 14 arrests on Kresge Oval Tuesday in the presence of the two students whose cases were continued for trial and their attorneys.

The district attorney had directed Sgt. Edward McNulty of the Campus Police to show the tape in response to a request by David Kelston, the defense attorney for Lawrence K. Kolodney G.

At the end of the tape, "we

asked them to rewind it and play it again — but he [McNulty] went too far," Kolodney said.

On the tape, according to Arnold Contreras '86, was "a previous [Coalition Against Apartheid] demonstration." The recording was made at the protest outside the home of President Paul E. Gray '54 on March 7, he added.

McNulty then "quickly turned off" the machine, Contreras continued. The defense lawyer requested McNulty to show these portions of the tape, Contreras

said, and McNulty refused.

As long as the portions of the tape are not being used as evidence in the trials, the Campus Police are not required to show it, Kolodney explained.

The assistant district attorney informed Kelston that a scene from the construction of the shanties was also on the tape, Kolodney said.

The judge offered the students a new deal at the hearing, Kolodney said. They would have to agree to a probationary period

(Please turn to page 10)

# inside

Crimson cries for  
mercy at hands of *The  
Tech*. Page 11.

# news roundup

from the associated press wire

## World

### Ankara judge says Libyans plotted to kill American

A prosecutor in Turkey is saying what US officials have suspected all along — that the Libyan embassy in Ankara was involved in an alleged plot to bomb a US officers' club. Two Libyans were arrested near the club earlier this month. Turkish authorities say the pair were carrying six grenades, and those grenades, the authorities charge, were provided by Libyan Embassy personnel. (AP)

### Soviets acknowledge nuclear power-plant accident

The Soviet Union said yesterday afternoon that one of its nuclear power plants in the Ukrainian city of Chernobyl suffered a radiation leak yesterday. The Soviets are administering aid to those who were affected by the radiation. The report came after Swedish officials said some high radiation levels in eastern Sweden were believed to have resulted from radiation carried by winds from the Soviet Union.

The Soviets have built four 1000-megawatt nuclear reactors at the Chernobyl site since 1977. TASS, the Soviet news agency, says the accident is the first in the USSR, although experts in the West believe there was a major accident 28 years ago in the Ural mountains. The accident is believed to have killed hundreds of people and contaminated a wide area. (AP)

### US dollar falls against foreign currencies

The US dollar hit a five-year low against the West German mark and a four-year low against the Swiss franc in European trading yesterday after sinking to a post-World War II low against the Japanese yen in Tokyo.

Foreign exchange dealers say the dollar's slide against all major currencies in Europe was triggered by its fall in Tokyo, where the markets close as Europe's open. The yen's strength stems from Japan's big trade surplus with the West and should put Japan in a strong negotiating position when the Western industrial powers summit opens in Tokyo on May 4. (AP)

### Abu Nidal claims responsibility for killing in Jerusalem

A group headed by Palestinian terrorist Abu Nidal is claiming responsibility for Wednesday's shooting death of a British tourist in Jerusalem. Abu Nidal is the man blamed by the United States for the December massacres at the Rome and Vienna airports. (AP)

## Nation

### Reagan travels to Pacific basin

President Reagan left Hawaii yesterday for Southeast Asia. The President will travel to Bali, Indonesia, with a refueling stop in Guam along the way. When Reagan goes to Indonesia, he will meet with Philippine Vice President Salvador Laurel. The meeting will be Reagan's first face-to-face session with a representative of the Aquino government. (AP)

### US economy shows positive signs

The federal government reported yesterday that non-farm productivity rose a healthy 3.4 percent in the first quarter of 1986. It was the sharpest quarterly gain in two years. Productivity is measured by the output of workers for an hour's day. Its growth is considered an essential tool for holding down inflation. The US Labor Department reports that businesses increased their first-quarter output by four percent, while hourly labor costs went up by only 2.4 percent. (AP)

### Supreme Court rules on mentally retarded patient

The US Supreme Court yesterday let stand lower court rulings in a case involving a 19-year-old mentally retarded man and the state of Massachusetts. The bottom line is that Massachusetts officials must continue providing free residential-school education for the man, who is a victim of Down's Syndrome. The state had argued that the order required them to go too far in accommodating the special needs of handicapped students.

In other action, the Supreme Court rejected a challenge to a Santa Barbara, California ordinance that prohibits sleeping in public places. The court, without comment, refused to hear arguments on behalf of 29 homeless people who have contended that the ordinance violates their freedom to travel and their right to self-protection. (AP)

### Educational reform to motivate students, teachers

American educators are now focusing on improving the atmosphere in schools rather than tightening competency requirements for students or teachers. 200 educators met to mark the third anniversary of the "A Nation at Risk" report and concluded that lack of motivation in students and teachers is the root of the "rising tide of mediocrity" the commission reported in 1983. (*The New York Times*)

### United Methodist bishops denounce nuclear weapons

A panel of bishops of the United Methodist Church approved a pastoral letter condemning any use of nuclear arms, and linking the arms race to rising social injustice and global poverty. The letter will reach the Church's 9.4 million members in the United States. (*The New York Times*)

### Where is middle America?

The Census Bureau reports the demographic center of the United States is now located in west-central Washington County, Missouri. The new center of the US population is about 20 miles west and ten miles south of the population center determined by the 1980 census. That continues the westward trend that's been observed in every census since 1790. (AP)

### Deaver wants name cleared

Reagan's former deputy chief of staff Michael Deaver says he wants a special prosecutor to look into allegations that he has violated conflict-of-interest laws since leaving the White House to become a lobbyist. A few days ago, President Reagan said it would be "ridiculous" to appoint a special prosecutor to investigate Deaver. Attorney General Edwin Meese said he will not get involved in any Justice Department review involving Deaver, since Meese and Deaver have known each other for over 20 years. (AP)

## Local

### Boston plane turns up no terrorists

An Eastern Airlines flight for Washington yesterday morning was recalled to Logan Airport after an agitated woman passenger left the plane just moments before departure time. Eastern flight 139 returned to Logan Airport shortly after takeoff, according to Massport spokeswoman Dee Clarke. An estimated 128 passengers were evacuated and the plane was searched as a precaution. The plane was eventually released and took off again with its passengers nearly two hours after its scheduled time. (AP)

### Task force focuses on border murders

A special New Hampshire-Vermont task force investigating possible links in murders along their borders will focus on four of the deaths. Assistant Attorney General Robert Muh of New Hampshire said there is no concrete evidence that any of the killings are linked, but that no matter how many killers there are, they are still free and may kill again.

Muh said the deaths the group will focus on include those of two women whose bodies were found in woods in the same section of Newport, who disappeared in 1984. They were 27-year-old Ellen Fried of Claremont, whose remains were found in September, and 17-year-old Bernice Courtemanche, whose skeletal remains were found last weekend. (AP)

## Sports

### Rangers win Patrick Division title and advance to Stanley Cup semifinals

The New York Rangers skated past the Washington Capitals to become the first NHL team to advance to the semifinals. The Rangers, who have not captured the Cup since 1940, won three straight games to take the series 4-2. New York will play the winner of the Montreal-Hartford series. The Canadiens and the Whalers are tied 3-3, with the final game tonight in Montreal.

In hockey's other Cinderella story, the Calgary-Edmonton series will be going down to the wire — the two-time Stanley Cup champion Oilers avoided elimination last night, defeating the Flames 5-2 in Calgary. The St. Louis-Toronto series will also be decided in seven games. The Maple Leafs, down 3-2 in the series, remained alive by defeating the Blues 5-3 last night. Winners of the two series will play in the semifinals. (AP)

### Celtics resume series with Hawks tonight

The Boston Celtics and Atlanta Hawks resume their second-round NBA playoff series at the Boston Garden tonight. The Celtics shut down NBA scoring champion Dominique Wilkins Wednesday and won the first game, 103-91. Celtics Coach K. C. Jones pulled the starters from the game early in the fourth quarter with the Celtics holding a 25-point lead. Milwaukee starts action against Philadelphia tonight.

In the West, the Lakers have a one game lead over Dallas, and Houston leads Denver by one. (AP)

### NFL draft to be held today

The 28 teams of the National Football League will meet today to draft the best talent from the ranks of college football. (AP)

## Weather

### Looking for a clear sky

Things are looking better for us in Boston. The stubborn low pressure system to our southwest is finally losing some of its intensity. Its circulation has brought us the cool moist flow from off the ocean which we have been experiencing during the past few days. I expect this to end, finally, with perhaps more sunshine than clouds today.

**Tuesday:** Partly sunny with highs 60-65. Temperatures will be cooler along the coast with an afternoon sea breeze. Winds will be easterly at 10-15 mph.

**Tuesday night:** A few clouds with lows near 50. Winds will be light and variable.

**Wednesday:** After early morning cloudiness, our skies will clear. High temperatures will be 60-65.

**Wednesday night:** Fair with lows near 50.

**Thursday:** Increasing cloudiness with highs near 60.

Forecast by Robert X. Black

Compiled by Anu Vedantham  
Earl C. Yen



# Students, faculty marshal support for prisoner

By David P. Hamilton

Several individuals and groups at MIT have actively sought to publicize the facts surrounding Ramanujam Manikkalingam's disappearance and subsequent arrest.

Three brothers of Alpha Delta Phi (ADP), of which Manikkalingam is a member, have organized an effort to "let the Sri Lankan government know that Americans are concerned about Ram's welfare," according to Robert L. Codell '88, vice president of ADP.

Codell, Kevin T. Parent '87 and John S. Underkoffler '88 organized their campaign shortly after learning about Manikkalingam's disappearance on April 17. Members of the fraternity called congressmen and senators from their home districts, requesting them to send letters and telegrams to the Sri Lankan embassy and other government officials, Underkoffler said.

ADP also asked national alumni to call or write their representatives, Parent said.

The three sent information packets to all MIT fraternities detailing Manikkalingam's disappearance, including instructions on contacting representatives and a sample petition for chapters to circulate, Parent continued.

ADP also contacted several MIT faculty members who had been close to Manikkalingam. Claude R. Canizares and George W. Clark PhD '52, professors of physics, and Alar Toomre '57, professor of mathematics, were among those contacted.

The prime minister of Sri Lanka will be speaking at MIT this summer, Codell said. "We plan to express our concerns to him," he said.

ADP's campaign is merely intended only to express concern over Manikkalingam's well-being, Codell stressed. "We don't want it to be a political issue," he said.

ADP contacted the Red Cross to obtain information about Manikkalingam's condition, but the International Red Cross Headquarters in Geneva reported

no success in attempting to verify the condition of prisoners held by the Sri Lankan government, Codell said.

The group also contacted Amnesty International, Codell said. Miriam Ben Ur, Manikkalingam's girlfriend, filed a complaint with Amnesty, according to Kathryn F. Fischbach G, a graduate student who had worked with Manikkalingam.

Amnesty is not currently acting on Manikkalingam's case, said Ellen Cull of Amnesty International. The International Secretariat has been informed of the situation and is currently monitoring it, she said.

ADP plans to distribute flyers and petitions to all MIT dormitories. Over the next few days, they hope to collect the petitions and send them to the Sri Lankan prime minister, Codell said. Shiva Ayyadurai '86 may deliver the petitions in person, Codell said.

Ayyadurai said he is traveling to Sri Lanka to "make our feelings publicly known." Ayyadurai said he will take the petitions to the US Embassy in Colombo and forward copies to the prime minister. He will also request an appointment with the prime minister, he said.

Fischbach, along with other graduate students who worked with Manikkalingam, has collected nearly 500 petition signatures, she said. Their group has also coordinated the mailing of several hundred independent letters to Sri Lankan officials, she added.

## Faculty, staff reactions

Eugene R. Chamberlain, international students' advisor and associate dean, wrote the American Embassy in Sri Lanka when he learned of Manikkalingam's disappearance.

"We called to let our embassy know that we here at MIT care about what happens to our alumni," he said. The reply affirmed that the embassy was aware of the situation, Chamberlain said.

Canizares, Manikkalingam's research advisor, wrote letters to the Sri Lankan ambassador, the

president and the prime minister on April 21. In addition, he called several US senators and congressmen.

Canizares wanted to "show [the Sri Lankan government] that we are concerned and are aware of what's going on."

Sen. Edward M. Kennedy's office was extremely responsive, Canizares said. A Kennedy aide told Canizares that the senator was making inquiries through the State Department and the White House.

Canizares also contacted a human rights group of the American Association for the Advance-

ment of Science in Washington, DC, which sent queries through the State Department and the US Embassy in Sri Lanka.

The MIT administration will probably also take formal action, Canizares said. He informed President Paul E. Gray '54 and Vice President William R. Dickson '56 last week, and said they were both "quite sympathetic."

Canizares credited the inquiries with pressuring the Sri Lankan government to announce Manikkalingam's arrest.

Clark, a friend of Manikkalingam and Canizares' co-worker in the Center for Space Research,

contacted Amnesty International and the Committee on Human Rights of the National Academy of Sciences, as well as the Sri Lankan embassy, the State Department, and the American Embassy in Colombo.

Furthermore, Clark expressed his concern to the science advisor to the president of Sri Lanka, C. Pnomperua, who is a professor of space science at the University of Maryland.

"The essential thing, when dealing with powerful groups like this who you don't quite trust, is to keep things exposed and open," Clark said.

