

MIT's
Oldest and Largest
Newspaper



The Weather

Today: Sunny, cool, 70°F (21°C)
Tonight: Increasing clouds, 57°F (14°C)
Tomorrow: Cloudy, 70°F (21°C)
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Volume 115, Number 27

Cambridge, Massachusetts 02139

Friday, June 9, 1995

Committee Nixes Bates Accelerator Funding

By Jeremy Hylton
TECHNOLOGY DIRECTOR

In a move that has shocked researchers and administrators alike, a House subcommittee yesterday approved a plan that would eliminate funding for MIT's Bates Linear Accelerator and four other nuclear physics particle accelerators next year.

"It will have a devastating impact and we think it is totally undeserving," said Professor Robert P. Redwine, head of the Laboratory for Nuclear Science, which runs Bates. The cut "is not based on a

real understanding of what goes on at these labs," he said.

The speed with which the budget mark was passed surprised MIT officials. The preliminary markup, released Tuesday, was approved yesterday. The markup eliminates the \$18.6 million the Clinton administration had requested for Bates, as well as funding for four other accelerator programs across the country.

Located in Middleton, Mass., Bates employs 122 and is used by six MIT professors, several senior research scientists, and 22 graduate students. Researchers from across

the country, including 30 graduate students from other schools, also use the Bates facility.

Two last-minute amendments to the budget proposal failed yesterday on a pair of 12-12 votes. The amendments were introduced by Rep. John W. Olver, a Massachusetts Democrat, and Rep. Vernon J. Ehlers, a Michigan Republican and a Berkeley-educated physicist.

"These facilities are not only vital for the training of students, but also conduct important research," Ehlers said.

Spokesmen from MIT and the

Massachusetts Congressional delegation were hopeful that funding would be restored by the full House Science committee. MIT spokesman Kenneth D. Campbell noted that Rep. Robert S. Walker (R-Pa.), chair of the House Science Committee, voted for the amendment.

Leslie Lillard, Olver's press secretary, acknowledged that it would be more difficult to restore funding after the subcommittee approved the cuts.

The Bates accelerator is a Department of Energy laboratory operated by MIT. The facility is a

medium-energy electron accelerator. "The electrons are used to do precise experiments studying the structure of nuclei and protons and neutrons," Redwine said.

A recent upgrade added a stretch-storage ring to the end of the linear accelerator. "This will allow unique experiments in this important research area," Redwine said. Bates also has the world's highest resolution energy loss spectrometer for measuring particle energy.

Along with Bates, four other

Bates, Page 24

Moses Named New Provost

By Daniel C. Stevenson
EDITOR IN CHIEF

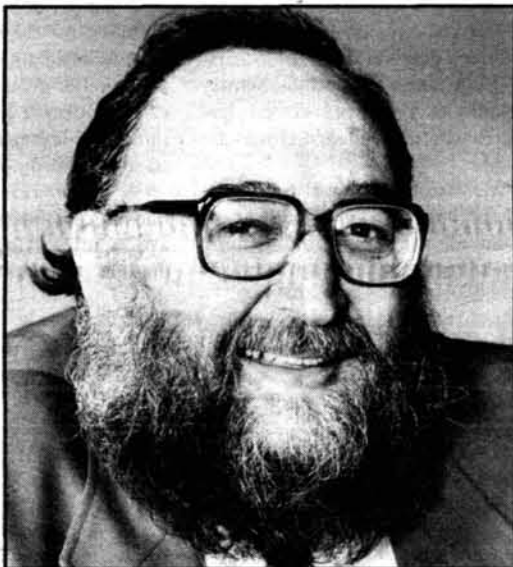
Dean of the School of Engineering Joel Moses PhD '67 was confirmed as the Institute's next provost by the Corporation Executive Committee last night. President Charles M. Vest announced Tuesday afternoon his intention to nominate Moses to the position.

Moses succeeds Mark S. Wrighton, who is stepping down today to become the chancellor of Washington University in St. Louis.

The appointment fills the first of several gaps in the senior administration, which include the dean for undergraduate education and student affairs, dean of the graduate school, and associate provost of the arts. However, "no other positions will be announced until further into the summer," Vest said.

Moses "will be the next in a line of distinguished scientists and engineers who have served superbly in this important position," said Vest. His "deep knowledge of MIT, varied educational background, eclectic intellectual interests, respect for faculty culture, and thoughtful understanding of the current forces for change will make him an outstanding institutional leader for our times."

Moses brings a broad educational background and successful computer science and engineering career to the position. "For me, the magic lies in the endless opportunities to work with and to come to know individuals of the highest caliber across all the disciplines and ranks," Moses said.



Joel Moses

In the 1940s, Vannevar Bush '16 promoted "the vision of federal support for university research and, implicitly, for the education of undergraduate and graduate students for the good of the country," said Moses. "That compact is now being questioned."

Provost, Page 24

Congressional Cuts Hit Student Loans

By Sarah Y. Keightley
and Jeremy Hylton
STAFF REPORTERS

As the Republican-controlled Congress moves to balance the budget by 2002, it is proposing broad cuts in all areas of domestic spending, many of which will have a serious impact on MIT and the nation's higher education system.

A resolution passed late last month by the House of Representatives proposes to eliminate the Departments of Energy, Education, and Commerce as well as the in-school interest exemption for government student loans. By contrast, the Senate version eliminates only one department — commerce — and would eliminate only the interest subsidy for graduate and professional students.

In addition to abolishing the three departments, the House bill would lower funding for civilian science research in the House budget from about \$32 billion last year to \$24 billion in 2000, a cut that

translates to a total reduction of about \$24 billion over the four years.

The House and Senate budgets will be reconciled over the summer, and a final bill will probably be voted on by both houses of Congress in September.

Professor J. David Litster PhD '65, vice president and dean for research, cautioned that while the cuts would be serious if implemented, the budget was still far from being approved.

"What finally counts is what the appropriation committees appropriate, what the Senate passes, what emerges from the House-Senate conference, and what the president signs," he said. "It will be a long summer."

By way of explanation, Republicans say the cuts, which take aim at programs ranging from weather satellites to nuclear fusion programs, target waste and backing of corporations rather than basic sci-

Loans, Page 10

1,794 Students to Graduate Today

By Amy I. Hsu
STAFF REPORTER

Today the well-kept grass of Killian Court will host MIT's 129th Commencement exercises, bringing together 1,794 graduates and an

estimated 8,000 relatives and guests.

A total of 2,026 degrees, 961 undergraduate and 1,065 advanced, will be awarded from the Institute's five schools and 21 academic departments.

Hanna H. Gray, president emerita of the University of Chicago, will deliver the main Commencement address. President Charles M. Vest will give the charge to the graduates, and MIT Corporation Chairman Paul E. Gray '54 will preside over the ceremonies.

Exercises begin at 9:45 a.m. with the traditional academic procession from 77 Massachusetts Ave. to Killian Court. Students will begin the procession at the Johnson Athletic Center, where they will line up by degree and department. They will be led in the march to Killian by Chief Marshall R. Gary Schweickhardt SM '73, president of the MIT

Commencement, Page 24



Alex Jun, 3, takes to the air while playing in the inflated dinosaur at last weekend's community fair behind Kresge Auditorium.

INSIDE

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WORLD & NATION

Christopher Says Israel-Syria Talks Enter 'New Phase'

THE WASHINGTON POST

JERUSALEM

Secretary of State Warren Christopher arrived here Thursday on his 13th Middle East shuttle mission amid signs of movement in the long moribund talks between Syria and Israel.

There has been a striking change in tone by both governments in recent days, enough so that the habitually cautious Christopher allowed himself to declare the opening of a "new phase" between the historic foes and "a moment of real momentum in the peace process."

Nearly every day since late last month, a top Israeli government figure has broken new ground in intimating Israel's willingness to give up the Golan Heights, the strategic plateau conquered from Syria in the 1967 Middle East war. The characteristically harsh Syrian press, for its part, has welcomed the Israeli remarks and praised the American mediating role.

In Thursday's editions of the Syrian newspaper Al Baath, which conforms precisely to the government line, editor Turki Sakr wrote of the "positive expectations drawn from the American sponsor's engagement," adding that they had made "brighter the prospects of the breakthrough that the intensified American efforts are meant to achieve."

'Tax Cut' Issue Hangs Over Hill Budget Talks

THE WASHINGTON POST

WASHINGTON

As congressional negotiators formally began talks Thursday in search of a compromise budget plan, House Republicans voted overwhelmingly to reaffirm their support of a \$354 billion tax cut and a dozen influential Senate Republicans vowed to oppose any plan that includes a major tax cut.

Thirty-one Republican and Democratic House and Senate conferees held what is likely to be their only public meeting before GOP leaders hammer out a compromise behind closed doors.

While Senate Budget Committee Chairman Pete V. Domenici, R-N.M., and House Budget Committee Chairman John R. Kasich, R-Ohio, had little to say about taxes in their opening remarks, a growing rift between conservative and moderate Republicans over taxes has greatly complicated prospects for reaching a settlement.

The House-passed GOP resolution calls for a \$354 billion tax cut, including a \$500-a-child tax credit and a sharp reduction in the capital gains tax, while the Senate version contains no specific tax cuts, only the promise of \$170 billion in tax relief down the road provided Congress succeeds in adopting a budget certified by the Congressional Budget Office to eliminate the deficit.

Justice Department Again Scrutinizing Microsoft

THE WASHINGTON POST

WASHINGTON

The Justice Department's antitrust division is looking into how an electronic network that Microsoft Corp. plans to launch in August might affect the on-line industry.

America Online in Vienna, CompuServe and Prodigy, the country's three leading commercial on-line services, received requests for information from the Justice Department earlier this week, company representatives said. The Justice Department asked the companies to respond on an unusually tight deadline: ideally, by Friday.

"We have a lot of this information assembled," said Kent Stuckey, general counsel for CompuServe. "The request is actually a continuation of a dialogue that had been going on for some time. I expect we could respond pretty promptly," he added.

This is the third time the Justice Department has looked at the business practices of Microsoft, the world's largest personal computer software company.

Last summer, after an almost five-year government investigation, Microsoft agreed to change how it licenses its DOS and Windows "operating system" software. That settlement has yet to be approved by a judge. In April, the department filed suit against Microsoft's plans to acquire Intuit Inc., the country's biggest provider of personal finance software, causing Microsoft to drop the deal.

Yesterday the department would not confirm the precise nature of its inquiry into the network. "We're looking at the possibility of anti-competitive practices in the computer software industry," said Gina Talamona, a spokeswoman for the department.

Greg Shaw, a spokesman for Microsoft, said the company couldn't comment on whether there was an investigation going on. Even so, he added, "It's not any secret that several of our competitors are lobbying the Justice Department to look at the Microsoft Network."

WEATHER Clearing and cooler

By Michael C. Morgan
STAFF METEOROLOGIST

A persistent easterly flow will keep low clouds, drizzle, and fog flirting with the coasts of southern New England today. As a ridge of high pressure builds in from the northwest, skies will begin to clear. An approaching disturbance from the west threatens to bring clouds and shower over the weekend.

Today: Becoming mostly sunny and cool. Highs near 70°F (21°C). Winds east 7-13 mph (11-21 kph).

Tonight: Clear early then increasing clouds. Low 57°F (14°C).

Saturday: Cloudy with a few showers. High near 70°F (21°C). Low around 60°F (16°C).

Rescue of Downed Pilot Gives Allies Momentum

By Paul Richter
and Art Pine
LOS ANGELES TIMES

WASHINGTON

America rejoiced Thursday at the rescue of a downed F-16 pilot from a rebel Serb-encircled hillside in Bosnia-Herzegovina as Western defense ministers gave the allied effort in the Balkans war new momentum by endorsing the creation of a multinational rapid-reaction force to protect embattled U.N. peacekeepers.

Capt. Scott F. O'Grady was hailed by President Clinton as "a true American hero," after a 40-aircraft mission eluded Bosnian Serb fire to rescue O'Grady from the fogbound forest near where his F-16 was shot down six days earlier.

Military aides described how O'Grady, 29, hid by day and traveled by night through the wind-swept forest, trying to contact NATO forces and subsisting on a diet of rations, insects and grass.

His plane, on a NATO patrol over a "no-fly" zone, was brought down by a Bosnian Serb-fired SAM-6 missile last week after earlier allied air strikes on the rebel Serb-controlled city of Pale raised tensions in the region.

After six days of trying to read sometimes-hopeful, sometimes-discouraging signs of his fate, family members and military colleagues exulted when they learned that he was safe.

"We are so grateful and so thankful," said an emotional Mary Lou Scardapone, his mother, after she and other family members

spoke by telephone to the pilot, who was aboard the amphibious assault ship Kearsarge, where he was being treated for hypothermia, exposure and a burn.

For the White House, lately besieged by attacks on its Bosnia policy, O'Grady's rescue was a tonic. His return laid to rest Clinton's private fears that the pilot was captured by Bosnian Serb forces, held hostage and would be paraded before television cameras in the kind of political drama that helped undo Jimmy Carter's presidency.

In other developments Thursday: —NATO defense ministers formally endorsed a British-French plan for a 10,000-member force capable of protecting United Nations peacekeepers from military threat.

—The U.S. House of Representatives voted for a unilateral lifting of the arms embargo on Bosnia, amid continued sharp congressional criticism of the administration policy on the 3-year-old civil war. Embargo opponents have long argued that it most penalizes the Muslim-led Bosnian government and aids Bosnian Serbs, who, generally, have been better armed.

—Sniper and artillery fire rocked Sarajevo for the second consecutive day, as officials of several humanitarian relief groups met with leaders of the Bosnian Serb military forces in their Pale headquarters to discuss opening aid routes.

A newly released opinion poll had suggested that Clinton's job-approval rating was again in decline, after last week's publicity

about his apparent intentions — quickly denied — to broaden the potential use of U.S. ground troops in Bosnia.

Referring to Clinton as "the commander in chief," White House aides talked about bringing the rescued pilot to Washington for a welcome-home ceremony to try to catch a little reflected glory.

Those plans remained uncertain, however.

The White House scorned earlier claims by the Bosnian Serbs that they had been holding O'Grady. Those claims were "consistent with the outrageous behavior we have seen from the Serbs throughout the Bosnian conflict," said McCurry, adding that they were "obviously lying."

Although he shared some of the credit for the wildly successful rescue operation, the mission did not win Clinton any relief from congressional criticism of his Bosnian policy.

The House decision to lift the arms embargo against Bosnia came on a 318-99 vote on an amendment to a bill that would cut foreign aid and reorganize the State Department.

The administration has disregarded other, non-binding votes on raising the embargo, but its sponsors contended that this measure would be binding if it is also approved by the Senate.

Opponents have long argued that lifting the embargo would step up the fighting and force the administration to deliver on a promise to send in 25,000 troops to assist in a U.N. pullout from Bosnia.

Rescued Pilot Had Training, Gear to Survive for Days

By Dana Priest
THE WASHINGTON POST

WASHINGTON

Capt. Scott F. O'Grady fell from the sky with sophisticated military training in his head and a special "Evasion Chart" in his vest pocket.

Made of waterproof, tear-resistant lightweight material, the 3-foot-by-5-foot map of northwestern Bosnia doubled as a survivalist how-to manual.

Typed on the margins was advice that might have helped keep O'Grady alive during his six days on the ground, notably a list of local edible plants: wild onions, common dandelions, licorice root, nettle.

It even included cooking and do-it-yourself instructions. For nettle, "Eat the young leaves after boiling. Cooking neutralizes the plant toxins. Fibrous bark of the mature plants can be twisted and braided into a strong twine."

Basic to the Air Force's Survival, Evasion, Rescue, and Escape (SERE) training that had prepared O'Grady for this day, the "Evasion Chart" was itself also a piece of survival equipment.

It reminded him that "Other Uses For This Map" included: To catch rain for drinking water. For shade from wind and rain. To haul water or food. To line a hole or depression for storage. To wrap clothing. As an extra layer of clothes. To splint a broken wrist. To plug a chest wound.

But perhaps the most important thing he carried with him, said Lt. Col. John Chapman, Commander of the Joint Services Survival, Evasion, Rescue and Escape Agency, was the will to survive.

"It becomes a mind game," said Chapman. "You're only limited by your imagination."

As a SERE training school student, O'Grady had been left cold and hungry in the mountains of northeast Washington state, near his home in Spokane. During the three-week course he learned to eat black ants and grasshoppers (to be singled first to remove bacteria), to bounce the sun's rays off a mirror and back onto a target, to make tools from branches and shelter from earth.

He learned how to relieve boredom and keep his hopes up. He was taught "to think positive things," said Chapman. From the experience of former captives and lost airmen, O'Grady learned "to play entire rounds of golf and chess" in his mind.

"He learned his lessons well and then executed his lessons when it mattered most," Adm. William Owens, vice chairman of the joint chiefs of staff, said Thursday. He acknowledged that little was known yet about exactly what O'Grady did to survive after his F-16C was downed by Bosnian Serbs.

But it seemed likely that the two basic F-16 pilot survival kits helped O'Grady to get along on the ground, and to bring himself to the attention of rescue aircraft without being captured.

One kit was embedded in the seat of his F-16 and attached to a 30-foot rope. It contained a survival radio, a handgun, signal flares and mirror, a first aid kit and compass, whistle, water and distress radio beacon. The other kit, which he wore in his vest, had the battery-powered PRC-112A radio he is

known to have used to contact search teams flying overhead. In the vest were another distress beacon and signal mirror, a first aid kit and compass, as well as face paint and camouflage.

Detail are not yet known of what O'Grady did to try to make contact with the skyful of fighter jets and surveillance planes he must have known were flying overhead 24 hours a day with electronic monitoring equipment, radar and high-resolution aerial cameras.

The light, hand-held survival radio can be switched from a signal transmitter to a voice transmitter by the pilot. The voice transmitter is usually switched on only when a downed pilot can actually see a search or rescue plane.

O'Grady also carried in his vest kit a "Global Positioning System Receiver," a kind of a worldwide compass that allows him to know where he is. If the GPS remained functional after he landed, the information from it would have been vital to letting others locate him and carry out the kind of quick rescue operation that whisked him to safety as the sun was dawning Thursday morning.

Defense officials said U.S. pilots had been picking up what Owens described as "very random kinds of pieces of information" that could not be definitively tied to O'Grady most of this week. It was during this period that Air Force Chief of Staff Ronald Fogleman let it slip at a Pentagon ceremony that some signals were being picked up from the ground.

A day later Pentagon spokesman Kenneth Bacon insisted no signals were being received.

Clinton Friend Pleads Guilty To Misapplying Loan Funds

By Susan Schmidt
THE WASHINGTON POST

WASHINGTON

Whitewater independent counsel Kenneth W. Starr Thursday stepped up his prosecution of Arkansas Democratic Party figures who dipped into a local kitty of federally backed loans intended for disadvantaged people. Just a day after Gov. Jim Guy Tucker was indicted in connection with the loan program, Stephen Smith, a longtime associate of Tucker and President Clinton, pleaded guilty to misapplying loan funds.

Smith, who was one of Clinton's closest aides during the early years of his political career, agreed to cooperate with prosecutors looking into allegations that leading members of the state's "political family" used a capital venture firm backed by the Small Business Administration for personal and political ven-

tures. Smith pleaded guilty to a single misdemeanor conspiracy count.

Smith becomes the 11th person who has faced charges in an investigation that arose out of a land deal by Bill and Hillary Rodham Clinton and broadened into an examination of possible wrongdoing by various Arkansas political figures at financial institutions and federal agencies. The investigation's offshoots have led to legal trouble for the president's closest friends and political associates.

Smith's plea agreement said in early 1986 he and former S&L owner James B. McDougal submitted a phony loan proposal to Capital Management Services Inc., the SBA-backed firm owned by David Hale, a former Little Rock municipal judge and Democratic Party operative who has been cooperating in the Whitewater investigation since last year. CMS lent Smith's

political consulting firm \$65,000, ostensibly to hire a new marketing employee. The money actually was used to pay off a real estate loan incurred by the King's River Land Co., a corporation that included Smith, McDougal and Tucker, according to court papers.

Tucker will be arraigned next week on charges that he falsely obtained a separate \$300,000 loan from Hale's company and conspired to defraud the IRS of nearly \$2 million in taxes. Neither he nor McDougal were charged Thursday in connection with Smith's loan. McDougal has been notified he is a target of Starr's investigation.

"This misdemeanor disposition does not involve the Clintons in any way, nor does it relate to the Whitewater Development Co. The charge arises out of Mr. Smith's private business affairs," said Clinton lawyer David Kendall.

Three Men Arrested in Scheme to Export Nuclear Material to Iraq

By John J. Goldman
and William C. Rempel
LOS ANGELES TIMES

NEW YORK

Federal authorities arrested a former bank president and two companions Thursday on charges of attempting to illegally export nuclear-related materials to Iraq.

The investigation, in which U.S. Customs agents posed as arms merchants for Saddam Hussein, also resulted in the seizure here of five tons of zirconium, the largest confiscation of such materials in U.S. history.

U.S. law and U.N. resolutions prohibit all trade with Iraq except for humanitarian items and forbid any nuclear weapons development. Zirconium is critical to the operation of nuclear reactors.

All of the materials, Customs

agents said, originated in the Ukraine and may have been shipped with the backing of renegade former Soviet military officers or Russian organized crime.

"In the wake of the breakup of the Soviet Union, there have been concerns that nuclear weapon components produced there might fall into the hands of terrorists or rogue nations," said James Kallstrom, assistant director in charge of the FBI's New York field office.

"The potential result of their obtaining such material could only be described as catastrophic," Kallstrom said. "The possibility of the sale and diversion of nuclear material is too real."

The arrests resulted from an elaborate sting which lasted more than a year and even featured a U.S. agent posing as an Iraqi defense minister.

Indicted on charges of illegally attempting to export zirconium in violation of U.S. trade sanctions against Iraq was Demetrios Demetrios, 40, the owner of Inter-global Manufacturing Enterprises with offices in Greece, Moscow and New York, and two companions, Renos Kourtides, 55, and Constantine Zahariadis, 50.

Kourtides is a former president of the Marathon National Bank in New York City. Zahariadis, a Greek citizen, is in the export-import business, federal officials said.

The defendants allegedly also raised the possibility of selling plutonium or enriched uranium from the former Soviet Union. But they stressed purchases of these sensitive items would have to await completion of the zirconium transactions, authorities said.

Justics Department Refuses To Enter Gay Rights Case

THE WASHINGTON POST

WASHINGTON

With President Clinton's backing, Attorney General Janet Reno Thursday said the Justice Department will stay out of a major gay rights test case before the Supreme Court over Colorado's ban on extending discrimination laws to homosexuals.

Reno's decision, administration officials said, followed an extended and vigorous debate within the White House over whether entering the fight on behalf of gay rights advocates carried a political cost for Clinton. Reno said the Justice Department decided against entering the case because there was no federal issue at stake.

The decision infuriated gay rights activists, some of whom warned that Clinton risks losing a community that was an important fundraising ally when he ran for president in 1992 but has since turned disillusioned.

The attorney general told reporters at her weekly news conference that there was no reason for the Justice Department to intervene as a "friend of the court" in arguing against a Colorado constitutional amendment that bars state and local laws protecting gays from bias in employment, housing and public accommodations.

Senate Republicans May Consider Term Limits on Leaders

THE WASHINGTON POST

WASHINGTON

The leader of a Senate Republican task force that proposed rules to strengthen party discipline said Thursday additional changes may be made to include imposing term limits on Senate leaders as well as heads of committees.

Support for some kind of leadership term limits — similar to those imposed by the House on its speaker earlier this year — emerged during a closed-door meeting of GOP senators to begin discussion of the plan, which is aimed at enforcing more party unity and decreasing reliance on seniority as a way of choosing committee chairmen. The effort grew out of the furor last March over the refusal by Appropriations Committee Chairman Mark O. Hatfield, R-Ore., to support the balanced budget constitutional amendment and an abortive attempt by some conservatives to strip the veteran GOP moderate of his chairmanship.

Hatfield's critics succeeded in forcing appointment of the task force, whose recommendations to impose more discipline on committee chairmen nettled some of the long-serving moderates who head powerful committees, including Sen. John H. Chafee (R-I.), chairman of the Environment and Public Works Committee. At Thursday's meeting, Chafee focused on two specific proposals, which call for development of a legislative agenda at the start of every new Congress and seek to empower the Senate Republican leader to nominate a slate of committee chairmen for approval by all GOP senators.

"To force us all to walk in lockstep is bad for the party," especially in areas like southern New England, where it is difficult to elect Republican senators, Chafee told reporters after the meeting. Republicans like to talk about being "a big tent," but "this is jamming us into a pup tent," he complained.

Graduate Student Council

Funding Board requests for the summer term are due in the GSC office, 50-222, by 4 PM on Monday, June 12.

The GSC Funding Board will meet on Wednesday, June 14 starting at 3 PM to allocate summer funding. If you are interested in participating, email gsc-treasurer@mit.

Next meetings:

APPC - June 13
Activities - June 22
Orientation - June 29

Congratulations to the following award winners selected by the GSC...

Teaching Awards

Prof. Arnold Barnett
Prof. Munther Dahleh
Prof. Michael Dennis
TA Tom Svrcek
Prof. G. Peter Wilson

Horton Fellowship

Sangam, The Indian Students' Association

Sizer Award

TA Shane Crotty
Prof. Shigeru Miyagawa

Take me out to the ball game...

The GSC is going to Fenway to see the **Red Sox vs. Oakland** on Sat., June 10 (1 PM). Tickets are only \$5!!!! Stop by the GSC office and buy your tickets (tickets are first come first served). For more info, email gsc-admin@mit.

The GSC Grocery Shuttle will continue to run its normal route during the summer, but only ONCE each Sat. starting at 10 AM. The shuttle will continue as long as ridership does not get too low! For details, see the GSC web page or email jsriver@mit.

Back by popular demand...

The GSC will again be organizing a trip to Montreal for the **International Jazz Festival** (June 30 - July 3). The trip will include transportation and lodging. Details are being worked out. To find out more, come to the activities meeting or get on the GSC mailing list (send email to gsc-request@mit).

Congrats to all the graduates - you are now free!!

The GSC would also like to send a special congrats to two of its own: **Joseph Bambanek** and **Susan Ipri** for winning Compton Awards!

All Graduate Students are invited to all our meetings. Most are held at 5:30pm in 50-222 and dinner is served.

Stay informed about all our events! Check out our web page <http://www.mit.edu:8001/activities/gsc/gsc.html>. Add yourself to our mailing list by typing **blanche gsc-official -a username**, or send email to gsc-request@mit. Questions, comments, ideas? Give us a call at 3-2195 or send email to gsc-admin@mit.

OPINION

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Solar Car Team Adviser Ends Outstanding Tenure

Three years ago, the MIT Solar/Electric Vehicle team asked Kathleen Allen to become the team's next adviser. From her unusual initial qualifications of a having a fine knowledge of pianos, being a willing faculty member, and possessing a conveniently-located woodworking shop, she became a valuable member of the team.

Sadly, this summer's Sunrayce will mark the end of her tenure with the team. We would like Kathleen to gain public recognition for

her profound effect on our organization.

Kathleen has been a model of the optimal adviser. Serving as ombudsman, coordinator, manager, leader, and friend, she has instilled the group with a new sense of direction and purpose. By forming relationships with contacts within and outside of MIT, Kathleen has earned the team unprecedented levels of external support. With her unique outlook, Kathleen has added a human dimension which complements the team's technical side.

Kathleen exceeds any standard of expectation of an adviser. While some faculty may be content to attend meetings, spout advice, and proclaim lofty goals, Kathleen enjoys being covered with epoxy in the middle of an all-night composite lay up. Kathleen is careful to

allow the team as much autonomy as possible, letting us learn the most from our mistakes and successes. Her energy and enthusiasm are contagious, serving as a source of motivation for the entire team.

The team will continue without Kathleen as adviser. But, while her duties will be undertaken by others in the future, Kathleen Allen can never be replaced.

Goro Tamai G
Milton D. Wong '96
Wandy Sae-Tan '97
David G. Leip G
D. Karl Critz '96
Professor J. Kim Vandiver PhD '75
and others
MIT Solar/Electric Vehicle Team

UESA Dean's Office Should be Divided

Column by Raajnish A. Chitaley, Hans C. Godfrey, J. Paul Kirby, and Stacy E. McGeever

We urge President Charles M. Vest and Provost Joel Moses to divide the Office of Undergraduate Education and Student Affairs by appointing a Dean for Undergraduate Education (DUE), reporting to the Provost, and a Dean for Student Affairs (DSA), reporting to the DUE. Further, as relevant personalities consider whom to appoint as Dean for Student Affairs, we would like to bring attention to someone with whom too many students and faculty are too unfamiliar, yet who is very influential in student affairs: Stephen D. Immerman, director of special services for the senior vice president.

A divided Dean's Office?

A community which is nervous about MIT's real attitude toward student affairs would understandably worry that a DSA subordinate to a DUE might mean MIT is seizing an opportunity to demote the importance of the out-of-classroom experience.

We believe the true test lies instead in how effectively the DSA is supervised, advised, and informally guided by what is the true arbiter of the undergraduate experience: the faculty.

The provost is a very busy person from whom many people need supervision and guidance. A dean can usually get the provost's attention easily enough, but keeping focused attention for very long can be much more difficult. If the DSA reports to the provost, it thus seems wise both that the DSA be a member of the faculty and that he or she have impressive understanding of the faculty's interests to compensate for the lack of persistent Provostial guidance.

But a DUE, who will surely be a member of the faculty, would have a much more vital link to the DSA. Residing perhaps in the same office area, the two would regularly communicate and coordinate; the interests of the faculty would have a comfortable, focused conduit into the student affairs structure, and vice versa.

Thus, this arrangement could just as well mean that MIT believes student affairs should occupy a more critical place — by keeping the DSA vitally connected to the academic sector of MIT rather than creating what one finds at so many other schools, a "Vice President for Student Affairs" whose peer areas are physical plant, payroll accounting, alumni fundraising, and the like.

Immerman and re-engineering

Whether the next DSA or not, Immerman has already been given an instrumental job in

the re-engineering of student services — including all of student affairs to be sure, but also such areas as the Bursar's Office, the Student Financial Aid Office, and Housing and Food Services. Re-engineering will almost certainly be dramatic and substantial, and strongly determine the course of student affairs for many decades. But re-engineering is only now beginning and may not conclude for many years; a DSA will be chosen very soon, perhaps within a few weeks. The DSA can either be a consonant force in MIT's re-engineering, or a dissonant one — we obviously prefer the former.

Talents and achievements

How does one confidently describe what Immerman is all about? He seems to operate with commitment to definable, articulable agendas designed to implement definable, articulable goals or outcomes; he is marked by the relentless tenacity to build consensus around those agendas, goals, and outcomes. His last five or six years working as director of special services put him in successful charge of many projects involving many millions of dollars in different areas of MIT, leaving him with an extensive collection of connections at all levels of MIT. He has an amazing interpretative command of MIT's history and the context of many of its most critical decisions, and can work in situations requiring high public visibility or quiet, private negotiation.

Perhaps his most recognizable accomplishment to students occurred well before he was director of special services: the redesign of the student center. Before 1985 or so, the student center was largely a building of contradictions: for instance, it was a formally arranged build-

ing which students used informally; it contained commercial organizations yet was a financial burden to MIT. Immerman redesigned the entire concept of the student center and directed the renovation, leaving the building we see today, and particularly the first floor, much better organized for the needs of students as well as the rest of the community.

Student affairs

What might he do as dean for student affairs? We are fairly confident he would build consensus with the faculty, students, and student affairs staff on definable, articulable goals for what students as individuals should get out of the nonacademic experience; then relentlessly and efficiently pursue those goals. We would not be surprised to see a printed curriculum for the nonacademic experience. It need not be his personal opinion of what the curriculum should be; it will be the community's, and if it just so happens that the community's opinion turns out to closely resemble what his was in the first place, it wouldn't be the first time — but this goes to his skills as a consensus builder, not his bedtime reading of Machiavelli. This coherence of method, focus on ultimate goals, and litany of accomplishment would be the most obvious marks he would leave as dean.

Immerman's principal handicap as DSA is apparent: he is not a member of the MIT faculty. But the importance of the DSA coming from the faculty diminishes substantially if the DSA reports to the DUE, for reasons we have described earlier.

Second, he has for the past five or six years been the right hand man of Senior Vice Presi-

Dean, Page 5



Opinion Policy

Editorials, printed in a distinctive format, are the official opinion of *The Tech*. They are written by the editorial board, which consists of the chairman, editor in chief, managing editor, executive editor, news editors, and opinion editors.

Dissents, marked as such and printed in a distinctive format, are the opinions of the signed members of the editorial board choosing to publish their disagreement with the editorial.

Columns and editorial cartoons are written by individuals and represent the opinion of the author, not necessarily that of the newspaper.

Letters to the editor are welcome. They must be typed, double-spaced and addressed to *The Tech*, P.O. Box 397029, Cambridge, Mass. 02139-7029, or by interdepartmental mail to Room W20-483. Electronic submissions in plain text format may be mailed to letters@the-tech.mit.edu. All submissions are due by 4:30 p.m. two days before the date of publication.

Letters and cartoons must bear the author's signatures, addresses, and phone numbers. Unsigned letters will not be accepted. No letter or cartoon will be printed anonymously without the express prior approval of *The Tech*. *The Tech* reserves the right to edit or condense letters; shorter letters will be given higher priority. Once submitted, all letters become property of *The Tech*, and will not be returned. We regret we cannot publish all of the letters we receive.