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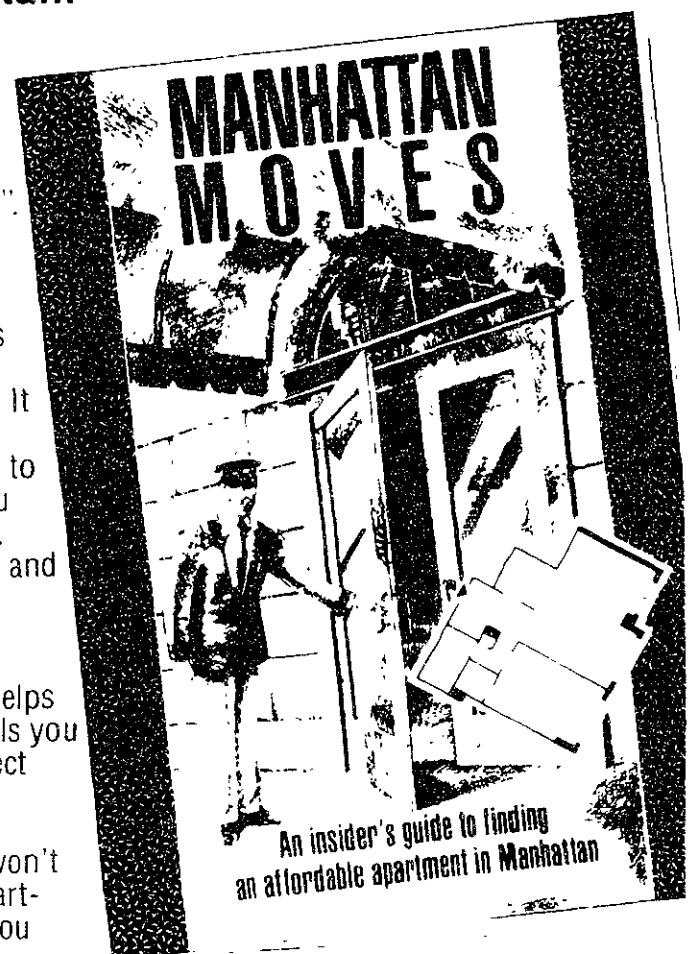
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## MIT alumnus detained under anti-terrorist law

(Continued from page 1)

stated.

According to the Amnesty report, the majority of people arrested under the Act were suspected of knowing about the activities of Tamil extremist groups, although the Act was also used to detain people participating in peaceful opposition activities.

"[Sri Lankan] officials stated that in one week in December [1984], 1000 arrests had been made under the Prevention of Terrorism Act; unofficial reports

put the figure much higher," the report continued.

In addition, the human rights organization has "continued to receive reports of widespread torture of detainees [and] reports of deaths in custody, allegedly as a result of torture or shooting," the report stated.

Amnesty is concerned about the arrests under the Act because it permits important departures from normal legal safeguards which could facilitate torture and other serious human rights abuses, according to the report.

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# opinion

## Editorial

### MIT must rethink Lincoln Lab ties

The interim report of the Lincoln Laboratory Review Committee raises serious concerns about MIT's affiliation with this major military research facility. Lincoln has failed to adhere to some of the recommendations of the 1969 Review Panel on Special Laboratories (the Pounds Panel). The Executive Committee of the MIT Corporation endorsed these recommendations, including:

- increasing the amount of non-military research at Lincoln's facilities, and;
- striving for greater interaction between the labs and the rest of the MIT community.

In the 17 years since the Pounds Panel there has been little net change in the interaction between Lincoln Labs and MIT. The amount of non-military research at Lincoln began to rise after the report, but has since declined from 14 percent around 1972 to four percent today.

Lincoln Labs seems to benefit much more than MIT from their connection. MIT seminars are open to Lincoln staff members, but most Lincoln lectures are classified and unpublicized. Classified research has always been inappropriate in an educational institution. Also, restrictions on research projects prevent foreign-born students from participating.

Few Lincoln staff members teach on campus, according to the report. In fact, commented review committee chairman Louis D. Smullin, they tend to see contributing to MIT as a distraction from their real work.

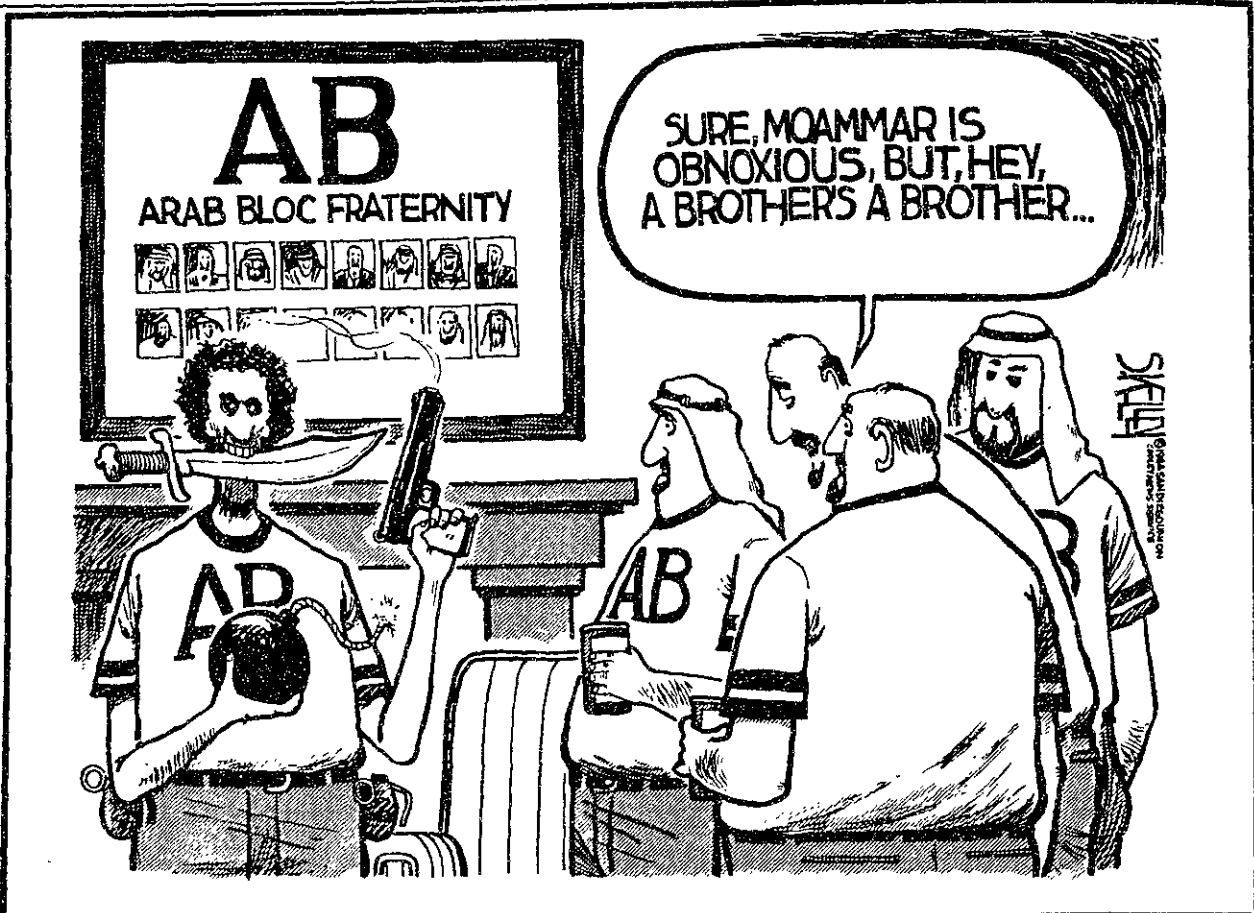
MIT's seems to have little control over the lab. Lincoln is able to effectively ignore the guidelines that this institution sets for it. It is not entirely clear whether Lincoln is in compliance with the prohibition against new obligations in the design and development of weapons systems, and there is currently no way for the MIT community to check this. The review committee found some borderline cases, but declined to make fine distinctions between research and applications.

Lincoln does high-quality research which is considered vital by the Department of Defense. But must this work — which accounts for more than half of all sponsored research here — be one of the most prominent aspects of MIT to the outside world? National defense interests would be equally provided for through an independent Lincoln, but MIT interests are not served by the operation of a weapons laboratory.

Some already have opinions. Provost John M. Deutch '61 told the faculty that he believes "the nation is well served by having a university manage these [military] labs." The community should consider the merits of this statement and ask Deutch to explain the reasons for his position in his forthcoming reply to the Smullin committee's report.

MIT divested the Instrumentation Lab in 1970 because it seemed impossible to integrate the lab into the MIT community. Lincoln Labs was retained, because it was believed that it would be possible to open up the lab to non-military research. So far, this has not happened.

MIT should ask Lincoln Laboratories to change its operating procedures if it wishes to retain its affiliation. The lab must make a concerted effort to increase MIT relations and to solicit non-military jobs. If Lincoln continues to ignore the policies MIT sets for it, the Institute should seriously consider divesting the laboratory.



## feedback

### Divestment is key issue

To the Editor:

When I received an unsolicited "MIT Corporation Ballot" in the mail a few weeks ago, I was surprised. "[This process] is your opportunity to make an input into the governance of the Institute," the literature informed me. Elections are held annually to select a recent graduate to serve on the 75-member governing body that concerns itself with everything from the financial condition of MIT to the curriculum itself. I had not realized that I had any input in running the Corporation that is my school, employer, and landlord.

Six alumni vied for my vote. They all stressed their ability to

fully and accurately represent the viewpoints of recent and soon-to-be graduates. Most candidates had been involved in an impressive variety of extracurricular activities including fraternities, performing arts groups, and educational policy committees. Many mentioned their interest in issues such as housing, Course VI overcrowding, and financial aid cutbacks.

But one issue of critical importance was curiously absent from any of these statements: MIT's investments in South Africa. Did all of these bright young people somehow miss hearing about student interest in divestment? I think not. But as to why they

chose not to discuss it in their official statements, I can only speculate, and I would rather not.

My ballot is still blank. However, it is not due until May 10, so there is still plenty of time for the candidates to demonstrate that they are indeed informed about the concerns of MIT students and able to responsibly represent them on the Corporation. Until then, I remain skeptical that anyone wants my input at all.

Sharon Moran G

(Editor's note: copies of the above letter were sent to the Corporation Screening Committee and the six candidates.)

### GAMIT combats prejudice

To the Editor:

On Feb. 9, Wilson Wong '87, a member of our community, was the victim of harassment. We are angered whenever any member of the MIT community is a victim of harassment, and we join those who have already expressed their condemnation of this act. We are particularly concerned in this case, because the victim was a member of our smaller community: the gay community at MIT. In fact, he was targeted and his property destroyed precisely because he was gay.

There is no doubt in anyone's mind that this incident was motivated by prejudice. Neither is there any dispute that bigotry of any form which may be found on this campus, of which this is merely a display, must not be tolerated.

One of the very important roles of Gays at MIT (GAMIT) is to help the MIT community combat these fears and prejudice, particularly prejudice against gay people. One of the essential parts of this job is to watch closely events on campus and ensure that the rights of gay people are respected, and that our views are fairly represented. We act as a "watchdog," if you will. In this capacity, GAMIT is the voice of gay people watching out for and helping gay people.

This is not to say that when gay people are the victims of harassment or prejudice, only gay people should be concerned. We are grateful for the support of our straight friends who recognize the problems encountered by gay people and who abhor the

hatred that springs from misunderstanding. Neither do we limit our concern to the problems of gay people. However, GAMIT speaks for and represents the gay community at MIT, and their welfare is our primary concern.

It is in this context, that GAMIT has undertaken to be well-informed concerning the details of this particular case. Harassment is a serious offense in any context, and we were particularly concerned that this case should receive fair consideration. After having been in close contact with the Dean's Office and having reviewed the details of this particular case including those which escaped publication, we are convinced that the Dean's Office acted reasonably and in good faith. We respect their judgement and consider that in this instance the disciplinary action imposed was adequate and within reason.

### Gay harassment case was treated seriously

To the Editor:

There have been a number of articles and letters to the editor over the past few weeks concerning an incident at East Campus involving the harassment of a gay student and the subsequent discipline hearing held in the Dean's Office. None of these articles or letters accurately reflect the facts of the actual charges or the resulting disciplinary sanctions imposed.

Privacy considerations prevent me from disclosing the full extent of the disciplinary sanctions. I would like to assure the com-

It is unfortunate that the confidential nature of the situation prevents an accurate portrayal of all the relevant circumstances. It is equally unfortunate that the praiseworthy sentiments of those who expressed their support were based on incomplete information. Although the same act, committed under different circumstances, might well justify a significantly harsher punishment, we concur with the deans' decision.

This incident, however, serves to highlight the importance of GAMIT's role in fighting prejudice on this campus. We do this in many ways: our most powerful method is educating the community. One of the ways we do this is by sponsoring educational programs. We discuss current events of gay concern. Our confidential Contact Line is a source of information.

(Please turn to page 5)

munity of two other points which were inaccurately portrayed:

1) Intoxication is not considered to be a mitigating condition in a disciplinary hearing. Students are held responsible and accountable for their behavior regardless of their state of sobriety.

2) Incidents of harassment are considered to be very serious breaches of conduct on this campus and are dealt with accordingly.