To Reach Us

The Tech's telephone number is (617) 253-1541. Electronic mail is the easiest way to reach any member of our staff. Mail to specific departments may be sent to the following addresses on the Internet: ads@the-tech.mit.edu, news@the-tech.mit.edu, sports@the-tech.mit.edu, arts@the-tech.mit.edu, photo@the-tech.mit.edu, circ@the-tech.mit.edu (circulation department). For other matters, send mail to general@the-tech.mit.edu, and it will be directed to the appropriate person.

Finger-Wagging Moralists Hurting Themselves, Society

Guest Column by Kostas Arkoudas

America nowadays is chock-full of finger-wagging moralists who have come to realize that playing Robin Hood for the "disadvantaged" has salutary career effects and have rushed to cash in on the trend. Which is really easy. All they have to do is pick a few buzzwords from the ever-expanding victimization vocabulary and start heaving them randomly left and right with much ado and histrionics. And, more importantly, they have to play prosecutor. They must bring the villains to justice. They must accuse. And they must accuse with all the fervor that befits their ele-

vated moral stature.

You see, there is this law of folk psychology which says that when you accuse someone you indirectly make yourself look better. When you accuse the bad guys you sequester yourself from them, you put yourself on the other side of the fence. And who's on the other side of the fence opposite the bad guys? The good guys! See how easy it is? All Jane Doe has to do is point her finger to someone, preferably a heterosexual white male, and call them "racist," "sexist," "animal abuser" — whatever pleases her. Jane Doe immediately becomes the torchbearer of justice and equality, a champion of humanity, a paragon of

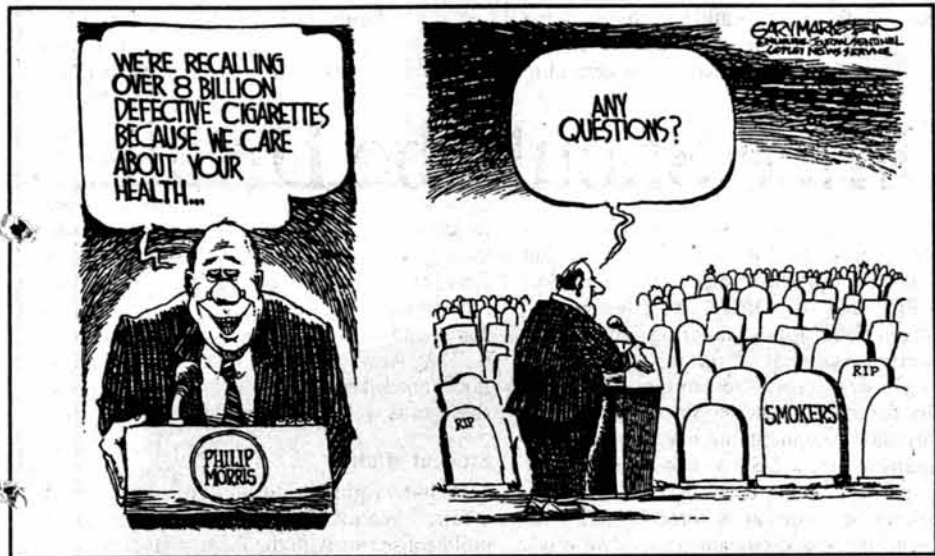
virtue and moral excellence.

For further illustration of this technique the interested reader is referred to the article by Kristen K. Nummerdor '94 ["GOP Is Not Just Problem for Queers," April 28]. In that article, Ms. Nummerdor set out to address several issues on the GOP agenda, ranging from crime and the economy to drugs, tax fraud, and others. Predictably, nothing of relevance or substance was said about any of these issues. Not one number, not one fact. Nothing. The entire article was just a continuous stream of vague mumblings about victimization and abuse. A truly superb violin performance on Ms. Nummerdor's part, and one that will no doubt have many encores in her future career. After all, who cares about substance and relevance? Heck, who cares about facts any more? Nowadays facts are *démodé*, obsolete, having taken a back seat to the real issue, discrimination. Everything nowadays revolves around discrimination and abuse. In everything there is a victim and a victimizer.

Unfortunately, this kind of petty moralizing is not all comedy. In fact, when done as rampantly as it has been done over the past decade, it has some pretty grave societal ramifications. First of all, it adds oil to a fire that is already running out of control. America is already a bitter, litigious, tense, and deeply divided society. Hysterical accusations and counter-accusations reverberate in her halls and courtrooms day in and day out. When people are not too busy shooting one another, they are suing one another. Blacks and Latinos have been wronged by the whites, Asians by both whites and blacks,

whites by affirmative action, immigrants by the natives, animals by lab scientists, children by their parents, patients by their doctors, women by men, queers by straights, straights by queers, the Arabs by the Jews, and the Jews by everybody. In this atmosphere, to engage in senseless victimization rhetoric is to pour salt on an open wound — regardless of whether it's done by the mass media (which have realized that anger and conflict sell much better than the lukewarm callings for peace and unity), or by some of the more militant champions of minority causes (most of whom are astute businessmen living off book-writing and the \$10,000-an-appearance lecture circuit), or by individual Zorros such as Nummerdor.

Of course in the end the incessant complaining becomes self-defeating — people are just getting sick of the never-ending whining, plain and simple. But, in the process, discrimination is trivialized. Racism, sexism, etc., are all real, substantive issues that need to be taken seriously. Those who trumpet them senseless have only managed to depreciate their gravity, to take away from their legitimacy. In that sense, the peddlers of victimization have been digging their own grave — they've been crying wolf one too many times. People who would normally be open-minded and sensitive to injustice are becoming cynically thick-skinned about it just as an adverse psychological reaction to all the fanfare and the hypocrisy. No one can profit from such a state of affairs in the long run, not even the breast-beating Robin Hoods who have been crying "Injustice!" all the way to their banks.



Why Can't Buildings and Grounds Look Nice Year-Round?

Column by Thomas R. Karlo

PHOTOGRAPHY EDITOR

The last few weeks at the Institute have been a time of activity and change. If you didn't have the opportunity to be on campus, it's not apparent how much work has gone into preparing the buildings and grounds for today's Commencement activities. But for those of us who reside here during the rest of the year, it's been quite exciting to see our campus go from its normal state to the beautiful, shining place the seniors will graduate from this morning.

One of the questions that continually haunts many at MIT is why, despite being the top science and engineering school in the nation, and one of the very best overall universities, the Institute continues to suffer both from poor recognition among the public, and

why MIT students and alumni are not as proud of their *alma mater* as the graduates of other top ranked universities. I think that the "Commencement clean-up" can offer an interesting explanation for this phenomenon.

Every year, the campus undergoes this transformation. Walls are painted, banisters varnished, and floors polished. Outside, beautiful carpets of sod are rolled out over the bare ground surrounding Institute buildings, and the yellow rope barriers used to corral the students during the year come down. Dorms are cleaned, elevators have their floors waxed so much your shoes squeak. Where I live, we even got new shower curtains, just in time for those of us preparing to leave for summer housing.

These changes are an indication of where the problem lies. While our school may dress

up in Sunday best for Commencement, the rest of the year the campus falls into the shabby disrepair of an undergrad who's spent a few days too many in the Athena cluster. Not long from now, the hastily laid down sod will have been trampled back to dust, the carpets will be once again sticky in places, and the shine will wear off the campus. The Institute will become once again dull and gray.

Those who decide how and when resources are spent to maintain MIT should take a long hard look at what they're doing. Graduating seniors aren't going to have four years' memory of dodging the rats roaming Amherst Alley as they headed to their dorm at night erased so easily. Nor will returning alumni suddenly believe that the Institute has changed into a gleaming realm.

Making MIT a more livable place during

the rest of the year might not increase Alumni donations. But it would allow MIT students to be proud not only of surviving MIT, but of being able to spend several years of their life here. And who knows — maybe if our campus was as well-maintained as other Cambridge universities during the year, we might increase the percentage of students who accept admission offers. And that, if nothing else, would be something worthwhile for the administration.

This August, the class of 1999 will arrive at MIT to begin their time at MIT. I sincerely hope that they will arrive on a campus that is all they expected and more. If given such a better environment in which to live and work, maybe they will consider their time at MIT less of a test of endurance than a time of opportunity.

Immerman Well-Qualified for Dean for Student Affairs Post

Dean, from Page 4

dent William R. Dickson '56, who reports directly to Vest. The case could be made that anyone acting with the imprimatur of the senior vice president would of course get a great deal accomplished, command respect, and so forth, and that this need not at all translate into confidence that he or she could successfully manage a large, diverse staff without such an imprimatur. We believe this misses the point not only of what Immerman accomplished before he worked for Dickson, but ignores entirely that while director of special services he has also been the formal supervi-

sor of Graphic Arts and the Campus Activities Complex — for which he, not Dickson, is primarily responsible. And it completely misses why he was fit for Dickson's imprimatur in the first place.

Third, Immerman has a great deal of ambition and drive. The case could also be made that he may have ambition, good ideas, and even the right ideas, but if appointed as DSA would be quickly stymied by the bureaucratic student affairs staff, and either burn out quickly and quit, or worse: burn out slowly and stay. But even leaving his record of accomplishments aside, this concern is also misplaced. He is ambitious about what can be accomplished

in student affairs and he is anything but naive, seldom being mistaken about what he *cannot* accomplish. Finally, the student affairs staff, nearly without exception, do not suffer from bureaucratic stubbornness; most are good people trying to get good things done. Managing the diversity of goals within the Dean's Office is a challenge, but one to which Immerman is arguably well-suited. He started out at MIT in the Dean's Office in 1979 and was an assistant dean from 1982-84, so the ways of the Dean's Office are not foreign to him.

In summary, we think Immerman's talents, accomplishments, and potential handicaps merit attention from faculty, students, and

those choosing the next DSA, since he will be instrumental in student services re-engineering, since he is an respectable candidate for DSA, and because of his current role in student affairs — informal and with great influence.

Raajnish A. Chitaley '95 has served as Undergraduate Association Treasurer; Hans C. Godfrey '93 as UA President; J. Paul Kirby '92 as UA Vice President; Stacy E. McGeever '93 as UA President. They offer their sincere congratulations to Professor Joel Moses for accepting, for the sake of MIT, the demotion from dean of the School of Engineering to provost.

INTERNATIONAL STUDENTS APPLY NOW FOR PRACTICAL TRAINING

All international students who are interested in applying for either pre-graduation or post-graduation Optional Practical Training should do so as soon as possible. The deadline for application is 60 days after graduation. It is currently taking five weeks to have the application approved by the Immigration Service. Information about the procedures to follow and the documents required are available in the International Student Office (5-106).

The Committee on Campus Race Relations

would like to thank all of you who have submitted grants applications and worked on Committee-sponsored programs during the past year.

Next year, grant applications will be due October 15, December 15, and April 15. Application forms are available from the office of Dean Ayida Mthembu, Room 5-106.

We've just issued a newly revised *Guide to Studies in Racial, Ethnic and Intercultural Relations*. If you want to know what we've been up to and where we hope to go, our first Annual Report is also now available. Copies of both are available from Traci Trotzer at 3-1706 or traci@mit.edu.

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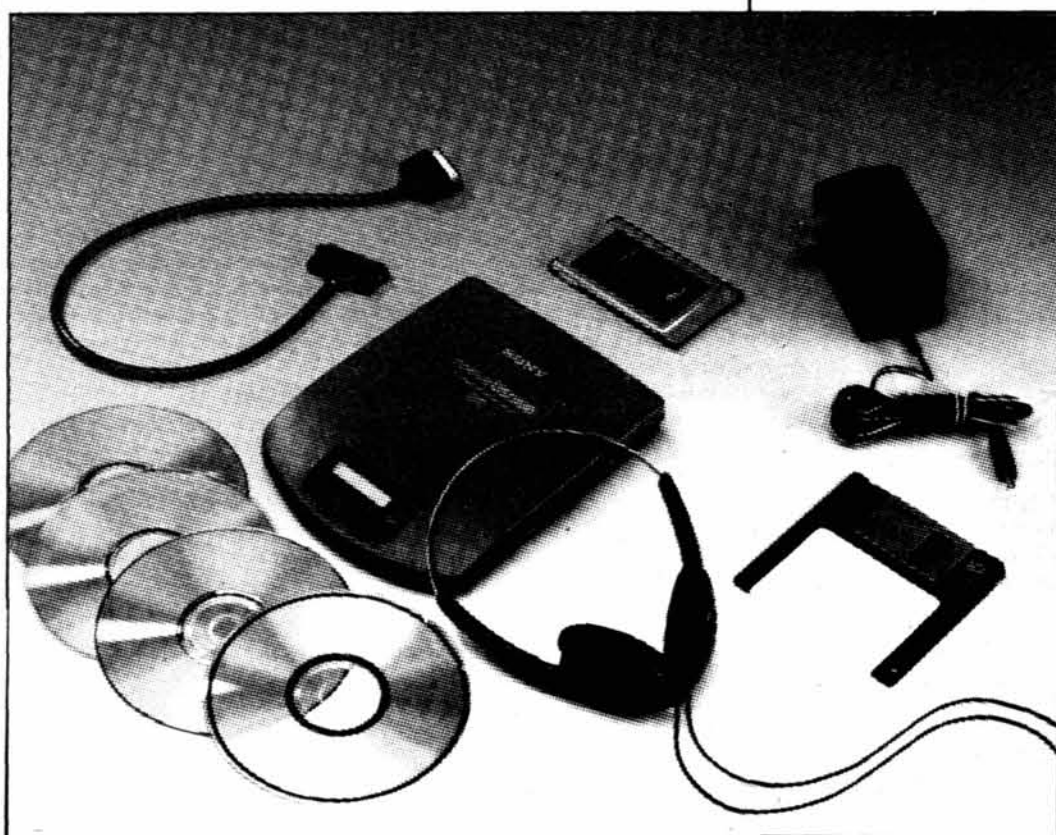
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Smith Looks Back on Students, Life Then and Now

By Ramy A. Arnaout
EXECUTIVE EDITOR

First of two parts.

Dean for Undergraduate Education and Student Affairs Arthur C. Smith will retire at the end of this month after 30 years of teaching and advising students at MIT. While he is notable if only for being the first dean to unite the offices of undergraduate education and student affairs, Smith's tenure at MIT and experience has also given him a unique and valuable perspective on the relationship between the Institute and its students.

During his career, Smith has seen notable changes in both the composition and social habits of the student body, he observed in a recent interview.

"When I came here, I think there were three black students," said Smith, who became professor of electrical engineering and computer science in 1968. "Students were expected to be in their dorms by some certain hour at night or sign in; they had to register guests, there were no women allowed in men's dorms, certainly not overnight." It was "a very different life."

"The current set of students have lived their lives in a very different world from where students did then," Smith said. For some time after his arrival, there were "no computers, no hand-held calculators; everybody still knew how to use a slide-rule — or didn't, as the case may be," he said.

Science, society have changed

The advent of the microchip and involvement in the Cold War have also meant profound changes in the career paths students have chosen, Smith said.

"They've changed a lot. When I came here ... the post-Sputnik, post-war surge in science and engineering was pretty well underway," Smith said. "We're talking about an institution which had already started growing, [though] it hadn't finished growing by then. I was just looking at the exhibit down in the Compton Gallery of MIT during World War II, which was a little before my time, and recognized there were a

lot fewer buildings, a lot more parking lots ... it was a very different place in that regard."

"It was a time when there were lots of careers in what at that time high-tech, in research and scientific and engineering things," Smith said.

"At that time I was dealing much more with graduate students than I have in later years," said Smith, who has also served as EECS' graduate officer. "Their careers were more then than now looking toward

a consequence of that is a lot of engineering departments around the country there are people who graduated from that period.

"Also in contrast with very recent times there were the major labs like Bell labs, RCA at that time. There were several really large industrial laboratories of very high prestige and those were also the institutions students were aiming for," but most have changed significantly since then, Smith said.



FILE PHOTO

Retiring Dean of Undergraduate Education and Student Affairs Arthur C. Smith shown in the 1970s.

academic positions."

Today, "in engineering, at least, I would imagine the number going into academic positions is more like 10 or 20 percent; back then I'd say it was a majority," Smith said. "And

"But to make up for that, if you like, the computer industry has appeared on the scene, and it seems to be a place also where I think it's particularly congenial to a lot of what I think of as MIT-type people

who had a little bit of spirited adventure, are very bright, are willing to put their career where their mind is, in the sense that they will form a small company, they will go and work in startup companies," Smith said.

"That was not quite so prevalent then. The chip has not only reduced the size of the devices and made things possible of increasing complexity but it has made it easier in some ways easier to take an idea to marketplace. So I think the role of the entrepreneur is different now than it was then," Smith said. "A good idea, a clever program, and you're on your way. At that time, the scope of what it took to make a useful device was just a lot different."

But not everything was different. Despite these integral changes in technology, society, and economic reality in the past three decades, students then and now share fundamental similarities, Smith observed.

For one thing, "they're still about the same age," Smith said. "The students then were very bright, very quick, as they are now. They were fun to teach because they caught on very quickly. They often asked questions you didn't know how to answer. They were willing to work hard, and did, all of which are characteristics of ... students I know now."

Dean post once not so certain

Smith's extensive experience with students was recognized last month with the naming of a new Institute award in his honor. The award will be given to a faculty member for "meaningful contribution to student life." It may then come as somewhat of a surprise that in 1990 Smith was reluctant to become acting dean for student

affairs.

Smith was asked to be acting dean by then-outgoing Provost John M. Deutch '61 and President Paul E. Gray '54. "Certainly the thought that I wasn't taking it with the idea that they had made me a long-term promise, is true. However, I may have said I don't believe it was ever in my mind that I was going to quit doing it within a year unless somebody else was found to do it."

The shift to becoming dean "did involve some very major changes not only in how I work but in what I do," Smith said. "I had been doing the job as graduate officer in electrical engineering and computer science for something like 17 years, which was pretty habit-forming, and also a little hard to turn off. I taught 6.012 (Electronic Devices and Circuits) that fall while being dean, which was difficult. And then while we had somebody else to do most of the graduate officer work, I did the graduate admissions in the spring."

"Maybe I wanted to find out whether I wanted to be dean or not," said Smith of his reluctance. When Smith's predecessor was being selected, "there was a search and somebody asked me if I wanted to be dean. I didn't at that time because I think I had an exaggerated idea about how much of your time is taken up with the 'bad side' of deaning as opposed to the 'good side' of deaning."

"Having to be the person who deals with the tragedies that occur, having to be the person who deals with the misbehavior — those are the bad side kinds of things, the things that need to be done, and end up being done in the Dean's Office. It turns out that the dean himself doesn't actually have to do much of" that sort of thing, Smith said.

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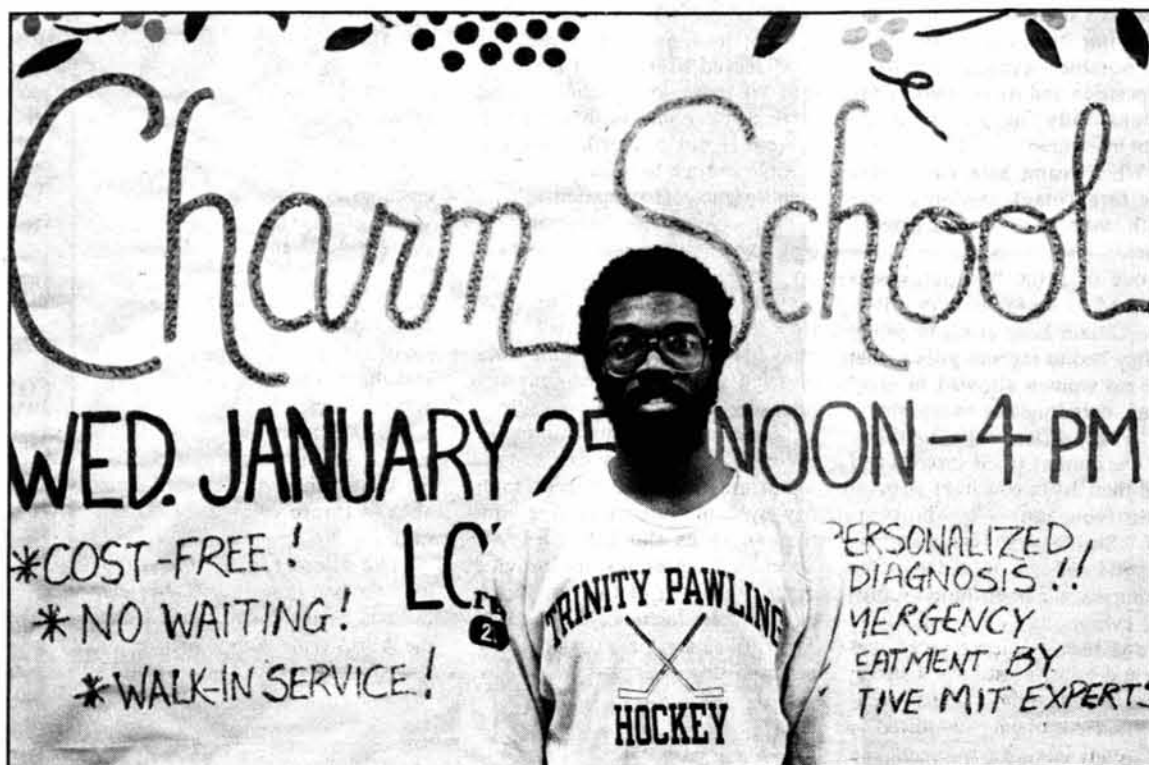
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Congratulations to all those graduating. For all those still here, good luck getting through "hell," and consider being a part of Technique.



New Libraries System Installed; Search for Director Progresses

By Saul Blumenthal
ASSOCIATE NIGHT EDITOR

The MIT libraries will undergo two important changes this summer as a search committee narrows down its choices for a new director to replace Jay K. Lucker, who is retiring, and administrators work to install a new computer operating system.

The search committee has winnowed a national field of candidates down to nine, according to Professor Peter S. Donaldson, head of the literature section and chair of the committee.

Six of the nine candidates have already given presentations to the committee on the topic "The Role of the Research Library in the 21st Century," and the rest will do so over the next two weeks, Donaldson said. While he declined to name names, Donaldson did say that none of the candidates are MIT staff or faculty.

The committee plans to report its recommendations to the provost and president within the next several weeks, Donaldson said. The committee hopes they will choose a new director by Sept. 1, a day after Lucker's Aug. 31 scheduled retirement.

Committee members noted that the new director must have a strong interest in and commitment to technology. Besides being interested in "traditional library services," the new director must "lead the MIT Libraries in terms of information technology," said Dutch D. Chung G, one of two students on the 11-member committee.

The top candidates must have "the capacity to lead change in the library world" by making use of the technological and information revolution being brought about by the Internet and the World-Wide Web, Donaldson said.

"Everyone considered has had great interest in information technology," Donaldson said. The new director "doesn't have to be a technologist, but should have familiarity with information technology and with what is best."

In general, the committee is looking for a "candidate interested in user input and improving services in the libraries," Chung said.

New system ready by fall

In addition to a new director, the libraries will be moving to a new computer operating system this summer, said Greg Anderson, MIT Libraries' associate director for systems and planning. The new system will be much more powerful, have more sophisticated indexing, searching, and processing capabilities, and be better structured than the current GEAC 8000 system, Anderson said.

The \$360,000 system is the result of a five-year-long collaboration between the Libraries and Information Systems to improve public access, Anderson said. Originally scheduled for completion late last year, the project was delayed last June when the company originally chosen to design the system changed its plans ["MIT Libraries' Barton Replacement on Hold," Sept. 23].

"For its time, [the current system] served MIT well," Anderson said. "In today's computing and networking environment, however, the system is not powerful, open, or flexible enough to meet the requirements of the MIT community."

The conversion to the new system begins next week; it should be up and running by the end of the summer, Anderson said. The transition has made some services unavailable, such as placing holds or recalls on books and renewing books by phone.

Anderson views maintaining the accuracy of the library database as a top priority in the conversion to the new system. "Library catalog information is at the heart of MIT because it represents and provides access to much of the intellectual capital of the Institute," he said.

Culminating the changeover will

be the development of a client/server system for the Libraries. That part of the new system, also a joint effort between MIT and the Newtonville, Mass.-based GEAC, will be in place by next summer, Anderson said.

The current system is host-based, which means that one central computer does all the processing of data for every user of the system, and individual users connect to this machine. Professor of Electrical Engineering and Computer Science Jerome H. Saltzer '61, head of the Library 2000 Group at the Laboratory for Computer Science, described this as the "milking machine attachment mechanism."

By contrast, in a client/server system like the one on which Athena is based, client software on the computers of individual users access data and information from a small number of server machines, and the clients themselves do the actual processing. This more evenly distributes the burden of processing throughout the network, and makes the system more flexible and adaptable to future changes, Anderson said.

The client/server model is an essential part in the planned development of clients for platforms such as the World-Wide Web, Anderson said.

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Baltimore, Harbison, Wang Named Institute Professors

By Nicole A. Sherry
STAFF REPORTER

Professors David Baltimore '61, John H. Harbison, and Daniel I. C. Wang '59 have been named Institute professors, bringing to 13 the number of professors with MIT's highest faculty honor.

"One of the things I like about the three appointments is that they span the breadth of MIT's strengths. The engineer, the scientist, and the humanist; these are the three things on which an Institution like MIT stands," said Professor Robert L. Jaffe, chair of the faculty.

The distinction of Institute professor is bestowed on a faculty member to acknowledge outstanding leadership, accomplishment, and service in the scholarly education and general intellectual life of the Institute or wider academic community.



John H. Harbison

In principal, the title of Institute professor increases the awardee's freedom. The professor reports to the provost rather than to a department head or dean, and can thus range more freely, Jaffe said.

In practice, Institute professors are singled out in distinction and given a central Institute role. Often Institute professors make contributions on committees and panels at MIT, Jaffe said.

On receipt of nominations from members of the faculty, the chair of the faculty consults with the president, provost and dean of the nominee's school and then appoints an ad hoc faculty committee, including members from within as well as outside MIT.

This committee presents its recommendations to the president, who brings the rec-

ommendations to the Academic Council for review and then submits the appointments to the Executive Committee of the Corporation for formal approval.

"President Charles Vest and I saw that the current number of Institute Professors was low," Jaffe said. "According to the Policies and Procedures book there should be about twelve Institute professors. We did a little beating of the bushes and let it be known that we were looking for recommendations," he said.

Baltimore, of the Department of Biology, has been on the MIT faculty since 1968, except from 1990-94 when he served as president and on the faculty at Rockefeller University. He helped develop both the MIT Center for Cancer Research and the Whitehead Institute; he directed the latter from 1982-90. He received the Nobel Prize with Howard Temin in 1975 for the discovery of reverse transcriptase enzyme.

"David Baltimore is a great basic scientist, whose career in the last 25 years has been foundational in molecular biology," Jaffe said.

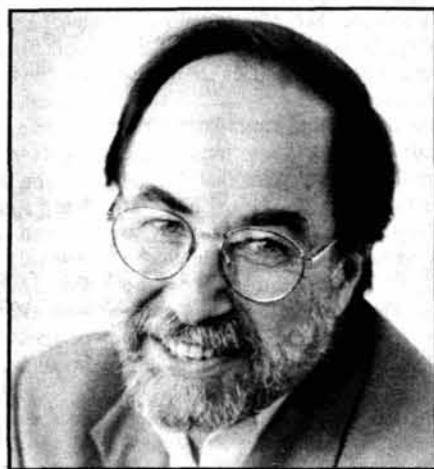
Harbison of the music and theater arts section of the Department of Humanities, Arts, and Social Sciences has been a member of the MIT faculty since 1969. He received the Pulitzer Prize in 1987 for his oratorio, *Flight Into Egypt*. He has twice been chair of the section, and in collaboration with Professor Marcus Thompson has developed a successful chamber music program.

"John Harbison is a great humanist and artist who has been referred to as one of a

couple of people who are the most important living composers," Jaffe said.

Wang, of the Department of Chemical Engineering, played an important role in the foundation and leadership of the Biotechnology Process Engineering Center, a multidisciplinary research center focusing on problems in biochemical engineering. He is a member of both the National Academy of Engineering and the American Academy of Arts and Sciences.

"Wang is the kind of engineer who has distinguished himself by putting complex



David Baltimore '61

science into practice," Jaffe said.

These three professors "are the best of the best. Reading about their careers is an inspiration," Jaffe said.



Daniel I.C. Wang

In Quest for Balanced Budget, Congress Hurts Student Loans

Loans, from Page 1

ence research.

But Democrats in Congress and the Clinton administration say the cuts would have a more debilitating effect. "Whatever the reduction is — a quarter or a third — it's big, and it's a reversal of historic trends," said John H. Gibbons, presidential science adviser.

"We've lost sight of federal funding in education and research as investments," said President Charles M. Vest. "People are looking at them as costs and costs to be cut down." [See story, page 21.]

Many administrators and faculty have "been working very hard over the past few years to let people see the importance of MIT and the nation's other research universities," Litster said.

"We will be calling upon that goodwill, and will be working hard in the next few weeks to explain the significance of many of the pro-

posed cuts," Litster said.

Student loans will be hurt

Stanley G. Hudson, director of student financial aid, described the House cuts in student loan programs as "draconian." The House budget, while not specifying cuts, indicates that the interest exemption would be eliminated for all students.

A late amendment to the Senate version of the bill restored \$9.4 billion of \$13.8 billion in cuts to student loans. The Senate cuts "are a bit less troublesome but still considerable," Hudson said.

It is possible that President Clinton could veto the budget, Hudson said. He has made strong statements against cuts in education, but it might be difficult to veto the whole budget, Hudson said.

At any rate, there will be a "clear reduction in grant money being available," and possible loss of the in-school interest subsidy, Hudson

said. The interest subsidy helps not only the neediest families, but also middle income families, he said.

One Senate proposal is a compromise on the interest subsidy where it would only be eliminated for graduate students. For students in long-term PhD programs in departments that do not have many fellowships, costs could go up by 22 to 25 percent, Hudson said.

A secondary effect of these cuts is that potential students might be discouraged to apply to places like MIT — even if the cuts are not as severe, Hudson said. "We think we saw the effect back in the 1980s in terms of a drop-off in the number of applicants from low income families," even though the cuts did not go through.

The Massachusetts delegation of senators and representatives support higher education because it is an important factor in the

Loans, Page 25

Grad School Dean Should Be in Place By End of Summer

By Ramy A. Arnaout
EXECUTIVE EDITOR

The successor to Dean of the Graduate School Frank E. Perkins '55 will very likely be named by summer's end, according to President Charles M. Vest. Perkins has announced that he will step down from his current role in late August to resume teaching and research in the Department of Civil and Environmental Engineering.

An advisory committee named earlier this year has been looking into possible replacements. "We're quite a way along in the process," said former Graduate Student Council President Roger G. Kermode G, one of two students on the 10-member committee.

"The committee's worked very hard and was very well aware of the time constraints involved" with the timing of the departure, Kermode said.

Ultimately, Vest is the one who will make the final choice of dean, Kermode said. "Vest will be exploring his options to figure out how things are going to go between the incoming deans, UESA, and the graduate school," he said.

Perkins a capable advocate

Graduate students said the new dean must be a strong student advocate, pointing to Perkins as a model in that respect.

"He's been great for us," said Patrick S. Wojdowski G, GSC vice president. "He's been really helpful for graduate students [and is] always ready and willing to work with us in the Graduate Student Council."

"He was more than willing to

help out and give advice on what graduate students can do," Wojdowski said. "He's there for graduate students if they have problems with their adviser and taking it to the departmental level for some reason doesn't work."

GSC Treasurer Gregory E. Penn G agreed. "From what I've heard, it's going to be hard to find someone as good as the graduate dean we have," he said. There isn't anyone besides the dean whose job "is specifically to think about graduate students, someone to go around to different people in the administration and remind them how they could better serve graduate students," Penn said.

"As a graduate student, one of the most important things [to me] is that the new Graduate School dean is an advocate for graduate students," Kermode said. "The office should continue to be open for graduate students experiencing difficulties."

That advocacy is particularly important "with the funding changes that ... are going to create difficult situations for research assistants," Wojdowski said [see article, page 1]. "The dean of the graduate school will [have to] be someone who will really work to help the problems that that creates be minimized."

The new dean "needs to be aware of what's happening in graduate school education, particularly in light of the announced changes in graduate student funding," Kermode said. It is important that the new dean "look at innovative ways to make sure that graduate students can [continue to] be funded at least as well as present levels."



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AMY HSU—THE TECH
Hackers covered the year engraving on the Great Dome with a traditional MIT acronym Sunday night. The sign was removed the following morning.

Woman Collapses After Chemical Spray Attack in Restroom

By A. Arif Husain
ASSOCIATE NEWS EDITOR

Several people were overcome by fumes and one woman collapsed after an attacker released a chemical irritant spray in a Building 4 restroom (4-352) on May 18, according to Campus Police Sergeant Cheryl D. Vossmer. Building 4 and two adjacent buildings were evacuated because of the fumes.

The incident, which took place at around 10:30 a.m., was reported when a number of people nearby smelled the fumes and mistakenly suspected a chemical spill, according to a letter issued by Mary M. Tobin, Physical Plant operations center supervisor.