Robert A. Sherwood  
Associate Dean  
for Student Affairs

## TheTech

Volume 106, Number 22

Tuesday, April 29, 1986

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# opinion

## feedback

### Graduate reported missing

To the Editor:

Ram Manikkalingan '85 has been reported missing from his Colombo, Sri Lanka residence. He was last seen leaving his home on March 27. Ram is the son of a former Sri Lankan Ambassador to Indonesia and has a brother and sister attending universities in Massachusetts. It is widely believed that he is being detained without charge by the Sri Lankan security forces. The authorities in Sri Lanka deny any knowledge of his whereabouts.

Manikkalingan graduated with a SB in physics. He was an active member of the Alpha Delta Phi (ADP) fraternity, serving in various capacities from rush chairman to house tutor. His senior thesis under Professor Claude Canizares at the Center for Space Research focused on the development of a satellite experiment for X-ray astronomy. In addition, he volunteered his services as a

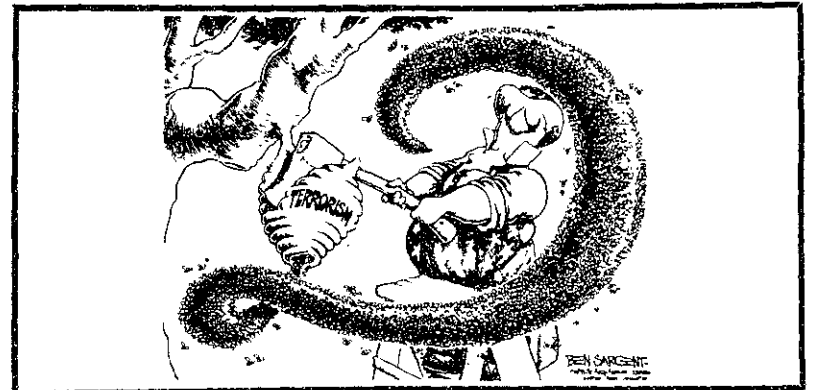
counselor for Nightline. Manikkalingan was committed to using his scientific education in his homeland and returned to Sri Lanka last July.

According to Amnesty International, there are widespread reports of torture and ill treatment of detainees, including deaths in custody. Many members of the MIT community, particularly his friends at the Center for Space Research and his fraternity brothers at ADP, are extremely concerned about Manikkalingan's well-being. Amnesty International has been informed of the case, and other channels are being independently pursued to establish his whereabouts and obtain assurances of his safety.

We ask your help in urging the Sri Lankan government to clarify the circumstances surrounding our friend's disappearance. If Manikkalingan is being detained, we ask that he be promptly

charged or released.

Kathryn Fischbach G  
Mark Schattensburg '84  
Peter W. Vedder G  
and 13 others



## feedback

### MIT lacks communication

To the Editor:

I would like to correct an error in an article by Andrew L. Fish '89 ["Lack of dialogue led to shanty arrests," April 15]. The final paragraph states, "The Corporation Joint Advisory Committee [CJAC] will hold an open forum on divestment April 30." The CJAC meeting on April 30 will not be an open forum; rather, it will be a meeting of the members of CJAC, a group of people representing students, faculty, Corporation members and administration at MIT. The students participating will be [Graduate Student Council President] Janine M. Nell and [Undergraduate Association President] Brian R. Moser '87 [ex officio] and six others [three undergraduates, three graduates] appointed by the officers of the Corporation from nominations made by the student government.

The Executive Committee of the Corporation, of which I am a member, urged the reconvening of CJAC this spring, at the recommendation of the student leaders. Our purpose is to address the broad concern over the lack of communication referred to by Fish in his article. When we

meet, we will consider sponsoring community discussions on Apartheid, MIT policies and other issues.

Emily V. Wade  
Chairman,  
Corporation Joint Advisory Committee

### Tapes could be used to blacklist students

(Editor's note: The following is an open letter to President Paul E. Gray '54.)

Dear Dr. Gray:

We have learned that your administration has video taped several of our demonstrations and rallies, as well as the arrest of eight students on March 14.

The filming of political dissidents is both shocking and unacceptable, and we demand an immediate halt to all surveillance of

protestors.

Furthermore, we request that MIT provide us with a full copy of the film so that the MIT community will know the extent of political espionage which the Institute has engaged against its own students.

Alex Rosen '88  
Mike Levine  
and four others

On behalf of the MIT  
Coalition Against Apartheid

### GAMIT supports ODSA handling of harassment

(Continued from page 4)

mation for all concerned people, as well as a resource of emotional support for the gay community. Our Outreach Programs are active measures designed to serve as a resource to our larger community for information and help in understanding and combatting our prejudices.

The job of eliminating prejudice and bigotry belongs to each and every one of us. We of GAMIT will continue to take up this task and continue to offer our resources and support to those who share our concern.

Rodney Hess '87  
Office Coordinator  
Gays at MIT

Koby  
Antupit  
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Monday - Thursday 7:30pm - 10:00pm

The phone is also staffed during other hours and during all GAMIT events.

# Salvation and glory: beautiful, beautiful

## GOSPEL CHOIR

*Glorious is the Name of Jesus:  
A Celebration of Gospel Music*

By ALISON C. MORGAN

**L**ET THEM TALK about the party in the New Athletic Center celebrating MIT's 125th birthday Saturday evening. The real party took place that same night in Kresge Auditorium, with a lot of singing, dancing, and clapping going on.

The 30-member MIT Gospel Choir's Spring 1986 concert "Glorious is the Name of Jesus: A Celebration of Gospel Music," mesmerized approximately 650 ticket-buyers for three exultant hours. Also onstage were two guest choirs, including 50 members of the Voices of Inspiration from Brown University and the 20-member Princeton Gospel Ensemble from Princeton University.

Each performed separately until the climax when all three choirs joined onstage. It was impossible not to enjoy the awesome spectacle of nearly 100 joyous college youths praising God through song.

All three choirs entered singing in unison, building audience anticipation. Princeton entered first wearing robes in their school colors, black and orange. Brown followed in gray, pink and white. MIT brought up the rear in stark black and white.

The MIT Gospel Choir opened the program with four selections. Beginning with "Glorious Thou Art Glorious," they seemed nervous but confidently breezed through four-part rounds. The second tune, "Let Mount Zion Rejoice," featured Adrienne M. Buggs '87, singing a mellifluous soprano solo while Daru Gaskin '86 complemented her with his unassuming tenor.

The concert was down-to-earth despite overwhelming spirituality. Michael Dixon '88 introduced "Let Mount Zion Rejoice" on a reminiscent note. "We sang this song at a small church during our tour [in January] . . . and we dedicated it to Ron McNair [PhD '76]," one of the astronauts who died in the Challenger explosion.

The whole choir began to sway while drums added a prominent beat during the next piece, "He Would Not Come Down From the Cross." It also became apparent that a Buggs recital alone would have been adequate. The audience repeatedly broke out into appreciative applause during Buggs's solo as she easily maneuvered her elastic vibrato inside and outside notes.

MIT's fourth selection firmly established the hallelujah atmosphere for the evening. Easygoing soloist Pascal Antoine '88, along with the uptempo musical accompaniment, had the audience willingly participating in the performance.

The considerably smaller Princeton Gospel Ensemble showed control in wavering

their voices soft to loud. Their soloists were co-soloists, male and female combinations with simple accompaniment on an upright piano. Their performance was polished and carefully orchestrated.

*"Being in the choir is such a release for us"*

— Collette Wilson  
Princeton University

The Voices of Inspiration from Brown were living proof that there is strength in numbers. They had a bass guitar and saxophone along with the upright. Their first choir director was a combination wailer/screamer/preacher/soloist who got the message across.

During their third selection, "God is Our Refuge," the Voices produced a beautiful resonance which sounded exactly like handbells. Partial standing ovations were evident for the duration of the Voices performance.

Although the Voices of Inspiration were exhilarating, the best was yet to come. Both Princeton and MIT lined up alongside the Voices for two songs to bring the show to an all new emotional high. "For God So Loved the World" produced a smooth, glossy, richly integrated sound including a clear, sweet solo by Kyla Thomas '86. The second piece with the combined choir, "Call Him Up," had an amazing *a capella* section.

*"Tonight is a preview, a forshadowing, of things that are to come"*

— Daru Gaskin, MIT Gospel  
Choir director

At this point there were tears onstage as new Christians were asked to raise their hands. It was hard to discern how many people raised their hands since everyone's heads were bowed.

MIT's Gospel Choir alone remained onstage for the last part of the concert, starting with "Go Down Moses." It was an appropriate afterglow following the big bang of the combined choir.

The MIT Gospel Choir flowed through their remaining pieces blissfully. The clapping from the audience was groggy now, recovering from the evening's ecstatic pace. But they kept on applauding, even with tired hands.

The benediction could not possibly be a solemn monologue after so much spontaneous joy. Instead, the MIT choir sang "Alleluia Salvation and Glory" with all their hearts and souls. The seated choirs stood up and sang along and so did many in the audience.

People began to leave, not realizing the concert was not yet over. One voice in the MIT Gospel Choir had not yet been heard. Phyllis Bryant stood near the microphone and Patti-Labelled "Going up Yonder." Those heading for the exit signs stopped in their tracks and turned back around. People with coats half-on and half-off clapped and smiled once again.

## The Tech

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# Education Reform

A supplement to The Tech — Tuesday, April 29, 1986

## Editorial

"Scientists, supercomputers, guidance systems, excellence . . ." These words inevitably surface as we discuss the role of an MIT education. Phrases such as "socially sensitive engineers" and "leaders of a technology-based world" fail to take on real meaning.

Everyone agrees that MIT offers an unsurpassed education in science and engineering. Nobody wants to change that. Yet something more is needed. We need to look at what students gain from their education, as well as what their impact is on the world.

"The effects of technology on society, broadly defined, cannot be an afterthought to our endeavors," proclaims the *Long-Range Plan* written by top MIT administrators. The world has become acutely aware of the limits of its resources and the interdependence of its parts in the last few decades.

In this context, it is irresponsible to design a device or perform an experiment without understanding why someone is paying for it and what impact it will have on society. Asking and answering these questions should come naturally for MIT graduates, who are supposed to be leaders and planners. If it doesn't, something is wrong.

MIT is a university polarized around science, said former President James R. Killian Jr. '26 thirty years ago. That means it should offer the resources of a university to a student body primarily interested in science. But how can it do that? It must among other things broaden its students' interests without dictating them, provide a balanced education while still allowing some elective choice, and encourage diversity in its student body.

The faculty has shown sincere interest in hearing student views on curriculum reform. Few students, however, have actively participated in the forums and discussions sponsored by the committees studying the undergraduate program. The apathetic deserve part of the blame for any shortcomings in their education.

The goal of this supplement, then, is to stimulate the minds of the MIT community. The discussion of educational reform is by no means over. In fact, students' chances to contribute are expanding as more committees seek student members and student comments.

This education reform supplement contains many perspectives on what an MIT education is and what it should be. We hope that members of the community critically examine this issue and then speak up. It's an opportunity we can't afford to miss.

## Education Reform

A supplement to The Tech April 29, 1986

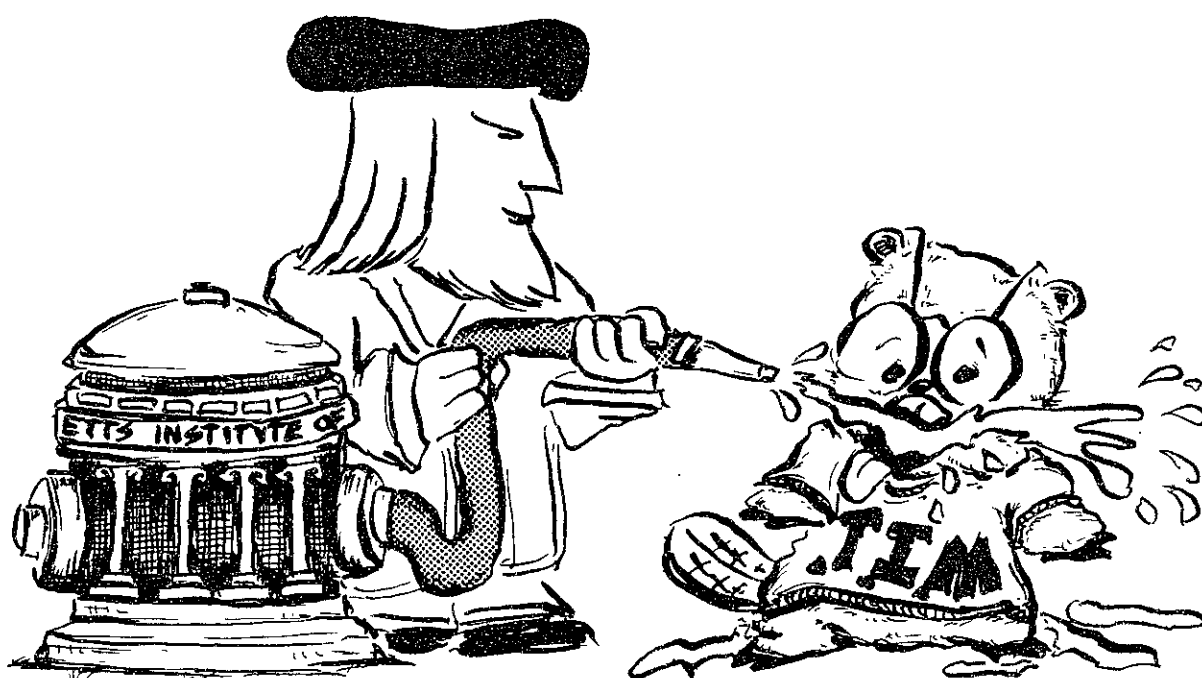
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Ann F. Friedlander,  
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Louis Menand III  
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## GETTING AN EDUCATION AT MIT IS LIKE...



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## Evolution of the reform movement

- Fall 1984:** Dean of Engineering Gerald L. Wilson '61 and Dean of Humanities and Social Science Ann F. Friedlaender initiate discussions between the councils of their respective schools in the fall of 1984.
- January 1985:** Wilson and Friedlaender establish two investigative committees: Travis R. Merritt, director of undergraduate humanities, is charged with studying the history of MIT's humanities requirement and comparing it with other schools; Professor Kenneth Keniston is charged with suggesting possible models for the role of the humanities in a technical education.
- February 1985:** John M. Deutch '61 named provost.
- April 1985:** Deutch creates the positions of Associate Provost for Educational Policy and Programs [S. Jay Keyser, head of the Department of Linguistics and Philosophy] and Dean for Undergraduate Education [Margaret L. A. MacVicar '65, director of the Undergraduate Research Opportunities Program].
- April 1985:** Committee on Educational Policy (CEP) proposes new regulations limiting the number of subjects that undergraduate major programs may require, prompted by concern that students were expected to take too many courses at the same time. The committee forms a Faculty Policy Committee to address general issues of interest to the faculty and a Committee on the Undergraduate Program to give undivided attention to education.
- May 1985:** The faculty approves both of the CEP's changes.
- May 1985:** Two dozen faculty attend a weekend-long meeting at the Woodstock Inn in Vermont to go over the Merritt and Keniston reports and raise further issues. They agree to form two more committees — one to fashion a new humanities requirement, the other to propose a possible curriculum teaching "dual literacy." Pauline Maier is chosen to chair the Humanities and Social Sciences (HASS) committee, and Leo Marx to head the Committee on Integrated Studies (CIS).
- Summer 1985:** HASS committee and CIS begin meeting.
- Summer 1985:** Undergraduate Association (UA) President Bryan R. Moser '87 revives the inactive Student Committee on Educational Policy (SCEP) and meets with MacVicar, persuading her to recommend that the faculty committees include official student members.
- October 1985:** Wilson and Associate Dean of Engineering Jack L. Kerrebrock establish the Commission on Engineering Undergraduate Education (CEUE), and Professor Robert Silbey puts together a School of Science committee to evaluate the Institute's general requirements in physics, calculus and chemistry.
- October 1985:** Maier's committee announces that it would take a student member; the others also eventually agree to student representation.
- October 1985:** The *Chronicle of Higher Education* reports that the undergraduate program at MIT produces fewer business executives than many other nationally prominent schools.
- January 1986:** Meier committee issues recommendations proposing changes in HASS requirements. Each student should take one course in: socio-cultural studies, historical studies, literary and philosophical studies, and the arts. A new Institute requirement seminar entitled "The Contexts of Science and Technology" was also proposed.
- February 1986:** CEUE releases the "Goals of Engineering Education." The report reads, "Undergraduate education in engineering at MIT should prepare its graduates for leadership in technology and for professional excellence, through an education in science and engineering, with an emphasis on fundamentals, in essential partnership with the social sciences and the humanities, for the advancement of engineering and the betterment of society."
- March 1986:** CEUE issues interim report. Report explains eight objectives of an engineering education, including a foundation in the sciences, acquisition of skills for self-education, design experience, communication skills, study of social issues of technology, and an understanding of the humanities.
- March 1986:** Interim Report of the Committee to Design an Integrative Curriculum in the Liberal Arts calls for the creation of a College of the New Liberal Arts, within which the Institute would integrate the study of the humanities and the sciences. The program is necessary to create "a distinctive intellectual community" at MIT. The proposed Bachelor of Science and the Arts degree would be "unique in American education." Committee Chairman Marx doubts MIT will accept the recommendation.
- March 1986:** CUP issues initial report. MIT needs to broaden its undergraduate curriculum, the report states. MIT's "historic commitment to a broad-based education for all undergraduates . . . is not manifested clearly in the current educational program." Institute requirements should emphasize general education rather than pre-professional preparation, the paper continues.

Harold A. Stern

## index

- ▶ Diana ben-Aaron: . . . . . page 3
- ▶ Alvin W. Drake: . . . . . page 2
- ▶ Ann F. Friedlaender: . . . . . page 2
- ▶ Jack L. Kerrebrock: . . . . . page 3
- ▶ Margaret L. A. MacVicar: . . . . . page 4
- ▶ Louis Menand III: . . . . . page 2
- ▶ James R. Munkres: . . . . . page 3



## Technology and humanities need to be tied together

Ann F. Friedlaender

I believe that future educational initiatives within the Institute must recognize the need for increased communication between science, technology, and liberal arts. In particular, I would like to stress that the liberal arts should provide the following two distinct but equally important educational components to technically educated individuals:

1) an understanding of the social, political, and ethical consequences of technology; and

2) an exposure to a wide range of approaches to problem solving and conceptualization that enhances one's creativity, imagination, and the ability to design.

With respect to the relationship of technology and society, it is important to note that the goal is not only to provide scientists and engineers with a framework that will permit a wise and sensitive use of technology, but will also enable them to deal with a citizenry that is both skeptical and fearful of the impact of technology upon society.

While there are many uncertainties associated with the future, it is clear that society will continue to be nuclear and technological. That indicates that if scientists and engineers are to be able to see the full range of applications of their discoveries, they must also be able to understand society's reaction to new discoveries and their ensuing applications. This means, in turn,

that technologists must understand the costs and market response to their new technical developments, consumers' behavior and their assessments of the risks associated with these developments, the political process and the formation of lobbies and pressure groups, ethics, and the sociology and psychology of individuals and groups who are confronted with technological advances that they do not understand and may at first fear.

Let me now turn to the question of the role of the liberal arts in creativity and design. While relatively little is known about the creative process or the determinants of imagination, there is considerable evidence that the truly creative scientists and engineers were not only broadly educated, but had strong parallel interests in the arts and humanities.

Although the evidence is admittedly anecdotal, it does suggest that creativity and imagination are developed and enhanced by an exposure to many approaches to knowledge and ways of knowing. This implies, in turn, that the basic habit of maintaining a skeptical, actively critical point of view toward all knowledge should be encouraged, as should the development of abilities to look for and use analogies, similes, and metaphors to juxtapose and make connections between facts and ideas that might not appear initially to be interrelated.

These are not the skills generally taught to undergraduates within the scientific and

■ Friedlaender, page 4.



## Students need a less intensive, more reflective education

Alvin W. Drake

MIT is a firehose. After we change everything, it will still be a firehose. It doesn't just happen to be that way. The Institute is what it is because of the way its faculty and students are and, of course, because many aspects of the firehose work terribly well for most of us most of the time.

But we want to be aware of the causes and costs of the firehose and be able to provide healthy, routine alternatives to it. MIT need not be a firehose for all of us all of the time. We need to avoid being swept away by it and avoid losing too much of ourselves or too much of our human potential.

Risking severe generalizations, I claim that, relative to the real world, most of us who come here are:

*Introverted:* we are more cerebral than emotional. We like to work hard — often,

if not always, alone. We are fascinated by many technical aspects of the world.

*Intolerant of ambiguity:* we are uncomfortable with ambiguity and ill-defined problems, even though 99 percent of what matters in the real world is fraught with ambiguity. Many of us find great comfort and significant satisfaction by working very hard to make progress on precisely defined problems.

*Intense:* we are capable of the concentration and monomania it can take to do something really well. Think for example,

about the 6.001 experience and that a great many students enjoy it! We thrive on each other's drive and intensity except when they give us nervous breakdowns.

*Specialized:* we start out with far too narrow a self view which MIT, not too surprisingly, narrows even further. More than many other people, we are thinking of ourselves as progressively limiting rather than expanding the list of our personal and professional potential and future activities. We can be intimidated by the ex-

pertise of other people like ourselves. We may want to improve ourselves and excel, probably by future specialization. Also, to the detriment of society, we assume there are other specialists into whose hands we may leave all the ill-defined problems of the world.

Each of the above generalizations may be stated in positive or negative terms. In any case, I doubt that anything within sight will make them much less appropriate for MIT. Given

the resulting special and often exciting world of MIT, made what it is by all the people who choose to come here, what can we do to obtain the many benefits while controlling the costs? I have a few suggestions.

Students need loud signals so that their choices about the types of growth experienced here are made consciously, rather than by institutional inertia. We need to find ways to keep students aware of the narrowness of the slice of life we emphasize.

■ Drake, page 4.



## Broader programs which require less busy work are needed

Louis Menand III

*First, the good news.* I find it difficult to name many universities that exceed MIT in the richness of its resources. Faculty and students are first rate and academic research pursuits are carried out at the highest levels across the Institute. For undergraduates unequalled research opportunities, a January program with the most diverse of intellectual stimulants, an infinite corridor that is the nearest thing to the Athens Angora I have ever encountered, world renowned scholars, art and music which are the envy of many a university, a sense of openness and a healthy self criticism which may be unique, are all centered in the midst of superb social, humanistic, scientific, and engineering disciplines, many without peer.

Among MIT undergraduates there is a very high percentage of an entering class which graduates. While each entering class has been drawn to Cambridge for a great variety of reasons, there seems to be a close match between each applicant's sense of who she wants to become and what she actually does when here. In each class there is some shifting among majors and perhaps deep in the heart of the occasional chemical engineering major there is a sense of "I'd rather be playing my flute," or "I'd rather be a lawyer." No one knows how many of these there are, but it is clear that Institute policy allows the greatest flexibility to change course fairly well along in one's career here. Among the world's taxi drivers there may be a few MIT graduates; on the whole students mature into what they want to become — professionals, graduate students, or taxi drivers. Sounds good!

*Now for the bad news.* Or rather now for some rumblings in this Eden. The details of the educational program have brought serious complaints, and the plethora of committees now in session is a direct response, with each committee struggling to think through the special mission of its school and program and at the same time trying to stay attuned to the institutional issues which have been voiced by so many — both faculty and students alike. What are the issues?

From students, for many years, comes

the lament of time — the day and the week too short to accommodate either what is asked or what one wants to do. Time analyzed seems to reveal a numbing number of problem sets and quizzes piled one on another. At the end of the term more problem sets, French literature papers, and political science term papers due at the same time as a long lab report. To any professor at our sister institutions the lament would sound familiar, but in science and engineering (as in foreign languages) the sequential nature of the learning exacerbates the situation.

And from many students in their junior and senior years there is a realization that they have not really developed a good sense of the complex political/social world they must enter and in which they must practice their trade. Nonetheless, a good many have developed a contextual sense, and I suspect they have because they have studied broadly beyond their majors (including at Wellesley and Harvard), and have gone to and participated in the vast number of seminars, workshops, and symposia offered each week, from Technology and Culture seminars to the latest in ceramics.

From the faculty (Institute-wide), has come the lament that their students graduate without having systematically studied issues such as toxic waste or computers and privacy or the implications of genetic engineering or of excess of government secrecy. Some faculty do not perceive dealing with those issues as their concern; others believe just the opposite. And also from the faculty comes the lament that what is called student culture does not lend itself to a more sophisticated understanding of the interplay among philosophy, history, politics, and technology. The idea is that while the west side of Mass.

Ave. may have an important therapeutic quality, the resulting culture has been lobotomized. I sometimes think that the excess of problem sets and quizzes are responsible for the "tooling culture." Reduce what President Paul E. Gray '54 called pace and pressure, and then see what happens to the "tooling culture."

Another lament based on boast goes something like this: MIT is renowned for providing an education to its students so that they can become first class problem solvers, but our educational program ill equips them to be problem formulators. This argument says that our students do not study politics, history, and culture in tandem with science and engineering. And as a result the questions they ask and the ways they think about socio-technical issues are ill-informed and shallow. The argument says that they do not learn to ask why?

A final lament is directed against the humanities and social sciences requirements: too many Humanities Distribution subjects with no intellectual focus to any group of three. Possible plea: guilty. There is, however, anecdotal evidence that students do not agree with this criticism.

What to do? First, do what can be done right away. Reduce the amount of busy work in courses — in engineering and anywhere else there might be a problem. (political science?) Inasmuch as we have units, have a unit to a unit. Don't crowd students with quizzes and projects outside of regularly scheduled class and laboratory hours. In the departments, make sure that students have a chance systematically to learn and think about the social and environmental consequences of what they will do, how a technology or how scientific or political systems can have a positive effect on all of the world, particularly that huge

mass of the world's citizens struggling to enter a world as rich as is the United States. And introduce students to the well-developed ethical principles which every professional association has adopted, from architecture to mechanical engineering to psychology. To my knowledge very few science and engineering students have ever heard of these. They are quite remarkable statements about what professionals should consider as professionals.

Second, as the Institute committees and the Committee on Undergraduate Program ponder the nature of school and departmental requirements, they should ask themselves how the academic requirements and programs intellectually broaden undergraduate education, how the program or new programs can reach across disciplinary and school boundaries, how student time can be arranged both to "cover" what is professionally necessary and in a manner such that the student has a more relaxed, more thoughtful, and more sophisticated sense of his education.