According to Campus Police Chief Anne P. Glavin, man entered the women's restroom and sprayed "a cayenne pepper spray" at a woman over a stall door. The spray is believed to have been of the type used commonly for self-defense. The suspect immediately fled, she said.

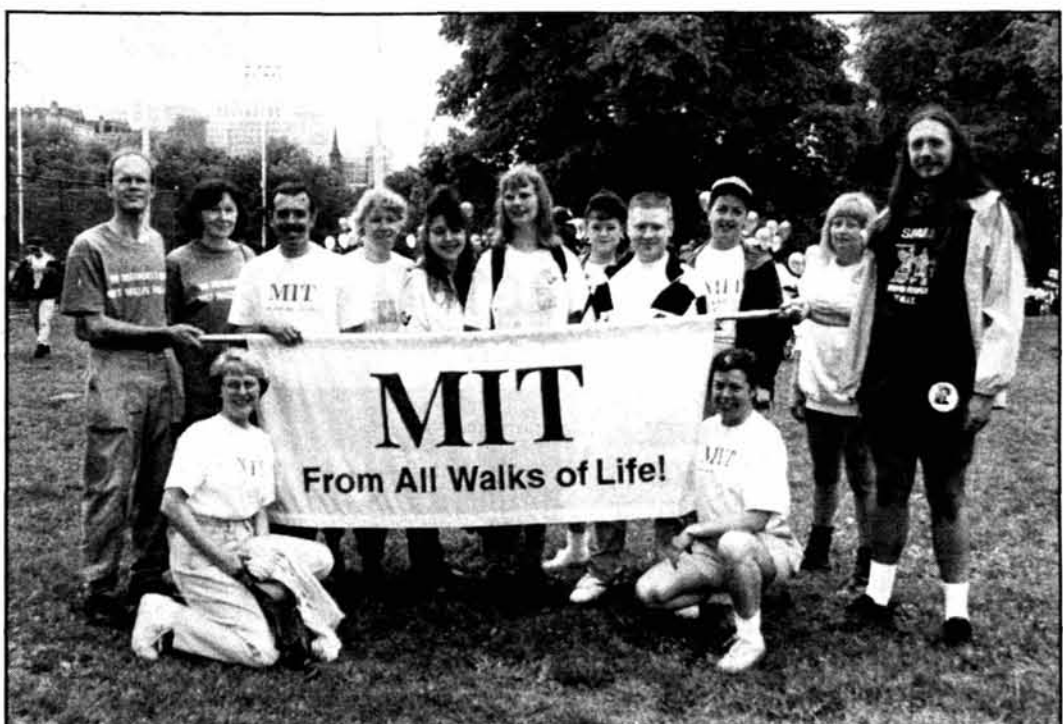
The victim, whose name has not been released, was an undergraduate, Vossmer said. She was taken to the Medical Center, where she was treated and released. Other women who had been in the restroom during the attack were also given medical attention for exposure to the spray's fumes.

The Campus Police, Physical Plant, and the Cambridge Police and Fire Departments responded. Build-

ings 4, 10, and 3 were evacuated while the situation was investigated. Evacuees were allowed to return to the buildings within a short time, Glavin said.

The suspect is believed to be a white male 25 to 30 years old with a square chin and heavy build. He was reported to have been wearing heavy dark framed glasses and had stringy hair pulled forward, Vossmer said.

While the Campus Police has gathered photos of possible suspects, the victim was unable to make a positive identification, Glavin said. The case will be difficult to pursue without further leads, she said.



AMY HSU—THE TECH
MIT students and faculty were among the 35,000 people marching in the 10th annual AIDS Pledge Walk, which raised \$2.8 million.

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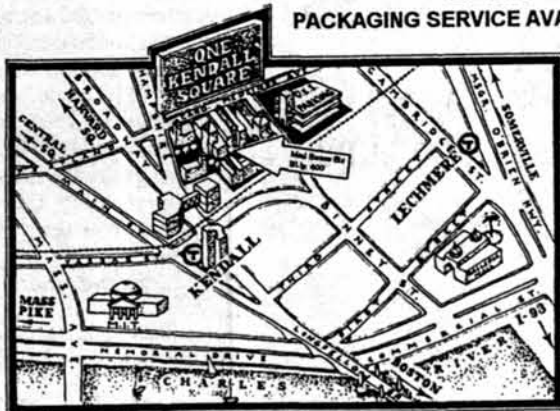
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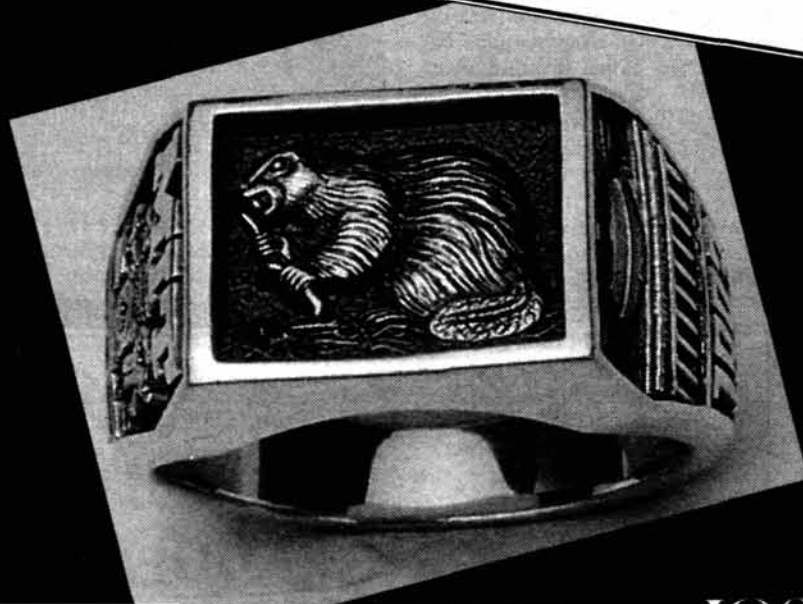
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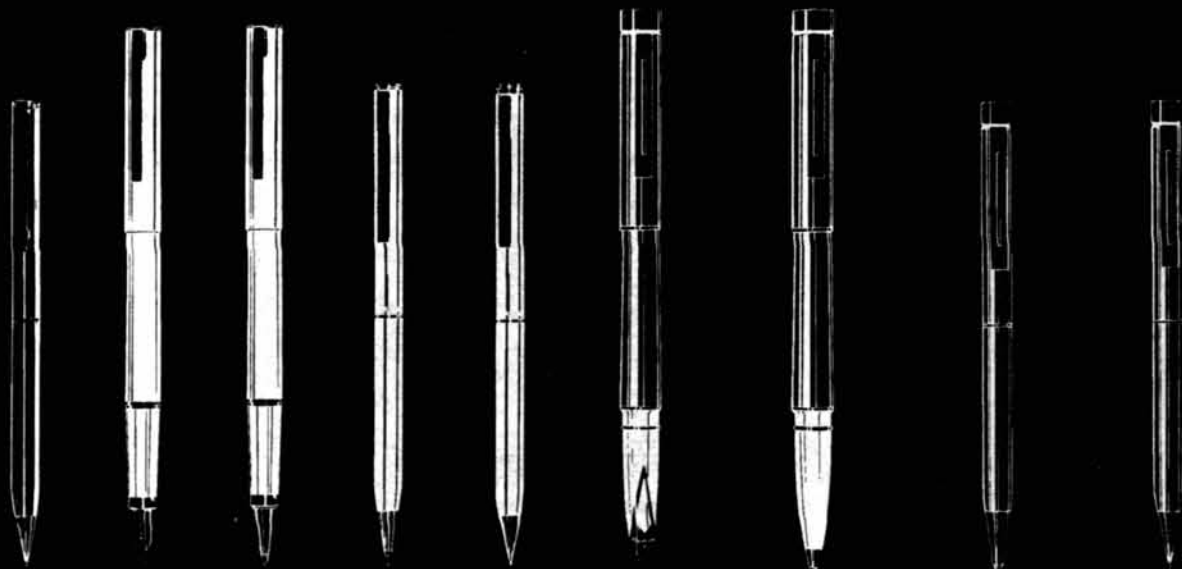


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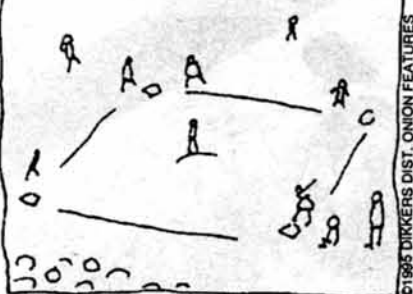
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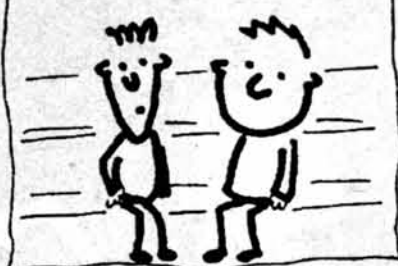
Jim's Journal

by Jim

Steve asked me to come to a baseball game today.



We sat and talked during the slow parts of the game.



Steve isn't really a baseball fan or anything, but we decided it would be fun.



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— New York Times Book Review

PAPA FLASH & THE WONDERS OF STROBE ALLEY

SEEING THE UNSEEN

Dr. Harold E. Edgerton and the Wonders of Strobe Alley

edited by Roger R. Bruce

introduction by James L. Enyeart

essays by Douglas Collins and Joyce Bedi

"Just as place-names like Cape Canaveral and Kitty Hawk have become cultural artifacts, so has Strobe Alley entered the history of photography and engineering as a kind of icon." — from the introduction by J. Enyeart

Harold "Doc" Edgerton's stop-action stroboscopic flash photographs — the spiked diadem of a milk-drop splash, the path of a bullet, a hummingbird's wings — are wonders of both art and science. For decades these amazing images poured out of MIT's "Strobe Alley," Doc's name for his lab rooms and the corridor into which so many of his experiments seemed to spill. Previous accounts of this work have focused on the artistic quality of these images. *Seeing the Unseen* differs in its dual focus on the life and the science of this exemplary teacher/entrepreneur whose native curiosity led him to fashion wonderfully imaginative means of stopping time to investigate the details of natural phenomena.

A biographical essay by Douglas Collins traces Edgerton's odyssey from Aurora, Nebraska, to Cambridge, Massachusetts, where he taught several generations of engineers to think creatively, and where he developed the tools that allowed him to capture high-speed photographic images. And an essay by Joyce Bedi reviews the historical antecedents of Doc's innovative technology. Intermixed are technical sidebars that explain the tools and techniques of high-speed photography. The essays are accompanied by 143 illustrations from Edgerton's work.

Seeing the Unseen also contains an "electronic gallery" — a Kodak Portfolio Photo CD for both Macintosh and Windows — with 122 additional images, selected primarily for their aesthetic appeal.

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THE ARTS

Technique effectively captures MIT student life**TECHNIQUE 1995**

Lee Zamir '95, Layout Editor.

Bridget M. Hanser '95, Managing Editor.

Ana T. Echániz '96, Photography Editor.

368 pp.

By Evelyn Kao

STAFF REPORTER

As a graduating senior, I would say that I am pleased with this year's *Technique*. This college yearbook has a hard task: It must record what the MIT experience was to a large, "diverse" group of students. It is impossible for *Technique* to please everybody. However, I believe that *Technique 1995* has much to offer the different members of the MIT community. It effectively captures in pictures many different aspects of MIT, from sports to studies to living groups, and will serve me as a reminder of what I found MIT to be.

The book is broken up into signatures (groups of sixteen pages). The first two signatures are mainly displays of various MIT buildings in color and duotone. There are some amazing pictures of the Institute with which the *Technique* staff has, in many cases, managed to transform the mismatched, looming buildings into geometrical pieces of light and color. Included among these pictures are the Boston skyline and the police car hack on top of the big dome. The pictures are generally clear, interesting, and well-done.

The first titled section is called "Journal." It provides a short history of the world and of MIT from February 1994 to February 1995 using a timeline that is interspersed with news articles and dated pictures of MIT events.

The next section, entitled "Life in Hell," provides us with a closer look on student life by including photographs of different aspects of MIT that are universal to most students — vital MIT things like Athena, alcohol, caffeine, lectures, studying, partying, dorms, "Courses from Hell," and numbered everything. The last subsection, "Questions & Answers from Hell" is the result of the questions that were pasted on the columns at the beginning of the infinite corridor: "What makes MIT MIT?" and "What made you

laugh/cry at MIT?" It is one of the most interesting sections of the yearbook and offers direct feedback from members of the student body.

The remainder of the book focuses on students. The sections entitled "Clubs," "Athletics," "Living Groups," and "Seniors" draw attention from the buildings to their inhabitants, the students. I liked the many photos of students acting, playing instruments, singing, running, jumping, and attacking. Each club or sport has an "action" shot. Unfortunately, in doing so, the staff neglected to include a team picture of any kind, which means that most members of the clubs or athletic teams are not represented.

Overall, this year's book is an improvement over those of the last few years. Lee Zamir '95 deserves much praise for the layout of the book. The overall look is well-planned and consistent: there is continuity throughout. The break pages are understated and elegant with simple lines and pictures to indicate what is to come in the next section. Attention to detail will provide the viewer with something new to see each time the *Technique* volume is opened.

While there are more different people pictured this year, more could still be done to give the yearbook a more personal feel. The number of candid student pictures should match the number of pictures of the Green Building. While these photos have much artistic value and are pleasing to the eye, it is questionable that students will value the pictures of buildings over more pictures of people.

Fifty years from now, I will be able to come back to MIT and still see the buildings, in all their splendor and ruin. It is also too bad that some of the team pictures are not in the yearbook, and there is also a definite lack of professors. This year's *Technique* is a bit shorter; perhaps if it were longer there could have been a few more pictures of people.

In general, *Technique 1995* is well done, and with its tasteful black and gold cover and high-quality photographs it is something that I am glad to own.



Technique 1995 is a tasteful keepsake that could still use more photos of people.

Chorallaries' Earshot infuses too much sensitivity**EARSHOT**

The Chorallaries of MIT.

Dean Cerrato G, director.

By Scott Deskin

ARTS EDITOR

The Chorallaries' latest release, *Earshot*, comes a scant year after their last release, *Better Late Than Never*. While the group is eager to serve up renditions of songs from their most recent *a capella* performances, I personally have doubts about what purpose this album can serve. After all, how much can a group change in one year? Perhaps the Chorallaries are eager to dispel the notion that their interpretive abilities (though not their technical ability) has diminished in recent years, as seen in the increasing languor of the last several *Bad Taste* shows. However, if *Earshot* isn't a technical marvel, it does give the

group a much-needed shot in the arm as far as vivacity is concerned.

As with the previous album, the songs are carefully-selected pop confections that are primarily arranged for solo voice and accompaniment. With no instrumentation other than the human voice to carry the group, the ensemble comes together best on the backing vocals, which primarily consist of imitation drum beats and various choral intonations that provide a firm basis for each of the songs on the album.

To kick things off, Duran Duran's "Rio" finally gets the studio treatment. The sound tends toward overbrightness, and the voices which simulate synthesizer hooks and drum machines sound more cheezy than breezy, as if the group were locked into one of its "Tewhey" or "O.J." parodies at the *Bad Taste* concerts. The Indigo Girls' "Airplane" lends itself to a better *a capella* interpretation,

although the "jing-jangs" grate after a while, and the pretentiousness of the lyrics — "closer my God to thee" — isn't suffused from the original version, no doubt.

Two compositions by Sting, "Mad About You" and "Synchronicity I," find the group settling into a more relaxed groove (although some dead spots mar the technical fervor of the latter song), and R.E.M.'s "Find the River" (with a heartfelt solo by arranger Peter Cho '97) are all welcome efforts, although the lyrics are still weighty: One wonders if the Chorallaries strive to find "sensitive" songs that complement their eager-to-please stage persona.

As always, most cover versions fare best when they stick close to the spirit of the original song. This is evidenced on the playful and fast-moving rhythms of Thomas Dolby's "Blinded Me With Science," Peter Gabriel's "Kiss That Frog," and the B-52s' "Love

Shack." Alright, so Michael Daly '95 is no Fred Schneider (in the case of "Love Shack"), but these songs showcase the group's finely-tuned vocals that combine and adapt to the frivolity of their material.

When an *a capella* group like the Chorallaries focuses its talents on humorous (or lascivious) pursuits, their eager human-orchestral sound has a personal function. When that same group tackles sensitive romantic ballads, for the most part, vivacity turns to banality and cliché: I don't question the competence of the group members, but I think that some more upbeat numbers could help.

In short, *Earshot* is a solid effort that most Chorallaries fans will definitely want to pick up. For non-diehard *a capella* observers like myself, the album serves as a technically proficient reminder of what makes the Chorallaries such a good ensemble; yet, at the same time, it leaves me wanting much more.