Whatever is done to broaden the education at MIT may well involve (where appropriate) new definitions of science and engineering education to make it possible for MIT graduates to have mastered their undergraduate field, to be equipped to lead personally rewarding and moral lives, to lead ethical professional lives informed culturally, historically, and politically, and to have an opportunity to understand their technical competence within a world view beyond self and nationalism. Unless these qualities are stressed in clear and courageous terms across the Institute, in departments as well as in living centers, MIT students will be shortchanged. This set of issues involves faculty throughout the Institute thinking what we do, how we do it, and why we do it.

For themselves, students can continue to enrich their own lives through greater use of the extraordinary resources already here. To those students who are already doing so, I say "Congratulations, you have transcended the system and you have learned how to educate yourselves. Your schooling, rather than getting in the way of your education, has found common cause with your education."

(Editor's note: Louis Menand III is a senior lecturer in political science.)





## Students impose much of the pressure of MIT on themselves

James R. Munkres

There has been a good deal of discussion over the years about the "pace and pressure" of student life at MIT, about how getting an education here "is like trying to drink from a firehose." I will add a few comments to the discussion.

Coming from a liberal arts college background by way of a couple of large universities, I have a picture of college education somewhat different from that popularly espoused at MIT. It involves (1) taking challenging subjects, (2) for which one is prepared, (3) working hard on them, but (4) balancing the purely academic with other educational experiences, and (5) above all, keeping a sense of perspective about what one can realistically accomplish within the span of a given academic term.

I know students who have adopted this point of view, and by and large, they are finding their MIT experience worthwhile. But they stand apart from the standard pattern of the MIT culture.

The aspect of this culture that bothers me most is the fact that students are always in such a rush. "Overloading" rules supreme. The official version of a "normal load" is four subjects, but most insist on more. The reasons they give vary widely. For example:

*I should get started on my major early. Why?*

*I can handle 60 units OK. But can you*

handle them well?

*I work better under pressure.* Does that mean that you really don't like to learn, that you exercise your brain only when forced to?

*Perhaps I can graduate in three years.* To impress someone? To save tuition? — there are better ways to do that.

*I want to double-major.* Why? It won't impress anyone but the people back home — who may think you got two degrees for the price of one.

*One of the subjects I'm taking doesn't require any work.* Then why in the world are you taking it? You won't be learning anything.

*Everyone else is doing it.* No comment.

The real reasons, I suspect, for the hectic pace that students impose on themselves lie unacknowledged and deeper. In practice, they know that they earn the respect of their fellow students, and sometimes of their teachers, by taking on an extra load. And the

bigger it is, the more impressive it is. Of course, this may mean that they must neglect those aspects of the subject that aren't going to be graded, must skip the problems that aren't to be handed in, must skim the required reading sufficiently to fake their way through the classroom discussion. The important thing, it seems, is receiving credit toward the degree, not the process of learning.

Who is responsible for this state of affairs? We all are, I suppose. If we as facul-

■ Munkres, page 4.



## Students have refused to become involved in the reform process

Jack L. Kerrebrock

The review of engineering undergraduate education has been under way with some intensity now since last August, in close cooperation with the reviews of humanities and social sciences by the Maier Committee, of science by the Silbey Committee, and of integrative education by the Marx Committee. These activities are all coordinated by at least bi-weekly meetings

of the Committee on the Undergraduate Program. There have been a number of meetings of the deans and several discussions at the school councils (these are the assemblies of department heads in each school).

In short, there is a good deal of discussion and a sense of movement in the committees and at the management level. We have tried, through forums and through departmental groups, to involve faculty and students

actively in the discussions, with only modest success. The attendance of students at the forums arranged by Tau Beta Pi has been small. Those who have attended contributed significantly to the commission's understanding of the real problems and to the identification of possible solutions, but we need more student input.

It is now very clear that the review of undergraduate education will not end this semester; it will continue through the summer and into the 1986/87 year, and there will be opportunities for student participa-

tion then, but we want your views now, on our initial findings.

The preliminary findings of the Commission on Engineering Undergraduate Education (CEUE) took the form of a set of "Goals for Engineering Education" [The Tech, Feb. 14]. We have received very little student comment on these, which are our view of the objectives for your education. Are our views consistent with yours?

We are now actively discussing means

for better realizing these objectives and although the process is far from complete, some points are becoming clear. For example, we think many subjects attempt to cover too much material, at the expense of adequate discussion and depth of understanding. There is often a disproportionate emphasis on solution methodologies, at the expense of discussion of fundamentals and practice in application. The lecture-recitation-homework-quiz format leaves little time and less motivation for self-study. Are there other formats which will encourage self-study, including use of libraries? There are many questions of this sort.

We are planning several mechanisms by which you can provide us with the answers to our questions, and more important, with your own independent views of these matters.

1) Beginning on May 1, there will be tables in the Walker and Lobdell dining

■ Kerrebrock, page 4.



## Reform must not increase the number of requirements

Diana ben-Aaron

*"An MIT graduate should be able to debug a circuit, write a program, prove a theorem, build a machine, clone E. Coli, design a house, win a grant, run a company, debate the issues, and write a Popular Science article about it all. Specialization is for engineers."*

— with apologies to Robert A. Heinlein

What should an MIT education consist of? Or, recalling the observation of Student Council on Educational Policy Chairman Carl A. LaCombe '86 that education is not a state of arrival but a process, what should the MIT curriculum consist of?

It's not a new question. In fact, The Tech discussed it at the dinner table of Talbot House two years ago. I remember a physics major saying everyone should have to take quantum physics, a computer science major saying everyone should have to take 6.001, an architecture student saying everyone should have to take Level I studio.

I took quantum physics. I took 6.001. I wanted to take Level I studio. But I did it because I wanted to, not because the courses were required. As Professors Gerald J. Sussman '68 and Harold Abelson '73 imply in the excellent *Technique 1985* interview with them, that would have taken all the joy out of it.

I would not recommend my George Plimpton-style curriculum to everyone, except to point out that the things one learns in science courses and "neat ways of thinking about things" courses probably remain useful and current for longer than the advanced engineering techniques taught in upper-level engineering electives.

The status quo served me well precisely because it allowed me to design my own curriculum. Curriculum changes will not serve students well if they reduce the number of free elective units or the number of student-selected courses in the departmental programs, or if they increase the total number of units required to graduate from MIT. As it is, most MIT students have no time to read non-required books for pleasure during the term.

On to specific suggestions with respect

to the proposed Bachelor of Science and Arts degree and the trouble with humanities at MIT. I graduated from the Institute last year with certified "dual competency" (SB Course XXI-E and III-A) and have spent six of the last 12 months job-hunting. There is not an overwhelming demand for people with "dual competency" at the entry level.

Most companies value the ability "to do one thing well," not the ability to tie diverse fields together. They may think it is nice that you have studied ancient Greek, but they are hiring you to write code. (Or they may think it is nice that you have taken 6.001, but they are hiring you to write news.)

I think the situation is different in the later stages of a career, but MIT would be doing its students an immediate disservice to award them anything but the traditional SB degree, which is "recognized in every realm for trusty stamp and pure assay," to wit: two terms of calculus, two terms of physics, one term of chemistry, etc.

The basic idea of creating a new academic program leading to a joint or double major with humanities is sound — particularly one that would extend the community of a freshman program to four years. However, the real question of where the humanities degree program fits into an MIT education and the morale problems within the department will not be solved by creating a new degree program.

The Humanities Department is removed from the rest of MIT, both geographically and atmospherically. Most humanities faculty have their offices in Building 14 and are rarely required to walk the length of the Infinite Corridor and across Mass. Ave. with the vast mass of their colleagues and students.

Science and engineering professors often know more about the humanities and about each others' fields than the humanities department knows about science and engineering. "Differential equations — what's that?" one of my Course XXI advisors said to me. "What department is that in? Why do you want to take it? I think you need counseling about how you're making your decisions."

This isolation might be all right if it were positive — if there were a Technology Square for humanities. But there is not, and the Humanities Department is not widely seen, by students or professors, as a place where exciting research is being

done. This perception is false; the department's faculty has published many excellent books and articles, among them *Entertaining Strangers*, A. R. Gurney's satire on the department itself.

Yet from the number of pointless stories about Harvard I have been told in lieu of guidance, it is clear that many of the humanities faculty wish they were elsewhere. The wish shows up in cutting remarks to students like these:

● "We don't fool ourselves — we know students only take our classes because they fit their schedules."

● "Oh, you're from Wellesley — you'll know English, then."

I propose the following initial actions:

**Architectural:** Moving the Course XXI office and the Humanities Student Lounge over the bridge to the main complex could have an enormous effect on visibility and community, and on the XXI faculty's perception of the rest of MIT.

The lounge could become a repository for unwanted books and magazines (for instance, from library book sales). Put a piano in it and issue keys to Course XXI

and other interested students. The present lounge was open only business hours when I was a student, because they were worried about something happening to the harpsichord. The harpsichord was kept locked, and we were not allowed to play it.

**Student community:** Reinstate the senior seminar. It will probably have to meet at 5 am Sunday morning because that is the only time everyone can make it, but at least Course XXI students will finally meet each other in an academic setting. Watching Bugs Bunny together, as we did at the annual Course XXI party, is not a link for life.

Incidentally, the Course XXI colloquium that is being held for the Burchard scholars is a great idea. But how petty to restrict it to the Burchard scholars. Most groups at MIT, from graduate seminars to the Concert Band, select themselves on the basis of interest. So please open up those dinners to anyone who wants to come, even if it means you can no longer afford to serve a full dinner.

**MIT community:** Continue, whenever funds allow, to bring outside speakers to lecture on humanistic topics. Among the lectures I remember best from MIT were Margaret Atwood and Tracy Kidder speaking under the auspices of the humanities department. Have regular Course XXI convocations, also open to everyone.

I hope the present curriculum-reform discussion is the beginning of an age of innovation in education here that will result in more attention to teaching and some innovative new programs. I'd like to see some alternative programs for upperclassmen, too, and I'd like to see someone taking Hal and Gerry's thoughts in *Technique 1985* seriously. How about a term-long program of "modes of thought" courses, to be taken one at a time in intensive total-immersion format?

It would be mind-blowing to spend a month studying modern algebra, and then two months doing nothing but digital design, and then cool off before the end of the term with a month of music theory. I'd sign up for it all, after I finished Level I studio.



# MIT's mission is to prepare leaders for a world based on technology

Margaret L. A. MacVicar

(Editor's note: the following is the text of a speech given to members of the MIT Corporation.)

This community gathers regularly in a spirit of shared values and high aspirations. For this institution, for speakers and audience alike, such assemblies are rather like councils of the members of a particularly sturdy, always feisty, forward looking, and long enduring family. With that in mind I will address you today as a beginner dean — offering my views as to where MIT is as an undergraduate institution, and where it *might* go.

Since no one has stood here as dean for undergraduate education before, let me take a moment to comment on the enormous significance of the occasion.

The establishment of my office is an unambiguous statement by the administration that MIT must have at its heart commitment to a world-class undergraduate educational program. The administration's statement — articulated by Paul Gray, and then fulfilled in John Deutsch's reorganization of the Provost's Office — paralleled a widely held view by the faculty that such an office had to be established. The faculty — in a surprisingly swift process last winter and spring — dissolved its longstanding Committee on Educational Policy and established a new faculty governance structure including the Committee on the Undergraduate Program, which is headed by this new dean, at faculty request. So I stand here representing a new partnership of the administration and the faculty, centered on our undergraduate education program.

People ask me, isn't it my job, then, to lead the institution's efforts to revise, reform, improve its academic programs, its teaching and advising of undergraduates, and its development of curricula, texts, and the like? People who ask that do not know MIT very well! One doesn't lead a federation of royal barons and tribal chieftains. Cajole, yes. Remind, yes. Persist, yes. As one faculty member said to me, "You are our conscience." This, of course, is not especially reassuring! I am reminded of a remark that former Labor Secretary, Ray Marshall attributes to Lyndon Johnson. Early in his administration, someone came to Johnson and laid out a first-rate idea for government action in a quarter where government action was needed. Johnson replied to him, "That's a great idea. The country needs it. Now go make me do it!" Well, enough on why I am here.

Of greatest importance is what happens to students once they arrive here at MIT. In fact, for anyone at any educational level, of greatest importance is what happens to them in that formal educational structure as judged by the extent and facets of his/her well-being and contributions later.

To the high school counselors of this year's entering class our Admissions Office wrote: "What we value most in a student is a very solid background in mathematics and the sciences, the ability to read, write, and reason critically, and a healthy and broad interest in those activities and ideas that give individual meaning to life."

If this sounds to you like a prescription for identifying leaders, it does to me too. And why shouldn't it? For it is not technicians that we seek to prepare, nor bench-tied engineers practicing narrow specialties and intent on deadlines and objectives devised elsewhere. Our purpose is to direct the best minds toward inquiries and enterprises concerned for the human condition.

Leaders more often than not are agents or managers of social change. And social change is intertwined with a conception of technology.

Our undergraduate students will come into their adult primes early in a new millennium. More often than not, these graduates will be looked to for good technological judgement, for intellectual rigor, and for social leadership. Our graduates' strengths and their weaknesses will, in turn, either inspire the hopes or dash the confidence of others.

I want our undergraduates to serve well their citizenship in that complex, sophisticated, delicately balanced world. A world of diversity, conflicting expectations, and technologically-driven motivations; a world made all the more precarious by international interdependencies, and by inequities in resource distributions.

It is uniquely MIT's opportunity, I believe, to prepare the world's arguably brightest talents to serve well in both technical excellence and in humaneness and basic decency. Our academic program must look forward, to a future where technology and science present dramatic social options and stark choices little imagined only a few student-generations ago.