Authors deconstruct Europe in a hilarious student guide**LET'S PARTY EUROPE**

Written by Sam E. Khedr, Mark J. Maxam, Jessica Fernandes and Kim Soenen.

Vagabond Publishing, Inc.

By Teresa Esser

STAFF REPORTER

The time has come," the authors declare. "[The sound of rolling drums in the background] ... it's time for your transatlantic sling-shot. Woohoo! Jubilation! Freedom!! Mayhem!! ANARCHY!!!!" "You're leaving everything behind," the authors warn, "your family, your significant other, your dog, your car — and, lest we forget, your student loan or Am-Ex payments. The moment has come."

From Amsterdam to Vienna, from London to Monte Carlo, *Let's Party Europe* introduces readers to an Old World completely unlike the one they learned about in college. Instead of wasting your time telling

you useless and largely irrelevant information about the history of the countries you are visiting, authors Sam Khedr and Mark Maxam get straight to the point: How far do readers have to walk to get themselves a pint of Guinness?

The book is divided up into chapters devoted to Europe's largest cities, and each chapter is divided further into sections: Intro, Tourist Spots, the Scene, Night Life, and Observations. Far outside the collegiate sphere of European history, etiquette, or political correctness, the Europe of Khedr and Maxam is designed for the recent college grad who is as sick of rules as they are.

Viewed from another perspective, *Let's Party Europe* provides an interesting study into the linguistic limits of artificial intelligence. Vagabond Publishing's computer dictionary caught the glaring spelling errors, but the following homonyms escaped its notice: "a role of film," "Many residence [of a city],"

"the scull of a hippopotamus," "the perfect place to kick-pack with a beer or snack while waiting for your morning train," or, of Budapest, "[Hungarian] Babushka mamas rein over their hardy homemade pots." And so on.

However, the social insights and observations made by the extremely friendly and gregarious narrators more than make up for the grammatical discomfort. Take a look at what the authors say about these cities:

Alicante: "Fat Germans on the beach, but so what."

Copenhagen: "...if your Copenhagen adventure is a one-or two-day kamikaze raid, we suggest you forego the expense of lodging, and just hang out at the Hong Kong."

London: "Everything in London just sits in your face, and any building that has a historical disposition will say so just by looking at it."

Paris: "The ability to sit in a cafe, graceful-

ly killing time and spending money, is an art form in itself that leaves passers-by wondering: 1) How can you afford to sit at a cafe for four hours on a Wednesday afternoon drinking coffee? 2) How can you earn enough money to dress so well if you're always sitting at a cafe for four hours at a time drinking coffee?"

The narrators' advice is sound, and much of it has been gleaned first-hand from other American expatriates. From Caroline Lee of Williamsburg, Virginia: "In Madrid, go to Joy Disco — don't let the high price deter you — it's worth it (but get drunk first.)" On the subject of Rome, Stacey Shear from Atlanta, Georgia, observed that "Guys in Italy cinch their jeans really high — they all have wedgies."

On the subject of food, authors Khedr and Maxam cut straight to the facts: "Food-wise,

LSC

This Summer



I.Q.

Raiders of the Lost Ark

Apocalypse Now

Dirty Dancing

Free Sneak Preview: Apollo 13

The Addams Family

The Freshman

Speechless

Ladyhawke

The Godfather

Monty Python's The Meaning of Life

The Godfather Part II

My Cousin Vinny

The Godfather Part III

Dirty Rotten Scoundrels

What's Eating Gilbert Grape

Misery

The Fisher King

Cinema Paradiso

Ferris Bueller's Day Off

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ON THE SCREEN

— BY THE TECH ARTS STAFF —

★★★★: Excellent
 ★★★: Good
 ★★: Average
 ★: Poor

★★★★ Before the Rain

This movie tries too hard to be everything to everyone. While director Milcho Manchevski scores big by beginning his movie in a Dostoyevski-era Russian Orthodox cathedral, he ultimately teases the audience by beginning an innocent love story and then shooting holes in the leading lady. Because the movie is about war, its violent content is to be expected, but Manchevski's move to switch the emphasis from a mute monk to a Pulitzer Prize-winning photographer without finishing his original story could be construed as sneaky. However, the film is filled with stunning images, with an intricate structure that ties three separate stories together under an artistic exploration of life and death. If you like artsy political statements, this film's for you. —Teresa Esser. *Brattle Theatre; Wednesday, June 14.*

★★★★ Blade Runner: The Director's Cut

The classic film *Blade Runner* celebrated its 10th anniversary (in 1992) with the release of the film director Ridley Scott originally wanted to make — without the annoying voice-over and the upbeat ending. The result is a wonderful, Kubrickian film with a meditative mood and a soaring Vangelis score. Harrison Ford, Rutger Hauer, and Sean Young give career performances in an apocalyptic urban nightmare of the future that was and may still be years ahead of its time. Worth seeing over almost any "new" movie currently playing. *Brattle Theatre; Sunday, June 11.*

★★★ Crimson Tide

Tony Scott's latest action film (produced by the Simpson-Bruckheimer team behind Scott's *Top Gun* and *Days of Thunder*) stars Denzel Washington and Gene Hackman as a pair of feuding commanders on the U.S.S. Alabama, a submarine poised to deliver nuclear warheads to a Russian rebels who seize a missile base and put the world on the brink of World War III. Predictably, in the tradition of submarine films like *The Hunt for Red October*, the suspense factor is very high: The main characters are positioned for a face-off concerning an order to launch the missiles and an incomplete message which could possibly revoke the order. With Hackman as the

hawkish commander and Washington as the idealistic lieutenant, the remainder of the plot details effortlessly fall into place; however, the film is so skillfully done, you don't mind being shown these situations again when you're enjoying the ride. —Scott Deskin. *Sony Cheri.*

★★★½ The Englishman

The Englishman is a low-budget, feel-good movie that excels at providing an in-depth look at provincial life in early twentieth-century Wales. The plot is simple: Two English surveyors (Hugh Grant and Colm Meaney) discover that "The First Mountain in Wales" is but a 984-foot hill. Outraged, the townspeople take it upon themselves to add sixteen feet of dirt to their beloved Fillan Garoo. Humor and World War I references add poignancy to this piece; in all, it is extremely well done, if a bit too patriarchal. —TE. *Sony Nickelodeon.*

★★★ French Kiss

French Kiss is an very good movie with a strong cast and well-crafted humor. Kate (Meg Ryan) chases her fickle fiancé Charlie (Timothy Hutton) to Paris to win him back

from a beautiful French woman (Susan Anbeh). On the plane trip, she encounters a mysterious Frenchman named Luc (Kevin Kline), who immediately cures her fear of flying. Luc, however, is not all that he appears to be. He offers to help Kate win back her fiancé only so he can recover a necklace which he has hidden in her bag. As Luc challenges Kate to rethink her life, she gradually becomes less fearful and more confident — even the man who abandoned her hardly recognizes her after a reunion. Luc's growth in integrity parallels Kate's growth in capability. Both Kline and Ryan are veteran performers who execute punchlines flawlessly. —Jimmy Wong. *Sony Copley Place.*

★★★ I.Q.

Those who enjoyed *Sleepless in Seattle* may initially be shocked that Meg Ryan has become a doctoral candidate in mathematics in her new movie, *I.Q.* Tim Robbins plays a mechanic who falls for Catherine (Meg Ryan), who happens to be Albert Einstein's niece. Her strong performance, as well as an exceptional performance by Walter Matthau as Einstein, makes this film a good addition

to the romantic comedy genre. Surprisingly, it is not Ryan or Robbins who stand out in the film, but Matthau. His crafty Einstein comes up with a crazy plan that begins innocently but soon draws President Eisenhower to Princeton University. —JW. LSC; Friday, June 16.

★★★½ Naked Lunch

The perfect companion piece to *Barton Fink*, David Cronenberg's adaptation of William S. Burroughs' novel focused on the creative process behind the book, rather than on the text itself. While Barton Fink dealt with a writer who could not find inspiration, *Naked Lunch* involved a man whose entrance into a world of drugs and homosexuality was inspiration enough that his book practically wrote

★★½ While You Were Sleeping

A romantic comedy with a lot of classic scenes. Sandra Bullock plays Lucy, a lonely Chicago Transit Authority worker who falls in love with Peter, a nice guy who rides the train to work every day. She's waiting for the right opportunity to meet him when one day, she saves him from a speeding train. He's at the hospital in coma, and through some misunderstandings, his family believes that she's his fiancé. Then she meets Peter's brother, Jack, and the plot thickens. The film is entertaining because from the starting situation, the story and characters evolve in a likeable way. It isn't jaded or cynical; it's a funny love story that your younger siblings, your girl/boyfriend, or your parents can enjoy. —Kamal Swamidoss. *Sony Copley Place.*

New York's under siege in third *Die Hard* film

DIE HARD WITH A VENGEANCE

Directed by John McTiernan.

Written by Jonathan Hensleigh.

Starring Bruce Willis, Jeremy Irons, and Samuel L. Jackson.

Sony Cheri.

By Kamal Swamidoss

STAFF REPORTER

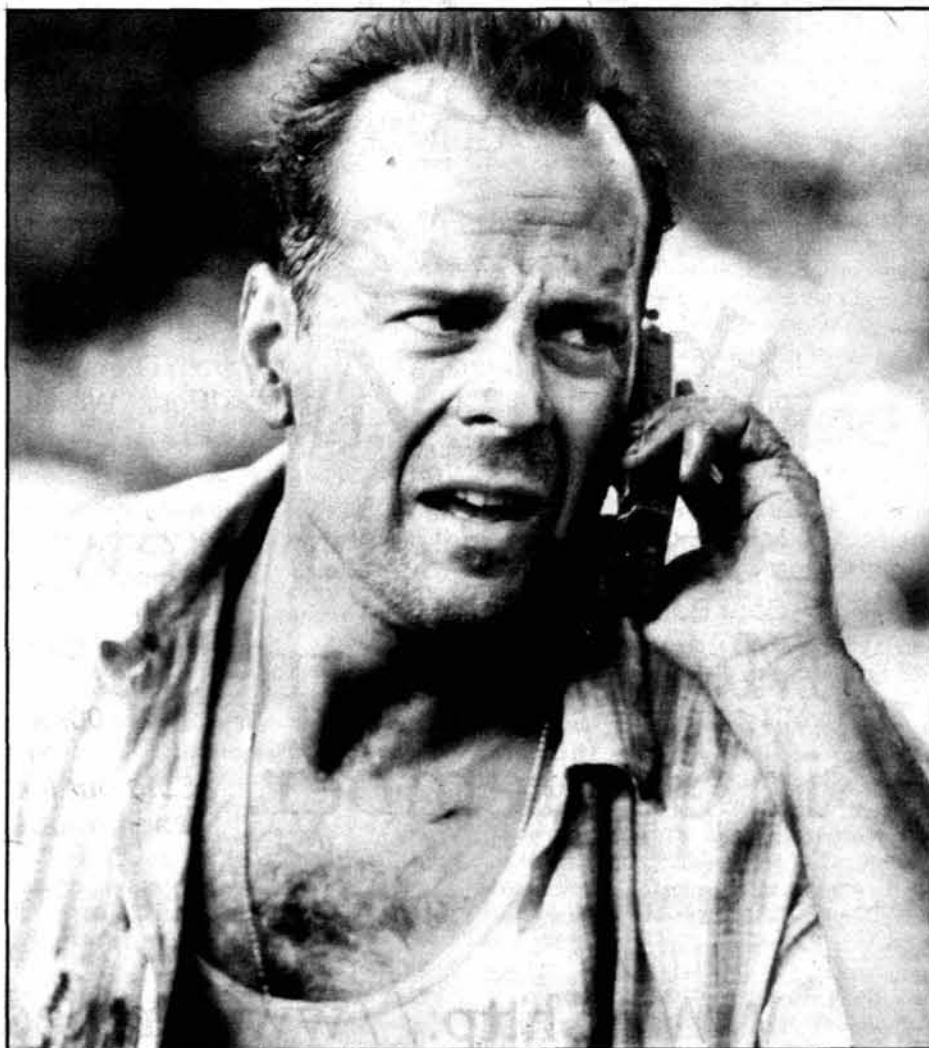
If you haven't already seen it, you're missing a good one. *Die Hard With A Vengeance* is the action-film king of this summer's excellent releases, including *Crimson Tide* and *Braveheart*. From the opening frames, when a bomb detonates in a department store — sending debris out into a crowded New York City avenue — you know early on that this film aims solely at maximizing action.

Some might contend that a film sequel can never reach the greatness that the first one achieved. Granted, *Die Hard 2: Die Harder* wasn't as good as *Die Hard*, but *Die Hard With a Vengeance* shows that a sequel can easily match the original. In fact, minute for minute, number three is also more action-packed than the first two, which were tied down to specific locations. The fact that it *Die Hard With A Vengeance* moves through a whole city gives the story many more opportunities.

However, the story in the original *Die Hard* was much more believable than this story. The sheer number of coincidental encounters between the good guys and the bad guys defies the laws of probability in favor of dumb luck. Such events make action films interesting, but too many of them can tarnish the effect.

The three stars act well, but their characters don't evoke as much emotion from the viewer as those in *Braveheart*. In this third film, the lead character John McClane (Bruce Willis) enlists the help of Zeus Carver (Samuel L. Jackson), a streetwise shop owner in Harlem, to engage in a battle of wits with criminal mastermind and explosives expert Simon Gruber (Jeremy Irons). Gruber, of course, is the brother of Hans Gruber (from the first film), and claims to carry a grudge against McClane. Despite this plot device, it was difficult to get past the actors on the screen and into the story: Deeper characterizations and a more believable plot would have helped.

There are two things that detracted from the general value of *Die Hard With a Vengeance*. The music was at best good, never extraordinary, and in one point strikingly boring. Second, the action sequences move extremely fast and don't allow for much casual analysis: a second viewing turned up several subtle cues critical to the story.



John McClane (Bruce Willis) has a bad hair day in *Die Hard With a Vengeance*.

Costello celebrates variety, history of pop music

KOJAK VARIETY

Elvis Costello.
Warner Bros.

By Scott Deskin
ARTS EDITOR

Elvis Costello's musical career has been as varied as that of any "survivor" in the past twenty years. Since he emerged at the vanguard of the late '70s' new wave, Costello has made forays into both country and popular music, exploring classical and avant garde textures in his songs. First and foremost, Costello has always remained a *songwriter* in the tradition of Bob Dylan, more than anyone else. And, like Dylan, his artistic relevance has been called into question quite often over the past several years by pop and rock critics (I remember a review of his last album, *Brutal Youth*, in *Spin* magazine, which cited the work as a product of his "warmed-over genius").

Costello, like Dylan, is just a pseudonym — a guise — for the real man behind the songs, and on *Kojak Variety*, a collection of songs recorded in the studio five years ago, Costello assembles a sweet and luminous homage to his musical influences. The fourth track on the album is a Bob Dylan tune entitled "I Threw It All Away," a simple, straightforward about a lost love from Dylan's 1969 album *Nashville Skyline*. That album reflected

Dylan's infatuation with country music stylings, and it's just one facet of the "rhythm & blues/popular ballads" dating from the 1930s through the 1970s which Costello explores on his album.

The songs don't share any common theme except that they're Costello's personal favorites. They're uncommon, too: Even the Bob Dylan tune is a relative unknown. Nevertheless, Costello easily traverses different genres (blues, pop, r & b) and infuses each song with expression and soul. In this context, songs by the Supremes and Randy Newman fit comfortably with the softly-rendered blues of Willie Dixon and Mose Allison.

Costello has assembled a group of stellar studio support that faithfully interprets these songs without overwhelming the vocals. Unlike Eric Clapton's highly overrated *From the Cradle*, the musicians don't perform the songs to perfection: They take cues from the lead vocalist and approach the material with



Elvis Costello renews his "popular balladeer" persona.

the same relaxed wit and verve. Neither the revamped country or blues numbers here betray indifference or lack of imagination. Costello's voice has its limitations, but only on Little Richard's rocking "Bama Lama Bama Loo" does it show signs of strain.

Two of the tracks are definitive renditions.

I haven't heard Mose Allison's "Everybody's Crying Mercy" before, but what was once undoubtedly a blues number becomes a pained, impassioned ballad with the Costello's gently caressing voice. On Ray Davies' "Days" (previously released on the *Until the End of the World* soundtrack), Costello's double-tracked backing vocals add an ethereal quality to the lines "You took my life / And then I knew that very soon / You'd leave me." Costello contributes guitar to this song, using it for reverberating feedback which he admits in the album's liner notes "happened to sound exactly like the tree-frogs that could be heard in the trees after dark." It's weird, yet it's also oddly fascinating.