Some amongst our MIT academic community sense that our academic program — both its core Institute requirements and many of its specialty courses of study — is not sufficient in character and breadth for students aspiring to make contributions of significance to the world, say in 2015 AD. Beginning with conversations between the deans of the School of Engineering and the School of Humanities and Social Sciences, Gerry Wilson and Anne Friedlaender, a small nucleus of concerned faculty has grown into what may be a critical mass sufficient to launch an unflinching assessment and reformulation of our undergraduate educational program.

Specifically, I and the five academic deans have joined together to establish an Institute committee to reshape the Institute requirements in the humanities, arts, and social sciences. These constitute half of the undergraduate core curriculum requirements for graduation. The other half is comprised of science, mathematics, and laboratory subjects. The School of Science — which has primary responsibility for these latter subjects — is just getting underway a parallel examination of the nature, rationale, and appropriateness of the current subjects, preparatory to proposing what could be the first broad, major changes in this set of requirements in 20 years.

At the same time, the School of Engineering is undertaking a bold review of its curriculum. That school is convinced that its current content-dense curriculum, void of integration with the liberal disciplines and paced like a marathon race made up of many sprints, falls far short. Engineering faculty seem ready to question everything from the four-year structure on the SB degree interval, to the necessity for so many specialty subjects, to the contradiction between the solitary experience of the student's educational process as compared to the social and team-oriented working modes of the career professional.

Interesting as a complement to these activities, the possibility of a uniquely MIT liberal education program for a small number of new

students also is being explored, in generic form, by a committee in the School of Humanities and Social Sciences, with School of Engineering and School of Science participation.

MIT's task is not merely one of exposing students in the sciences and engineering to more humanities and social sciences, but one of developing a true educational partnership among the technical, arts, social and humanistic disciplines so that on some level both the faculty and their students see their interrelationships between science and technology on the one hand, and societal, political, and ethical forces on the other hand. This suggests, in turn, that these cannot be taught in an isolated, piecemeal fashion by faculty in different disciplines, but that an integrated interdisciplinary approach must be used. One of the challenges of such an endeavor not only will be the education of the Institute's students but also a number of its faculty.

In addition to expanding the social and political awareness of our students, MIT must expand their creative and design capabilities. While relatively little is known about the creative process or the determinants of imagination, there is considerable evidence that the truly creative scientists and engineers are not only broadly educated, but have strong parallel interests in the arts and humanities. There is also evidence that freshmen may arrive more open, creative, and enthusiastic than when they leave four years later from current day science and engineering programs. The development of: (1) habits and skills in looking for and assigning analogies, similes, and metaphors in order to permit the juxtaposition of facts and ideas that might not at first appear to be inter-related; (2) the ability to conduct a personal, informal search for new ideas and insights; and

(3) the ability to translate findings of this search into the rigorous structured methodology needed for verification and for incorporation into the accepted body of knowledge, are not the current skills taught to undergraduates within the scientific and engineering disciplines. Subject offerings must be developed that will not only serve to introduce students to a wide range of approaches to knowledge, but will serve to encourage them to make connections and analogies within a wide range of social, humanistic, and scientific and technical disciplines. In post World War II's three and half decades MIT has steadily prepared for this moment without knowing when or even if it might come. In a Dec. 1950 press release announcing the establishment of the School of Humanities and Social Sciences, a major formal step was taken. This school program was described as centered on, "the relation between science and technology on the one hand, and man and his institutions on the other."

In the interim period the school has grown and matured, and elsewhere in the Institute related activities have come to pass. We have enriched our institutional base with front ranking economics, sought after urban studies, and widely suffused studies of learning and cognition. Policy studies, energy resources, artificial intelligence, and brain sciences are but a few

such areas of activity which mingle with such as robotics, international studies, elementary particle investigations, polymer processing simulation and maritime law to emphasize the wide ranging character of the current endeavors and interests of MIT faculty members and students.

It is timely for MIT to think through its objectives for the future. For choices have to be made. A choice between continued specialization and the technical density of our leading undergraduate programs and a broader, more fundamental integration of technical with humanistic studies. Another choice that may surprise you: between continued unchecked growth in research volume — to which increasing graduate student, postdoctoral, and research staff members are tied — and reserved time and attention to our undergraduates. In 1982, for the first time in its history, MIT's ratio of graduate students to undergraduates exceeded one.

We must face this four-square. The centrifugal forces on our community that Paul refers to arise largely from research and professional demands on our faculty. Undergraduate education is the leverage that *brings us together*. The centripetal force that defines our center. Some use a different metaphor and speak of it as the necessary *sine qua non* scaffolding for the MIT educational edifice as a whole.

As conscience, I need your help. When you sit on visiting committees I want you to ask tough, piercing questions about the fundamental character of this institution, and about how that department, laboratory, or office fits in. How do the two futures mesh? What role is that faculty envisioning for itself in our institution's undergraduate education? What character of undergraduate education is, in fact, in mind?

You see, this faculty cares so deeply inside for serving and doing well in all that it undertakes, that your reminders and explicit provoking of our dedication and aspirations in undergraduate education can be powerful in our current deliberations. The overall process of the deliberation must have as a result that we be one of mind concerning the kind of educational institution and undergraduate academic experience we are about.

I am encouraged by the heritage, past achievements, current strengths and promise of this very special institution to whom I have committed my career. MIT stands ready for an even more mature conception of its purpose.

Technology is arguably an attitude. Technology encompasses consequences. It carries responsibilities for identifying risk and for weighing human costs against human benefits. MIT has never shrunk from these responsibilities, but perhaps at no other time in its history has the need been so great for MIT's leadership and example in world affairs. Our message to our undergraduates should be that technology offers suggestions of agenda, on goals and priorities and that attention to human elements and human consequences of these cannot be less than rigorous, thorough and broadly shared.

It is our good fortune to have your wise counsel and encouragement in this very difficult undertaking. I don't know if we can pull it off. But I believe that the particular galaxy of leadership MIT has now, the unusual confluence of national and international anxieties, social issues, and economic interdependencies, and the emerging unease of our faculty with the educational status quo — give us the very best odds for success that we're going to get for a quarter century or so.

(Editor's note: Professor Margaret L. A. MacVicar '65 is dean for undergraduate education.)



ability to make connections among apparently disparate elements grows. Thus in a truly successful education, the many cultures should be merged into one.

(Editor's note: Professor Ann F. Friedlaender is dean of the School of Humanities and Social Sciences.)

## Drake

size and the benefits of going beyond these slices.

I have two proposals to help students make more aware choices about the basic character of their educations.

**Require less:** In the Department of Electrical Engineering and Computer Science, for example, I think we should continue the same intense, carefully prepared, usually excellent undergraduate subjects we already have. But too much of a good thing is not necessarily a good thing. Let's drop about 40 percent of our departmental requirements, allowing each student to pick her own 40 percent. Many students will do whatever they do now, but others will reach out in broader directions. Let's forget about the old image that engineers need to be loaded up with *everything* in four years because they'll never learn anything else. Let's remember that a too intense, overprogrammed, unreflective education can cheat students out of a major benefit of the university experience — the opportunity to acquire the skill of self learning.

**More sloppy stuff:** Even if we deal with them less satisfactorily in the classroom, let's offer subjects that confront more of the imprecise important problems with which the

world grapples. Some students will, if there is less departmental pressure, be likely to take subjects on the interaction of technology and society. Others will at least have the space for more experiences at the design and evaluation of engineering systems, a rare item in today's curricula. Others will write their own tickets in more innovative ways.

**Trees: 1 Forest: 0** I'll end with an example of the phenomenon that I'd most like to change. Years ago, in a subject entitled "Formal Models and Public Policy," Joseph Ferreira Jr., associate professor of urban studies and planning, and I asked two students to give the class a critical review of some linear programming technical solutions used in Brooklyn to achieve school desegregation. How, we asked, were the students, the teachers, and the parents likely to respond to the results? How much did the mathematical model relate, if at all, to the concerns of the people involved in the actual problem of school desegregation?

The students came and enthusiastically explained they had found a more interesting issue to discuss. In particular, they presented ways to speed up the algorithm for the computer system used in the assigned papers!

I think it would be worth a lot to broaden such perspectives. Not all students will jump at the chance, but let us help them make their choices on an individual basis rather than from a perceived need to go with the flow of the firehose.

(Editor's note: Alvin W. Drake '57 is a professor of systems science and engineering.)

## Munkres

ty are trying to do twice as much as we can do well, we may have a hard time advising our students to do otherwise. And, for both faculty and student, being under pressure is a perfect excuse for doing less than a first-rate job on what one undertakes.

(Editor's note: James R. Munkres is a professor of mathematics.)

## Kerrebrock

halls, designated for discussion of engineering undergraduate education. From 12 to 2 pm each day, there will be one or more interested faculty members present to engage you in discussion. We hope you will come.

2) We are reserving a special space in *The Tech* once a week, where articles concerning undergraduate engineering education will appear, such as this one. If you have thoughts you wish to share with the community, write them out and submit them to the editor, designated for CEUE space.

3) Questionnaires will be distributed, by which you can express your views about the "Objectives for Engineering Education." When you get this, please give it serious consideration. Even if you are about to graduate, think of those who will follow you.

Finally, when you feel the urge, tell your favorite faculty member how you feel about education at MIT.

(Editor's note: Professor Jack L. Kerrebrock is chairman of the Commission on Engineering Undergraduate Education.)

## Friedlaender

engineering disciplines, but rather within the disciplines of literature, history, writing, music, and other liberal arts. Thus the education of the engineer and scientist should necessarily include a large element of humanistic inquiry that would expose him or her to the intellectual and conceptual process of these disciplines. Only by such an exposure can an individual understand the correlative aspects of the various disciplines and free his or her mind of the shackles of a narrow technical perspective and its related approaches to problem solving.

Institute Professor Victor Weisskopf, one of MIT's most distinguished scientists, has argued that, ideally, there should be no absolute distinction between the sciences and the humanities, between technology and its applications, indeed between the much heralded two cultures. But if all are part of a whole, are simply different manifestations of a single, unifying process or culture, they are certainly not treated or recognized as such. The primary goal of education — whether it be technical or liberal — should be to make these similarities apparent and thus to enhance one's creative and correlative abilities, regardless of whether one ultimately becomes a scientist, a technologist, a humanist, or a manager.

Indeed, in an ideal education there should only be one culture but many different ways of knowing and of acquiring knowledge. As we, as individuals, become knowledgeable about these various realms of inquiry, our



# A Chorus Line somewhat wobbly

## A Chorus Line

A Baker House Production  
April 24-27

By BETTY J. MCLAUGHLIN

FOR A DORMITORY production, Baker House's *A Chorus Line* was very well done. Although not as precise in some places as it might have been, the musical still provided worthwhile entertainment.

The script concentrates on the conflict that chorus line members face between their own desires to be unique stars and the production's need for faceless unity among them all. Baker House portrayed this conflict well, as the dancers, during the audition that forms the basis of the show, are at times allowed to be individuals and at others must fit themselves into the group style.

The performers did a fine job of showing how the characters learn to dampen their egos as the audition progresses. This transition showed itself as the characters all compete for attention in the first dance, melt together into the background in the fight scene between Cassie and the casting director, and finally blend into step rather well in the final number.

The musical is filled with fine characters, all of who deserve to be treated at greater length than the brief glimpses we catch of

each. But that is the point of *A Chorus Line*: to make us realize that beneath every member of the group is an individual, although each person must not allow himself to stand out in the show. The acting in this production was for the most part very good — almost good enough to make one forget the occasional note-clashes in the singing.

The actors each get a moment of self-confession before the director, who is hidden in the darkness behind the glaring spotlight. The outstanding singing monologues were performed by Richie (Matthew Kaplan '87), who punctuated his with an energetic, skillful dance routine; Shiela (Susan Rowell '87), old and slightly jaded with a surprisingly sweet singing voice;

Maggie (Rina Cerulli '86), a Puerto Rican girl from the Bronx who covers her vulnerable exterior with good looks and a lot of attitude; and Paul (Marc Light '88), a painfully shy former drag queen with a low self-image.

A sub-plot involves Cassie (Cynthia Millington '86), a dancer who couldn't make it in Hollywood and wants to return to the chorus; and Zach (Ben DeSousa '89), the director who used to live with her and tried to help her get started. Their arguments are well-written, but a little boring in execution — I preferred to watch the chorus as they slowly fell into shape in the background.

The singing left a little to be desired, although it does have some good moments.

As a group, they are magnificently strong, if not always entirely on key, and the parts were well-integrated. The best vocalists were Rowell; Millington, whose voice was extremely powerful; Kaplan, who also had power and fantastic versatility; and Cerulli, who allowed some excellent emotion to creep into her voice.

The dancing was adequate, but there was method to their imprecision in some cases as some of the dancers are intentionally not as good as they can be. Outstanding dancers again include Kaplan and Maggie, who did a fluid, energetic number under a red spotlight while dressed dramatically in red.

## Chorallaries and Logs leave audience smiling

### SPRING SING

MIT Chorallaries and Logarithms.  
April 25, 10-250.

By RONALD E. BECKER

IT seemed quite appropriate to walk into 10-250 about 40 minutes late; unfortunately this time it wasn't a lecture that I was missing. Rather, I missed the majority of the University of New Hampshire Notables' performance. What I did hear made me wish that I had arrived on time, but that is all I can really say.

The Logarithms performed after the Notables. Their performance had a theme: "Barbershop," also the title of their opening song. Their singing is very good. But some of their songs were shorter than their jokes. Most of the concert's time was spent in the telling of long jokes. Now, I enjoy a good pun as much as the next per-

son, but one or two a night is my limit.

The songs that the Logs sang were of the usual high quality. The two standards were "Baby Face" and the "Technology Song." The interpretation of "Chatanooga Choo-Choo" was the stand-out newer piece. A train of Logs provided visual and sound effects to backup the soloist.

While the music was great, there just wasn't enough of it. I wish I could have heard more singing and less talking from this fantastic *a cappella* group.

THE CHORALLARIES, as if in backlash from the "Concert in Bad Taste," dressed as if off to a quasicentennial ball (or something like that). Their splendid dress was matched by their witty and melodious entertainment.

Songs were separated by "breaks" where the Chorallaries did something silly (for a moment). The first "break" was an im-

promptu "hokey-pokey" another was the "eagle" (Imagine a dozen well-dressed MIT students standing on one leg with the other leg twisted around while holding their noses).

Despite the frequency of performance of "Boogie-Woogie Bugle Boy" by a *cappella* groups, one never hears the same interpretation twice. The Chorallaries performed this classic admirably. A more original piece was "Second-hand Rose," which really showed off the Chorallaries' talents.

The centerpiece of the concert was the wierdest skit I have heard in a long time. The fates the Chorallaries conjured up for the Brady Bunch belonged more appropriately in the "Concert in Bad Taste." Cindy has turned to prostitution (Bobby's the pimp). Peter's a druggie. Alice is a Bible-thumping reformer, and the dog has AIDS.

We all left smiling.

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## Undergraduate Association News

**SENIORS!** Don't miss the Great Balloon Drop!  
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claim your prize at the Junior/Senior Pub

### ★★ATTENTION ALL STUDENTS★★

Coming Thursday, May 1:

### Engineering Undergraduate Education Lunch Tables

informal student-faculty discussion of education at MIT

Daily, Mon-Fri 12-2pm Walker Memorial & Lobdell

Sponsored by the MIT Commission on Engineering Undergraduate Education

### Class of 1989 News

The Class of '89 needs six students for the Ring Committee to design the class ring. Interested students must come to the next class meeting on Friday, May 2 at 4pm in the UA office and give a one-minute statement explaining why they are interested in the position.

### CARE Drive

TCA will be collecting for CARE April 30 - May 2 in Lobby 10. A \$5 donation entitles you to a lovely CARE Mother's Day card. Please give whatever you can. Thank you.

### TOSCANINI'S ICE CREAM!

Enter your dorm or fraternity in the **Walk for Hunger** Contest. Call Ravi Bopanna (3-5971 or 5-9793) for details.

The course evaluation guide needs help with our spring evaluation. This is our first try at a large scale evaluation and we could use a few extra hands. If you have an hour, drop by the UA office around 1:00 on Saturday. The work will be mindless fun, we'll have goodies to eat, and your support could really help us out.

thank you

Want to vote this fall? Register during the International Fair Friday, the Carnival Saturday, or the IFC Olympiad Sunday.

### APPROPRIATE TECHNOLOGY: What Happened?

Tuesday, April 29, 9-150 5:30-9:00pm

Sponsored by the Technology for Development Group of MIT Student Pugwash, the Undergraduate Association, MIT Hunger Action Group, and the Technology and Culture Seminar.

# Viola eludes originality

Not the Only One

Mike Viola  
an EP on RPM records

By ADAM RYSSDAL

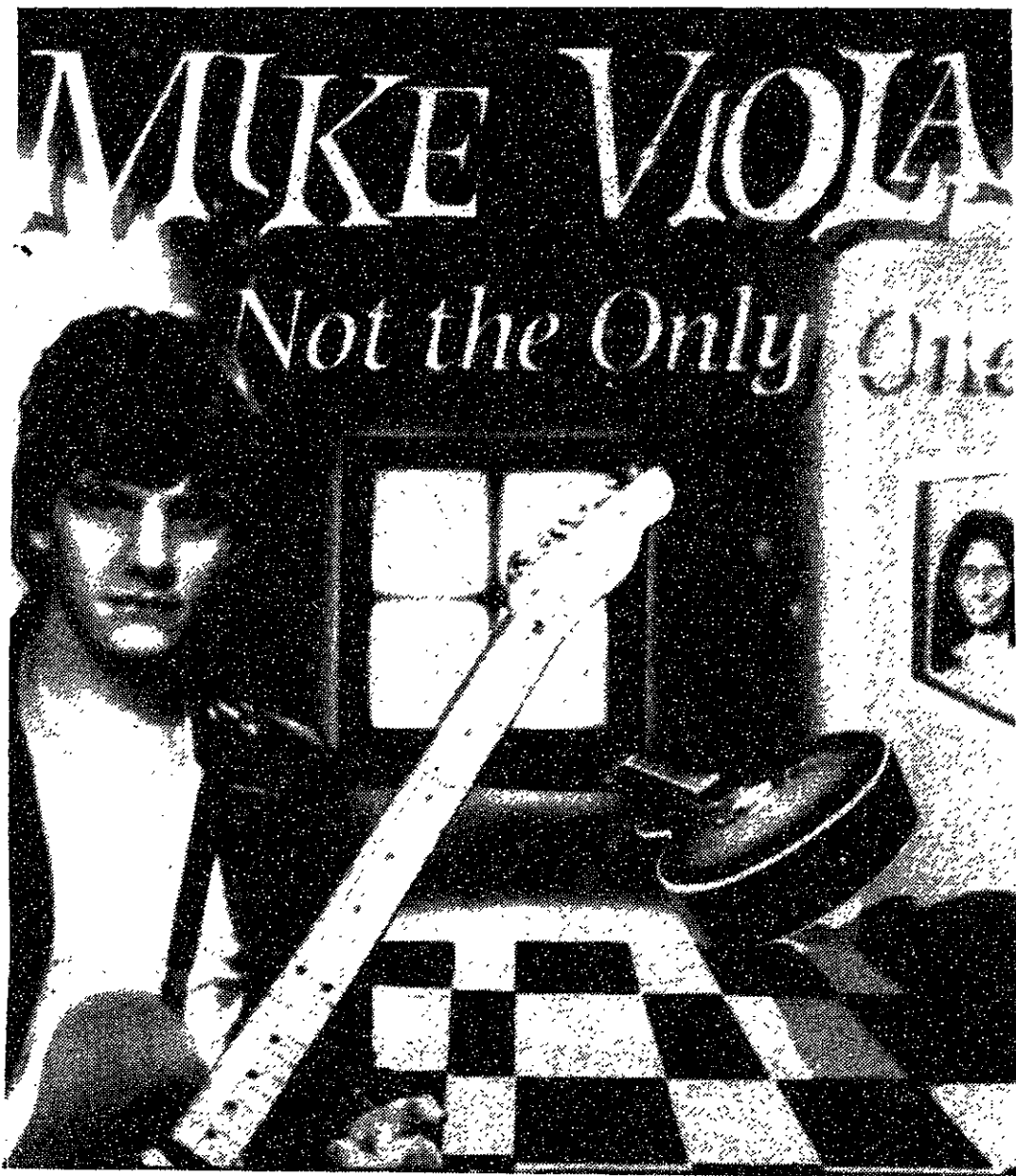
**M**IKE VIOLA WISHES he was Corey Hart. Or maybe Bryan Adams. But he's not, and probably never will be. He's just too sappy. This four-song EP is sappy. The lyrics are sappy, the music is sappy, everything is sappy. Even the cover is sappy.

The press release for *Not the Only One* describes his music as "straight-ahead pop-rock 'n roll." That's a pretty generic description, well-suited for this generic

music. Viola (guitar and vocals) and his two cohorts Ward Clifford (bass) and Todd Foulsham (drums) just never manage to get off the ground. Their music wanders around in a poor imitation of top-40 radio hits.

Viola is young, so there might be a chance for him to realize the error of his ways before he is added to the pile of top-40 rejects. I wouldn't count on it, though. He seems committed to the fine commercial art of duplicating this people-listen-to-it-and-they-play-it-a-lot-on-the-radio type of music.

You'll probably be able to find this EP in the 10-records-for-a-dollar grab bags at Nuggets in a few months, but don't look for it.



## The Tech Performing Arts Series presents...

### BOSTON MUSEUM TRIO

#### Music from the French Baroque

The Museum of Fine Arts' resident trio, the Boston Museum Trio — Daniel Steptner, baroque violin, John Gibbons, harpsichord, and Laura Jeppesen, viola da gamba — present a program of music from the French baroque with tenor **Frank Kelly**. Museum of Fine Arts, Remis Auditorium. May 4 at 3pm. **MIT price: \$6.**

### METROPOLITAN OPERA

#### Tosca

Starring Grace Bumbry as Tosca, with Lando Bartolini as Cavaradossi and Cornell MacNeil as Scarpia. Conducted by Christian Badea. Wang Center, May 5 at 8pm. **MIT price: \$8.**

#### L'Italiana in Algeri

The cast for Rossini's comedy will include Gail Dubinbaum, Betsy Norden and Douglas Ahlstedt. William Vendice will conduct. Wang Center, May 7 at 8pm. **MIT price: \$8.**

#### Roméo et Juliette

Gounod's *Roméo et Juliette* will close the Met season in Boston. Conducted by John Mauceri, the cast includes Gail Robinson, Hilda Harris, Denés Gulyás and Paul Plishka. Wang Center, May 10 at 8pm. **MIT price: \$8**

*Tickets will be sold by the Technology Community Association, W20-450 in the Student Center. As opening hours are currently a bit sporadic, please call before you come. If nobody is in, please leave your order and your phone number on the TCA answering machine at 253-4885. You will be called back as soon as possible. Reservations will be held until three days before each performance.*

### SUMMER SOFTBALL LEAGUE

Interested in umpiring or entering a team? Contact Peter Vedder, 37-618, x7405 (messages 494-0308) and come to the organizational meeting, Thursday, May 8th, 5:30 pm, West Lounge, Student Center.

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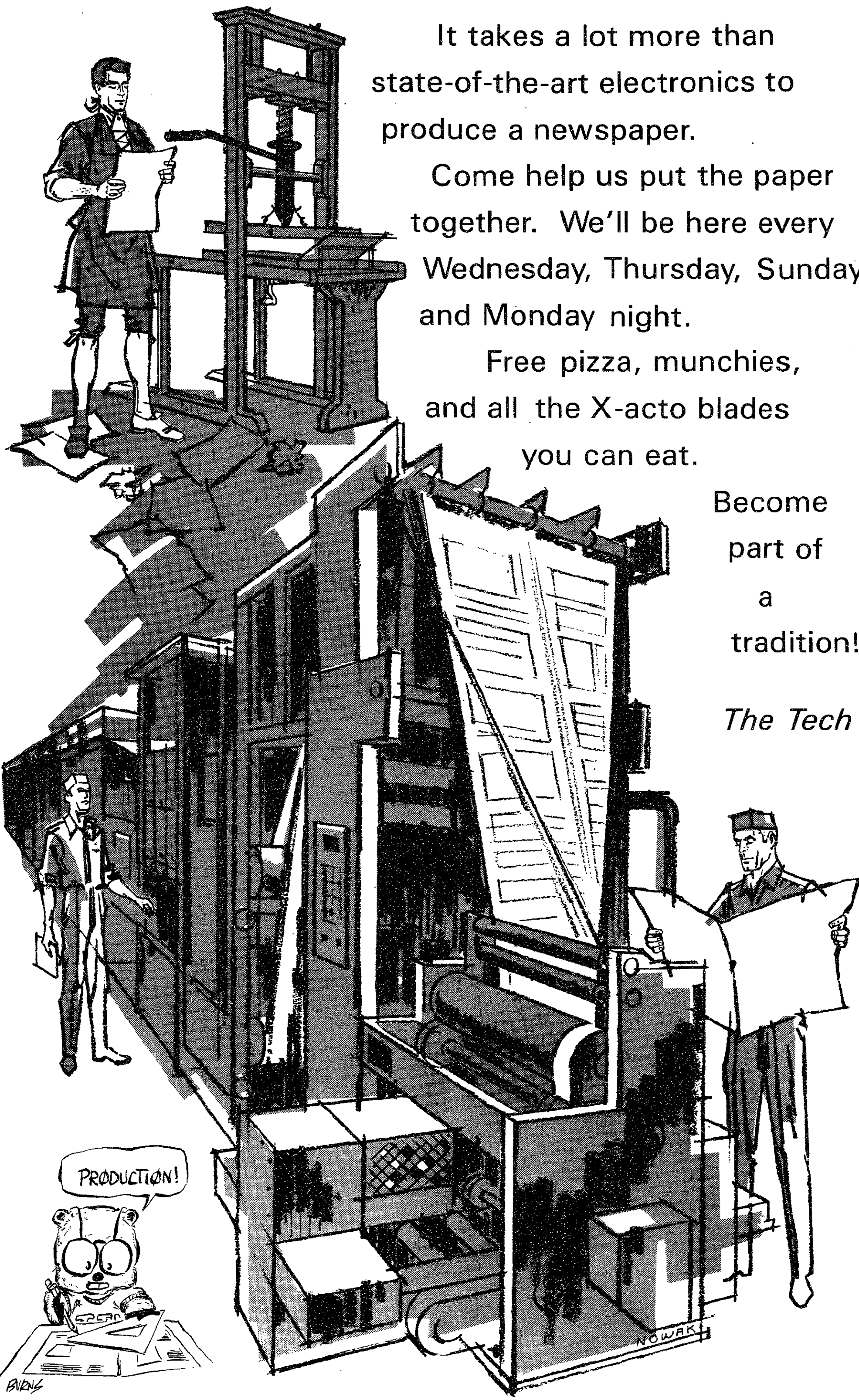
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*The Tech*



Tech photo by David M. Watson  
Paul E. Gray '54 spoke to the Graduate Student Council Friday concerning the construction of a new graduate dormitory.