Kojak Variety is a great album: The liner notes provide a rather extensive insight into his inspiration for choosing these songs. Since Costello leaves the songwriting to other people, he's free to explore his musical techniques rather than lyrical density. These songs provide a piece of the puzzle in his enigmatic career, chronologically between the solid, mainstream crossover bid *Spike* and the muddled wordplay of *Mighty Like a Rose*. Since I prefer his earlier work, I'll approach his future efforts with some caution. But *Kojak Variety* is a lyrical and aural treat; pop music that's mature and frivolous all at the same time.

Gibson directs a historical triumph in *Braveheart*

Braveheart

Directed by Mel Gibson.
Written by Randall Wallace.
Starring Mel Gibson, Catherine McCormack,
and Patrick McGoohan.
Sony Nickelodeon.

By Teresa Esser
STAFF REPORTER

Mel Gibson's *Braveheart* is a curious composition of historical legends and modern dramatic techniques woven together into a tapestry of connected stories. With the plot based loosely

on Scotland's real-life struggle for independence from England and the screenplay straight from modern Hollywood, the three-hour show reminds one more of *Lethal Weapon* and *Pulp Fiction* than the other medieval Scottish movie of the summer, *Rob Roy*.

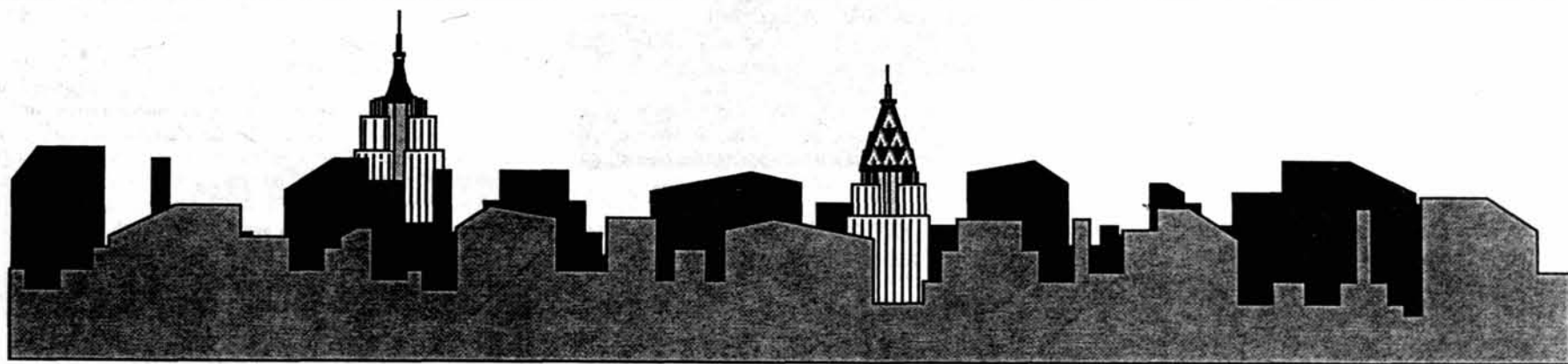
The movie's plot is rather complex. Young William Wallace follows his father and brother to a peacemaking meeting in a remote Scottish barn, where they find their noble countrymen dead and swinging from the rafters. When William's father and brother ride off to avenge this trickery (and

meet their own deaths), young William is adopted by his cosmopolitan uncle. Schooled in Latin and French and introduced to the wonders of continental Europe, William returns years later to his tiny village determined to settle down and marry his childhood sweetheart, Murron (Catherine McCormack). Wallace's domestic bliss is extremely short lived, for the evil British lords slit Murron's throat.

Thus provoked, Wallace assembles his friends and neighboring clansmen into an army, burns the British forts and charges toward the English border.

Braveheart increases its appeal by contrasting these highland goings-on with portrayals of British regal life. As evil King Edward I (Patrick McGoohan) grows older, he worries more and more about what will happen after his death. Frustrated with his heir's homosexuality, he literally picks up his son's lover and throws him out a tower window. The French-born queen-to-be, Princess Isabelle (Sophie Marceau), kills time by wandering through the castle corridors, gossiping with her lady-in-waiting and lamenting her

Braveheart, Page 18



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Braveheart is a bloody but fascinating drama

Braveheart, from Page 17

nonexistent love life.

The Scottish clansmen and the English royalty intersect when Isabelle becomes infatuated with the passionate peasant hero, Wallace. Sent by the tricky king to offer gold and a truce to Wallace in person, her crush intensifies when she learns that the "savage" is trilingual. Suffice it to say that their covert liaison threatens to reconfigure the royal bloodline.

Although the Scots have a impassioned ringleader and military strategist on their side, their cause is weakened by the handful of wishy-washy and traitorous nobles who managed to survive Edward's last round of peaceta-talk hangings. In addition to these internal conflict, the English army has a decided technological advantage.

Starving, ill-equipped and vastly outnumbered, the rebellious Scots take on legion after legion of Britain's best in a series of bass-underscored battlescenes guaranteed to get your heart pounding. "They fought like warrior poets," the narrator says. Unfortunately, they died like misguided lemmings.

Although a great many of the scenes in *Braveheart* are unusually gruesome, it is difficult to avoid being drawn in to the ubiquitous life-and-death struggles. The battle scenes may be far-fetched and the sheer quantity of impaled, gouged, hacked, or smashed bodies a bit extreme, but the film as a whole is immensely satisfying.



William Wallace (Mel Gibson) gets knighted by Scottish noblemen in the historical epic *Braveheart*.

Let's Party Europe is a humorous, helpful guide

Europe, from Page 14

in many ways Europeans are still going through the hunter-gatherer phase of evolution...anything they don't obliterate by deep frying, they drown in oil that has the same smell and consistency as Exxon crude."

The narrators have advice on just about everything, from hip-hop to personal hygiene. "If you're worried about wearing the same

shirt five days in a row," the authors tell us, "it's okay!...Regarding that three day stink you may acquire — a few days smelling around Europe will convince you that nobody will notice."

All jokes aside, this reviewer is certain that MIT grads will appreciate the great length to which the authors have gone to assure fairness and objectivity in their quantitative analysis of Europe's respective dens of

inebriation. An establishment's "fun factor" was derived through the use of a far-fetched mathematical equation, as follows: "where *C* represents capacity in numbers of people; *S* is the raw size of the establishment; *E* is the appearance of the exterior; *L* equals the length of the bar in meters (if there was no bar we entered zero); *A* is the quantity of alcohol available on premises; *P* is the average price of beer; *D* is the decibel level mea-

sured at full capacity); *G* is the layers of graffiti found in the men's room; *B* is how often the establishment gets busted by the cops; and the upshot — *X* is any damn thing we please."

An excellent alternative to traditional travel guides, *Let's Party Europe* conveys its nonsense advice in a humorous, readable, and portable package.



The MIT Public Service Center extends its sincerest gratitude to all MIT groups and individuals who made the Third Annual MIT/Cambridge Science Expo on May 3rd, a celebration of science for Cambridge 5th through 8th graders, a tremendous success:

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—Dr. Henry H. Kohn, Engineer and Industrialist, Co-Founder of MIT's Francis Bitter National Magnet Laboratory

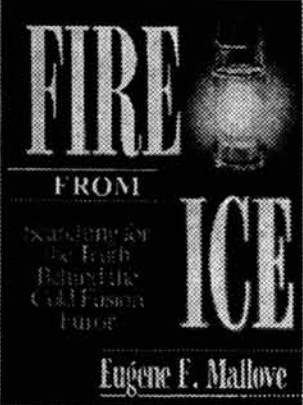
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—Dr. Frank Sullivan, former MacArthur Fellow Science Historian, MIT Program in Science, Technology, and Society

"I highly appreciate your spirit in searching for the truth behind the cold fusion furor. Cold Fusion research will continue in China no matter how difficult it will be, since we realize that this is very important for the world's energy shortage and for third world countries that need energy and lack research funding."

—Professor of Physics Xing Zhong Li, Tsinghua University, Beijing, Head of the Chinese Fusion Power Program

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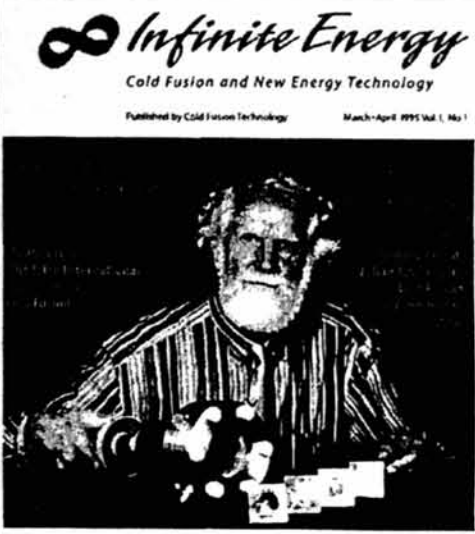
Cold Fusion and New Energy Technology

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Infinite Energy
Cold Fusion and New Energy Technology
Published by Cold Fusion Technology March-April 1995 Vol. 1, No. 1

Table-Top Alchemy: Roger Stringham's Cold Fusion Reactor Creates Helium-4 and Lots of Excess Heat

An Open Letter

Dear Graduates and Friends of MIT:

Do you know that a U.S. corporation's portable ultrasonic reactor has created helium-4, helium-3, and hundreds of watts of excess power from palladium foils in heavy water—reproducibly? Do you realize that tritium is now being generated—reproducibly—from palladium and deuterium in cold fusion experiments at Los Alamos National Laboratory? Dozens of other laboratories have also generated tritium in chemical environments. Imagine the dismay of the nuclear physicist in Texas—a skeptic—who was startled to observe numerous radioactive transmuted elements in palladium electrodes from his cold fusion experiments! Are you aware that Japan's MITI and numerous Japanese corporations are developing "New Hydrogen Energy," i.e. cold fusion?

Do you know that a university physics group in Italy is working with Fiat Corporation on a high-temperature process in which nickel and hydrogen have liberated hundreds of megajoules per mole of material—with no sign of an upper limit to energy release? Do you know that several commercially available devices exist (in the United States and in a province of the former Soviet Union), which generate intense cavitation in water and produce continuous excess power in the multi-kilowatt range, in some cases over 400% excess over input power? These units are already heating buildings and are beginning to be exported to foreign countries.

If you did not know about these astonishing developments please educate yourself by reading about them in the pages of *Infinite Energy*! To be sure, these facts are highly disturbing to those with knee-jerk reactions to data that they can't explain with existing theory. The phenomena are now absolutely confirmed, we lack only a firm microphysical explanation. One of the greatest paradigm shifts in the history of science is occurring right now.

That is the good news. And now for the bad news: In 1989, after the announcement of "cold fusion" at the University of Utah, certain members of the MIT community gave MIT a very bad name as a "bastion of skepticism" against cold fusion. One official, who will soon be leaving MIT, signed the rush-to-judgement negative DOE report against cold fusion in 1989. In 1995, he still says, "cold fusion is dead." Do you have any idea what happened behind the scenes here? Did you know, for example, that allegedly negative results on excess heat at MIT in 1989 were anything but negative, and that these results continue to be used by the US Patent Office to block hundreds of American patent applications in this critical field? The MIT Plasma Fusion Center held a "Wake for Cold Fusion" on June 26, 1989, weeks before it even compiled the data on its excess power experiment. Isn't it about time that something was done about this? What if in 1903-1908 prominent members of the MIT faculty had attacked the Wright brothers as incompetents and frauds and what if they had defended their government grant for hot air balloon experiments against the invention of controlled heavier-than-air flight?

Think about it.

Sincerely,
Dr. Eugene F. Mallove
MIT '69 (Aero/Astro)

"Let us hope that in a decade or two, or at least, just before the beginning of the twenty-first century, the present merger years of theoretical physics will come to an end in a burst of entirely new revolutionary ideas similar to those which heralded the beginning of the twentieth century,"

George Gamow, Russian-American physicist, 1904-1968

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IAP MIT Cold Fusion Day 1995

Four (4) two-hour VHS video tapes are available as a set, or individually, which were only slightly edited from professionally taken video footage of the day-long IAP Cold Fusion session at MIT on January 21, 1995. The tapes include the following material:

TAPE#1
Dr. Eugene F. Mallove
(Cold Fusion Technology, Concord, NH)
"Cold Fusion and New Energy Technology - An Overview"
Dr. Peter Graneau
(Northeastern University Center for Electromagnetic Research)
"Anomalous Forces in Water Plasma Explosions"

TAPE#2
Buford ("Ray") Conley
(MIT, graduate student, Dept. of Aero/Astro Eng.)
"Light Water Excess Heat Experiments"
Fred Jaeger
(ENECO, Salt Lake City)
"Patents and Commercialization"
Professor Peter L. Hagelstein
(MIT Dept. of EE&CS)
"Cold Fusion: What We Know and What We Don't Know"

TAPE#3
Professor Peter Hagelstein
(CONTINUED from TAPE #2)
"Cold Fusion: What We Know and What We Don't Know"
Professor Keith Johnson
(MIT Dept. of Materials Science and Eng.)
"Progress in the Theory of Excess Heat" *and*
"Excess Heat" - The Movie, now being made by Hollywood!

TAPE#4
James L. Griggs
(Hydro Dynamics, Inc., Rome, Georgia, USA)
"The Hydrosonic Pump: Excess Power and Other Effects"

Bertil Werjefelt
(Poly Tech(USA), Hawaii)
"Energy from Magnetic Materials and Magnetic Fields"
Dr. Eugene F. Mallove
Concluding Remarks

The tapes include the speakers' presentations as well as question and answer sessions. There is footage of the Hydrosonic Pump under test as well as close-up footage of rotor surface melting effects. Bertil Werjefelt shows footage of experiments in his own laboratory. There are scenes of Japanese researchers from Sumitomo, Hitachi, and other companies and universities now involved in their claimed extraction of energy from magnetic materials. These efforts are now said by these researchers to be proceeding toward commercialization. Actual experiments are seen in progress. The tapes are VHS cassettes in NTSC format and range from 120 to 127 minutes each.

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An Interview with President Charles M. Vest

Vest Discusses Future Role of Institute

By Jeremy Hylton
TECHNOLOGY DIRECTOR

The first four-and-a-half years of Charles M. Vest's tenure as president of MIT has been a period of tremendous change for the Institute.

The growth of MIT as an institution of international reputation was supported largely by federal funding, in particular funding motivated by the Cold War. The end of the Cold War, a Congress increasingly skeptical of the value and integrity of the nation's research universities, and now a drive to balance the federal budget have created an environment far different from the one inhabited by his predecessors.

Two weeks ago, I spent a little over an hour with Vest discussing the problems the Institute faces and his thoughts on the future. Though Vest was obviously concerned by the House budget that had been passed a few days before and more generally about a weakening of the government's commitment to funding research and education, Vest came across as optimistic about the future.

The Institute will be well-served, Vest said, by continuing to do what it has always done — performing top-notch research, exploring new and emerging research areas, and providing a rigorous education in science and engineering.

Vest described new research programs, like the newly-created Center for Learning and Memory, with enthusiasm and expressed hope that re-engineering will help to eliminate the Institute's budget deficits. He talked about the challenges ahead in defining the future of graduate education and bringing more women and minorities to the faculty.

But it is Vest's work with the federal government that is the most important accomplishment to date. Whether he wants to or not, he seems unable to avoid it: Our interview was interrupted briefly when he received a phone call from a fellow university president with whom he discussed the latest developments in Washington.

The Tech: The House of Representatives just passed a budget resolution yesterday that contains very significant cuts in support for science and university research. The cuts made headlines in the New York Times — and they seem particularly threatening for MIT, because so much of our research is government funded. What can the Institute do to cope with the changes that are coming?

Vest: I think we ought not only to look at the immediate actions but the flow of things over a decade or so. There is no question that research universities are in for a very difficult period. First the Congress and now the administration are both talking about balancing the budget over seven years, and that implies about a 35 percent cut in domestic discretionary spending. And while domestic discretionary spending is in fact a very small part of the federal budget, it contains virtually everything that supports research and education. So these are very scary times.

Part of this seems to stem from historical trends. We are at a watershed that is largely driven by the end of the Cold War. The change in America's competitive position in the world and the relatively slow economy we've had, and a rather major infusion of a kind of populist philosophy that doesn't value the things we do as much as it should — we've lost sight of federal funding in education and research as investments. People are looking at them simply as costs and costs to be cut down. Until we get back to recognizing them as essential investments in the future, we're going to have trouble, whether it's the

Republicans or the Democrats.

The image of the universities was rather unfairly tarnished during the period of time in which all the investigations over indirect cost reimbursement and so forth were going on. That certainly set a tone in Washington that has been very difficult in general to deal with.

We are seeing the mission agencies, like defense, energy, and NASA being cut back. The National Science Foundation and the National Institutes of Health are likely to continue to be treated relatively well, but I don't think even they will be spared some reductions. We're hearing 5 to 10 percent cuts.