## Gray speaks with graduates

(Continued from page 1)

steady increase in enrollments, averaging one percent per semester, he estimated.

In the 1970's, each department had a limit on the number of graduate students it could accept, he said. But MIT changed this policy in the 1970's because administrators decided that growth was occurring only because it had support.

"The graduate student population should not grow by too much more," Gray said. "The interests of the Institute would not be served by more growth."

GSC member Stuart B. Brown asked Gray why MIT has considerably more undergraduate administrators than graduate administrators.

Graduate students have enough

administrators to look after their needs, Gray replied. Although MIT only has a part-time dean of the graduate school, it also employs two full-time administrators in the graduate school.

Gray added that the Office of the Dean for Student Affairs (ODSA) looks after the needs of both graduate and undergraduate students, and cautioned against creating "separate advising groups for graduates and undergraduates."

Rene J. LeClaire G said, however, that graduate students seldom go to the "established channels," such as the dean of the Graduate School, for advice on administrative matters.

"When graduate students need help, they either go to other graduate students or to no one at all," LeClaire explained.

Jonathan Richmond G pointed out that graduate students in some of MIT's less "marketable" departments have difficulty finding funding but are still charged full-tuition.

Richmond asked whether the Institute could find some way to ease the tuition policy for graduate students in such departments, especially those who have who have already passed general examinations and are only doing thesis research.

Gray acknowledged the disparity of funding between engineering and science departments compared to the social sciences. There is no way MIT can establish a system of reduced tuition for students in social science departments without hurting MIT's finances, Gray argued.

## BU refuses to allow shanty construction

(Continued from page 1)

campus ministry called for a day-long, campus-wide fast, the activists decided to end their hunger strike, she explained.

The response of the administration has been to ignore the SATF, Friedlaender said. "They are not taking us seriously," she said. BU President John Silber has refused to meet with representatives of SATF, although an advisory committee to the Board of Trustees has agreed to talk with the protesters later this week, she added.

The BU administration has decided not to divest itself from the stocks of corporations that do business in South Africa. They argued that the stocks would be sold to others, and divestment would have no real effect on companies, Lang said. Some administration figures have said divestment is immoral, he said. Administration officials have also cited lack of student support for the protests as a reason to keep South African stock, Lang added.

## Protesters complain about CP videotaping of demonstrations

(Continued from page 1)

without admitting that there was sufficient evidence to find them guilty, he explained. In addition, the two would only be fined \$72, rather than the \$89 assessed the six who already accepted a continuance. No decision is required until the trial date.

The cases of the two students will be tried on May 8, Contreras said; he and Kolodney will be given a trial by judge, with the option to appeal if dissatisfied with the outcome, he explained.

The tape would not help Kolodney in his defense, he said, because the activities for a minute or so before his arrest were missing. "It seemed that the camera was running only at selected intervals," Kolodney continued.

Contreras said his defense will be a political one. It will rest on the fact that he "had to do it for political reasons," he explained. Students arrested for trespassing during demonstrations at Draper Labs in the 1970's used a similar argument, which the judge in that case rejected, Contreras said.

The Coalition released a flyer

in which they accused the MIT administration of "secretly filming campus protests. . . . The purpose of such undercover filming can only be to facilitate blacklisting."

All videotapes made by the Campus Police of on-campus political activity should be made public, the flyer demanded. Also, the Coalition insisted that "all such surveillance be halted immediately."

Chief of Campus Police James Olivieri refused to comment on the videotaping. The Coalition sent a letter to Gray expressing their concerns about the videotaping [see "Tapes could be used to blacklist students," page 5].

"There will be an official response" from the administration to the letter, Olivieri said.

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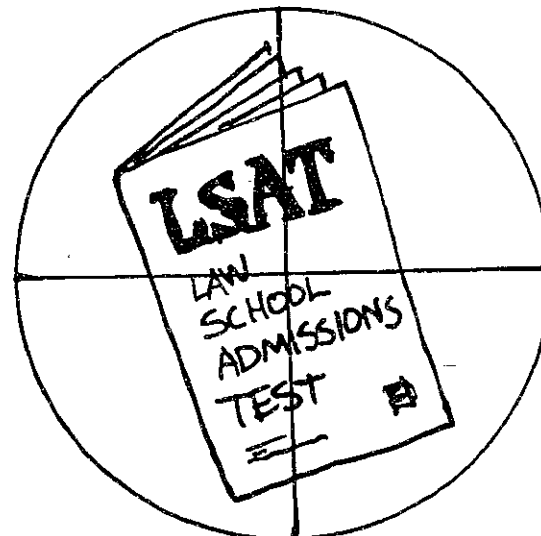
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Barbara Beatty  
Assistant Professor of Education, Wellesley College

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# sports

## Wild Turkeys capture Cambridge softball title

Special to The Tech

On the killing fields of softball, the grass was wet, a case of beer was home plate, and fallen aluminum bats were as cold as ice. But things would soon heat up.

"These guys lost to us 23-2 last year," said one Harvard reporter to another before the game started.

23-2. Last year, the *Tech* chairman struck out in the last inning, but the game had been over long before that. It was a game to forget, to drown in beer, to sweep beneath the covers.

But the *Tech* Wild Turkey slowpitch softball team remembered. And in the end, *The Tech* retrieved its lost honor on the field of battle last Saturday, defeating the *Harvard Crimson* 5-4 at Soldiers Field.

The Turkeys came from four behind to stun the Ivy crawlers. To atone for last year's infamous exposition, *The Tech* came to the game sober. Leaving the game was a different matter entirely.

"We're on a mission from God," said Sidhu "Spiderman" Banerjee '87 (LF).

"Actually, we're on a mission from His Divine Grace A.C. Bhaktivedanta Swami Prabhupada, who has written more than 60 volumes of authoritative translations, commentaries and sundry studies of the philosophical and religious classics of India," said Harold "The Man with no Nickname" Stern '87 (P,2B). "Try to top that."

"That would be hard to do," said Earl "The Pearl" Yen '88 (1B). "God's only written one book."

"Shut up and get back to softball," said David "Elementary, my dear" Watson '88 (SS,SF). "I don't want to hear this religious drivel." But later in the game, he stopped a line drive with his groin and discovered God.

"I killed two birds with one stone," he whispered. Watson is now planning to become a monk.

The *Crimson* strutted its stuff early, punching in four runs by the fourth inning. It looked as if last year's game was happening all over again, as Harvard's power-hitting overwhelmed the Turkey defense. But Harvard's guns exploded prematurely.

The game developed into a pitching duel almost immediately. *Tech* pitcher Stern belted a line drive off the *Crimson* pitcher's shin in the top of the first. The pitcher, known only as Art, responded with several low pitches which hit the plate, which was *The Tech's* case of beer.

Stern was helped out by late-

inning relief from Ronald "Dr. K" Becker '87 (C,P) who recorded the game's only strikeout. The crimson-faced *Crimson* batter left the scene to kill himself before a positive identification could be made.

Becker said, "Gee, I'm getting pretty good at this. When do I get to kick the extra point?"

Led by Most Valuable Player Jerry "I play better after five Buds" Broda '87 (3B), *The Tech* roared back from early problems with two runs in the fifth and three in the top of the sixth.

Broda was able to vacuum pop flies and scoop up infield grounders, constantly connecting with first baseman Yen, who was a veritable Venus fly-trap.

MVP Broda was awarded a set of stainless steel Ginzu knives (not sold in any store), gardening tools, scuba-diving equipment, and other assorted toiletries and party favors. Furthermore, a \$1000 donation will be presented in his name to the guys who stop students at 77 Massachusetts Avenue ["Excuse me, sir... Yes, you, the gentleman in the polka dot jersey..."].

Ben "Sting" Stanger '88 (2B,SS,SF) — with the first base hit of his career — belted the game-winning RBI, and gained instant fame. Boston gave him a ticker-tape parade, New York City gave him the key to the city, and Hollywood gave him a special guest appearance on "Diffrrent Strokes" as a family friend (called "The Worm") who touches Arnold where he doesn't want to be touched.

No further runs were scored by either team.

Michael "Phantom" Garrison '88 (CF) started out slowly, as his golden glove turned to lead. He charged in for several fly balls that ended up rocketing over his head for extra bases. After con-



Tech photo by Barbara Masi

Tech photographer and third baseman Jerry Broda '89, the game's most valuable player, goes to catch a popup in Saturday's game with the *Harvard Crimson*.

structive criticism from Andrew "Squish the" Fish '89 (RF) ["Get the #@\*! back, loser!"], Garrison redeemed himself and snagged several rally-ending catches.

"MIT, out of Soldiers Field," some protesters chanted, according to Fish.

The Real Bad Alison "Carmen" Morgan '89 (SF) put on an impressive display at the bat before managing to gain control of herself. She was three-for-three from the line.

Manager Barbara "Billy Martin" Masi G made a daring pinch-run attempt, foiled by a cleverly concealed brick wall in front of second base, while owner Shari "Steinbrenner" Jackson '88 was awarded the honorary Pulitzer Prize for the only photograph ever taken of Fish complimenting someone.

When Becker, who pitched five scoreless innings, began to lose control in the ninth, catcher Thomas "Marathon Man" Huang '86 (C, spiritual leader) walked up to the mound in 5:58 and said, "The German poet Rainer Maria Rilke once espoused:

"Be patient toward all that is unsolved in your heart and try to love the questions themselves."

Harvard had a good chance to score in the final inning, but it was squelched by Stern, who turned an unassisted double play off a line drive to second. Observers speculated that Stern dropped a double play ball earlier in the inning because he refused to share the credit with Broda.

The victorious Turkeys had nothing but compliments for their Ivy-League opponents, and their journalistic integrity. Brooke A. Masters H '89 chastised *The Tech* for running a "sad" story on its annual game with the *Crimson*. The editorial staff thanked Masters for her insight, and will be sure to use her as a source for any future coverage of Cambridge Rindge and Latin fifth grade dances [see *The Harvard Crimson*, April 19].

"We went to hell and back," said the muddled Banerjee after the game.

"And now it's back to God-head," said Stern.

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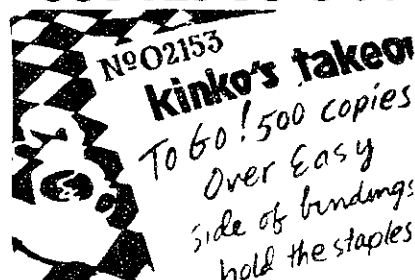
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# sports

## Lightweight frosh win regatta

By William Hou

The first freshmen lightweight crew was the only squad among the MIT crews to claim victory April 19. The lightweight squad raced Columbia and Cornell on the Charles River, while the heavyweight squad battled Princeton and Harvard, the top ranked collegiate crew in the country, at Princeton.

The first freshmen's victory was the team's first official win this season. Because of the unusually rough and windy river conditions, all lightweight races began at 7 am, about three hours before the scheduled starts.

The freshmen lightweight race was close from start to finish. MIT jumped to a slim lead at the outset. However, poor steering by all three crews caused difficulty in determining which boat was

ahead during the race. All three crews crossed the finish line within two seconds of each other.

The MIT frosh emerged victorious with a time of 6:29.1. Columbia took second with a time of 6:31.1, and Cornell finished third with 6:31.2.

"We had tough practices before the race," said Ken Goodson '89. "We hope to build on last weekend's performance and keep improving for the Sprints next month." The Eastern Sprints Regatta is the largest spring race for lightweight crews in the US.

The varsity lightweight eight rowed with a strategy similar to their winning race against Coast Guard the previous week. MIT rowed the first 1000 meters of the race at 32 strokes per minute, five strokes per minute slower than Cornell. MIT was never more

than two seats down.

At the 1000-meter mark MIT pulled even with Cornell and was one boat length ahead of Columbia. But MIT lacked the spark it had a week earlier, and the last 1000 meters belonged to Cornell.

The varsity lightweights finished the 2000-meter race in 6:19.1. Cornell finished in 6:15.4, about a boat length ahead, and Columbia in 6:17.4, about half a boat length ahead of MIT.

The lightweights raced again over the weekend against a fast Rutgers crew in Mercer County, New Jersey.

Harvard dominated the heavyweight races and easily defeated both Princeton and MIT. The heavyweights traveled to Syracuse on Sunday.

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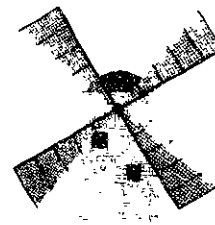
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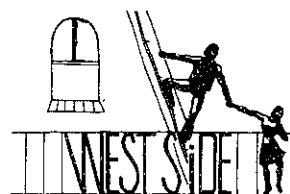
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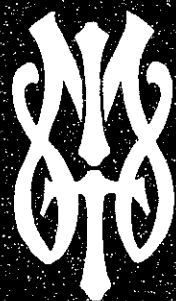
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