How do we deal with it? Strategically, some of the answers to that are very clear. This problem is one of the major driving forces for our re-engineering effort. One of the things we need to do is simply get the Institute's costs down. We have been working very hard to get all of faculty salaries moved onto the endowment. That will dramatically reduce the dependence of faculty salaries on research grants and contracts, so that as funding declines, it can at least be focused on student support and infrastructure-building and things like that. It's slightly painful at the moment, but in the long run it is an important piece of our strategy.

We have just adopted a fairly complicated but very comprehensive and I think fair and thoughtful plan for the funding of graduate student research and teaching assistance tuition reimbursement. That

Our students keep getting better. Our applications and acceptance rates went up this year quite dramatically. Despite the slowdown of the economy and the cost-cutting, we've hired well over 100 faculty in the last four-and-one-half years. If we can just define our goals and make some shifts and changes ... I think we'll do just fine.

includes, by the way, putting some money in the bank over the next few years to build a reserve, so that after fiscal year 1998, when the new rules kick in, we'll be in a position to pick up about 45 percent of the cost of tuition to our RAs and TAs. If current levels of funding continue during this period, that will leave us in fairly good shape.

We may see other attacks in the meantime. As I look ahead, I think the biggest danger we face in this regard is the possibility of very severe and quite highly targeted budget cuts. What I mean by that is if the Department of Energy or Department of Defense or NASA decide to cut out entire areas of support or entire major programs, then that might come down and hit a particular laboratory or discipline very hard here. I think that's more likely than just a continual degradation of support we get broadly.

The other area I'm very concerned about is that as the federal agencies' budgets get tight they are beginning to back away from paying significant portions graduate student tuition. That's a very dangerous trend not just for MIT but nationally, because it begins to force a separation of the education and research functions, and create incentives for hiring full-time researchers or certain kinds of post-doctoral fellows as opposed to graduate students. In the long run that's not a wise thing for the country to do.

It's a very tough time and we're doing our best to see our way through it. We obviously are interested in increasing the amount of support we get from industry and other private sources. We've come along slowly; more than 23 percent of our research income is now from non-federal sources. I also think it is

totally unrealistic that MIT or America's research universities could replace government funding with industrial funding. It just will not happen. It is a function that the government must support.

The Tech: What do you think is at the root of the change in the government's priorities. Is it really a popular notion that the government shouldn't be supporting this research or is it a by-product of the drive to reduce the deficit? And how do you work to change people's attitudes?

Vest: There are several things that are happening all at once. The most immediate problem is that the Congress appears to be deciding to balance the budget and cut the deficit over a fairly short period of time. And the general approach is very single-minded: Let's just get the budgets cut and worry about putting the pieces together again later. That's what's creating these very immediate dangers.

But beyond that there are a lot of things going on. The end of the cold war removed the primary rationale the Congress had for supporting graduate education and research — and that was concerns about military security and a belief that the technology base needed to be very sophisticated and very strong. The other pillar of support was of course medical science and health care, and I think that continues to be a strong and important goal of the government.

Also whenever the economy is slow, people tend to turn somewhat against institutions, things that have at least the appearance of privilege and elitism. But we've both studied and in some cases been involved in sponsoring some scientifically-based public polling, to understand attitudes towards research and universities and the first thing that jumps out at you is that there actually is tremendous goodwill among the broad public for universities and colleges, and even for research.

But there is a very negative view among the so-called opinion leaders, namely politicians and journalists. That is very troubling to me because I think they are tending to represent things in ways that really aren't the will of the population. The broad public seems to still understand that investment in science is very important. They understand it most in terms of medical science, which I think is to be expected, but they are still excited about space and in general they think that what goes on particularly at high quality institutions is important and worth funding. So we've got to build on that.

We've got to be sure that other people are telling the story of the importance of our nation's universities, both to Congress and to the public at large. And that is beginning to happen. There was both an op-ed piece and a letter circulated around Congress that was signed by the CEOs of 16 big corporations of all different kinds — chemical, computer, automobile — country-wide. If you will notice, the last few days the *New York Times* has been writing both editorially and journalistically about the dangers of cutting back investment in science.

So the battle is far from over,

and there is more good will to be won. But we also need to be careful that we are in fact trying to work efficiently and keep our costs down at the same time we try to keep support up.

The Tech: When I reflect on what it is a university president must be doing, the hardest thing — and I think it must be harder with these changes going on — is trying to set intellectual vision for where the university is going. Could you talk a little about what your vision for the future is and where the Institute is headed?

Vest: Well first of all I appreciate your question. It's been a bit frustrating during these last four years that of necessity things in my office have been much more dominated than I would like by concerns of the federal government and public attitude and cost reduction and so forth. These aren't the things you get excited about; the frustrating part is that we've won a lot of battles, particularly in Washington, and largely winning a battle means what didn't happen rather than taking on something exciting and new.

And it has left me feeling very uneasy that both MIT and our universities more broadly have sort of been in a siege mentality. We have been operating very reactively and defensively, and we've had to in order to keep the whole system together. But it really is necessary not to get mired down in that and to keep moving ahead.

In reality, despite all these concerns and fears, the faculty are doing what they've always done: Defining the cutting edge, moving ahead with exciting new ideas. Some of the larger trends are already very clear.

One is continued movement towards and strengthening of all kinds of things associated with the life sciences. Biology has gotten stronger and better, and has certainly retained its place as perhaps the preeminent department in the country. We are beginning to see very significant enrollment shifts into biology and into areas of chemical engineering, brain and cognitive science, and environmental areas within civil engineering that build on biology. That's a clear mega-trend, if you will, that's going to continue and is very exciting.

That's enabled us to do things like initiate the new Center for Learning and Memory which is a very key thrust of the School of Science in the neurosciences that will be decades long in trying to understand the brain in fundamental ways — and ultimately have some kind of positive influence on the solution to problems of mental diseases that we now have in physical diseases.

I'm very excited about the progress that is really snowballing in building strong, innovative, and quite interdisciplinary programs in the environment. We're building international alliances and really have succeeded in getting faculty and students to work together very substantively across traditional disciplinary boundaries of science and economics and management and political science and engineering.

I'm quite convinced that if we look back a decade or more from now, we will see that MIT has led some very substantial changes in the nature of engineering education, particularly at the undergraduate and masters level. The first manifestation of this was the electrical engineering and computer science five-year combined bachelor's and master's degree program, but things are going on much deeper than that. We have to retain the great strength of analytical tools from mathematics, science and computing, but at the same time move much more strongly into practice-oriented activ-

ities — more synthesis, design, teamwork, understanding the social, economic, and business contexts better. I think that's beginning a very exciting new direction that will bring change almost as fundamental as the engineering science revolution we led back in the 50s through mid-60s.

The School of Architecture and Planning is undergoing a renaissance. They've made some wonderful hires of new young faculty. They are forging ahead with what the dean likes to call the architecture design studio of the future. Design has become an Institute-wide theme. We're getting lots of team-teaching across schools as well as across specific disciplines.

The Sloan School of course has completely redesigned its masters curriculum. It has reorganized itself in a new matrix fashion, to work a little more effectively. It is getting deeply involved in international matters, including distance learning largely though not exclusively concentrated on Asia.

The humanities and social sciences have just become better and better and more exciting every year — for example, what we're doing in music and theater arts. The economics department remains one of the very best in the world. Political science has really come up and is getting to be a very stimulating environment. There is broad interest in matters having to do with language throughout that school and spilling over into brain and cognitive science of course. Starting with the strength in linguistics that's been built around what Noam Chomsky and Morris Halle have developed here, but going into new ways for people to acquire new languages with multimedia interaction that has an underlying base of linguistic theory.

So I'm not at all pessimistic about what's going on. Our students keep getting better. Our applications and acceptance rates went up this year quite dramatically. Despite the slowdown of the economy and the cost-cutting, we've hired well over 100 faculty in the last four-and-one-half years. If we can just define our goals and make some shifts and changes that are more relevant to the role of the future, I think we'll do just fine. But there will be some pain and anxiety at the same time.

The Tech: The hardest part of setting the university's intellectual course seems to be deciding when things need to be closed — when something that we have done for a long time is no longer a field for cutting edge research.

Vest: Yes. Universities are not good at that. We'll probably have to get better.

The Tech: Where do think MIT may be doing work that is no longer as fruitful as it once was?

Vest: I don't think our problems in that regard are terribly serious because the MIT faculty is very entrepreneurial intellectually. I ran into a professor I'm very fond of in the hallway; he's an emeritus professor who has been retired for several years now, and I asked, "What are you up to?" He said, "I'm working on a hypermedia version of my textbook." That's MIT.

People change. They move ahead. They're looking for exciting new ideas, developing mechanisms like the world industry congress we'll hold next spring to get some dialogue with the external world about what's needed. I think on the whole people tend to not only to shift and adapt, but lead as well. But it may be that we will have to be a little bit more introspective, particularly in educational programs, and decide whether there are things that



Charles M. Vest

need to be cut out in order to foster others.

We'll probably have to do more of that, but those aren't decisions that should be made unilaterally from the central administration. But we may have to put in processes to think about that more consciously.

But it is a great challenge and universities aren't very good at it.

The Tech: I wanted to ask about some very immediate concerns. When do you expect to name the next deans of the graduate school and of undergraduate education and student affairs are going to be? And what is the status the searchers for a new library director and a new associate provost for the arts?

Vest: I have received the oral reports and written reports from both the search committee for the Dean of Undergraduate Education and Students Affairs and the Dean of the Graduate School. I know the slate of candidates each of them has proposed and I tried to keep those moving along quickly.

I expect that the two deans will be announced in the next few weeks. For the sake of students, I wish I could make the announcements before graduation, but these matters do take time.

The other two positions are coming more slowly. The Director of Libraries is a very important position in 1995 because of all places in the world, MIT really ought to be leading the way in library and library-like functions in the future. That committee is working very hard. They've identified a number of people, several of whom have been here for sort of a first pass interview.

The search committee for the associate provost for the arts is also moving at a determined pace. They are about to the point where they will begin inviting candidates to campus. Those two appointments should come later in the summer.

It's been difficult having so many offices open, but it's really a terrific opportunity to think of how the whole team fits together.

The Tech: You had a similar opportunity a year ago when you really re-organized the administrative side of the Institute. Now that a year has gone by, how successful do you think this re-engineering of the upper administration has been?

Vest: It was stimulated by the death of Constantine B. Simonides '57 [who had served as senior vice

Vest: Let's in fact start with that. Our endowment in round numbers is \$2 billion. That is a very substantial endowment, on the order of number 7 or 8 in size in the country. On the other hand, if one normalizes that to the number of students or number of faculty then we drop down to around number 35. So MIT certainly could use some substantial strengthening of its endowment.

MIT grew in the modern age largely on the back of federally sponsored research; because we are so heavily invested in science and technology, that's been the way we have grown. We are unlike many other private universities that have very large liberal arts components and other professional schools. So when you look at that endowment figure, it's not too surprising. We don't have a law school or a medical school.

The other thing is that there has not been the same level of tradition and expectation of giving back that's become inculcated in people from the Ivy League universities. We've traditionally had more first generation college students and people from the middle and lower-middle class who see engineering and science as a way up. So the whole dynamic is different.

But during Paul Gray's presidency, when we initiated and carried out most of the Campaign for the Future, we really began getting much more sophisticated and began building the networks of people across the country among our alumni and friends that really will pay off over the next few decades. It doesn't happen over night. We continue to work very, very hard on that.

The endowment is one of the really important things, particularly to keep the place affordable. We believe that before we get very far into the next century we're going to have to raise about \$100 million in endowment for scholarships. That's essential to maintain our philosophy of need blind admission. So we're working hard at that. I hope we get there.

The Tech: Looking at undergraduate education, there have been some changes over the last few years — the new biology

We believe that before we get very far into the next century we're going to have to raise about \$100 million in endowment for scholarships. That's essential to maintain our philosophy of need blind admission. So we're working hard at that. I hope we get there.

requirement and the review of the humanities requirements — but few really big changes. There is also a shift in enrollment towards programs like biology. What kind of changes do you expect in the future?

Vest: I think we'll see evolution rather than revolution, and I think that the seeds that the kind of changes we'll see in undergraduate education have probably already been planted. Over the next few years we'll begin to see those bear fruit in a variety of ways, and at the same time we'll start planting the seeds for change in graduate programs, which is what I see as our next major issue — from even the national perspective.

At the undergraduate level, we will tend to evolve according to what is perceived by young people as being exciting and having a great future. I think the real issue is how we retain the intensity and great excellence of analytical education that MIT has always provided, yet build a better understanding and skill base in our students for a world in which they clearly are going to have multiple careers and operate in international and much broader contexts than they did 20 or 30 years ago. We somehow have got to recognize that and it is very important that we do so without throwing

away the rigor that really gives us our uniqueness and I think gives our students a great advantage.

As I think about undergraduate education, I remain concerned personally about what we learned from the senior survey this year — in particular the perception on the part of very significant numbers of our students that both their self esteem and their creativity have not been expanded by their MIT experience. That's very troubling, because if you go anywhere outside of MIT, talk to employers, talk to graduates who have been out a few years, what you find is that we tend to be the most creative and self-confident bunch out there. But even if it's a perception rather than a reality, it's really troubling. So that's something I hope we can keep out there, and sort out what that means and sort out corresponding improvements.

But general trends — you've already mentioned the movement towards life sciences — and I think we'll see increasingly towards neurosciences and so forth as those fields heat up and become even more exciting. I don't think it's time to announce the decline of engineering at MIT — I think it will remain the largest component of our undergraduate education.

But we do need to understand how to prepare people better for the kind of industry they're going into. I'm repeating myself slightly, but we do have to recognize that people will be using these tools and processes that they learn in very different ways than they did in the past. We need to give students some understanding of the highly globalized and internationalized businesses they will work in. We have to be sure we build more consideration of environmental matters into the way we think about processes and design, and understand more about manufacturing and producing products as well as designing and analyzing components, which is our traditional strength.

We have got to find ways of at least exposing students to more interdisciplinary activities. I think the sort of experiential learning that goes on in the Undergraduate Research Opportunities Program or the VI-A Internship Program is something we should build on

because it is very important for preparing students for the kind of world they're going into.

We also have a set of issues that continue to be addressed about the broader nature of student life and living here; once we get the new dean on board, we'll begin to worry about that a bit.

There are issues that are always with us: How do you extend the learning environment in a more substantial ways into the living groups? How do we increase our sense of community? How do we deal better and more effectively with the changing diversity of our colleagues? Those things will always be with us. They are very important, and I hope they get some quite specific attention. The primary issue I believe for the new dean is to ask these fundamental questions on an Institute-wide basis.

In terms of graduate school, I think you'll find a lot of activity beginning. On a national basis, the nature of doctoral education is beginning to be questioned very fundamentally. I believe that in engineering you'll see a continued movement towards the five-year master of engineering programs. Probably we will see a cutback in the overall number of PhD students here, both because of what's viewed as the appropriate preparation for practice and also the influence of

declining research budgets.

In science, I think it is very important that our doctoral students gain a deeper understanding of the breadth of opportunities before them. There are worthwhile careers other than being a professor or working in a cutting edge research laboratory. While it is almost heresy, I hope that here and elsewhere, at least as a thought experiment, people will give some consideration to what a really well-respected professional masters program might look like in some of the sciences.

In both undergraduate and graduate education, I firmly believe that we will see some quite fundamental influences of new information technologies. It's not a panacea. We're not going to replace bright and interactive faculty with bright and interactive computers. But when you think about the significance of literally having the information of the whole word at your fingertips — and increasingly sophisticated and easy to use tools to gather it, to reformat it, and to present it — it's got to have profound influence on education.

Many of the faculty I've talked to about this are coming to the very interesting conclusion that used properly, these technologies may end up providing for increased rather than decreased contact with faculty and good strong interaction, with some faculty becoming more of a mentor and a guide and a pathfinder through information that can be gathered and displayed by computers. Things will happen faster than we can plan for them and we'll do lots of interesting experiments.

Graduate programs — particularly in management, perhaps in engineering or architecture and planning — will be formatted specifically for companies or sectors; probably there will be increased non-degree education. What the Institute will have to do is decide which of these things it wants to do. My hope is to try to make those as conscious decisions and not just fall into them.

The Tech: You have now been at the Institute for a little over four and a half years, just longer than the graduating seniors. How would you rate your performance so far?

Vest: Well, I really hesitate to give myself a grade for two reasons. One, I think that's really a judgment that other people and academic history will have to make, and second, it's pretty early to see what the results of this time have been. But it's easy to see things that have gone well and things that haven't.

I think that despite the great difficulties of the time, I've succeeded together with my colleagues, in giving us a greatly strengthened and different kind of presence in Washington, in the debates that are going on, and with the federal government and the public. I'm quite proud of the progress we've made there, although unfortunately it's been a bit more defensive and less positive than I would like. I think I played an important role on behalf of the nation's research universities.

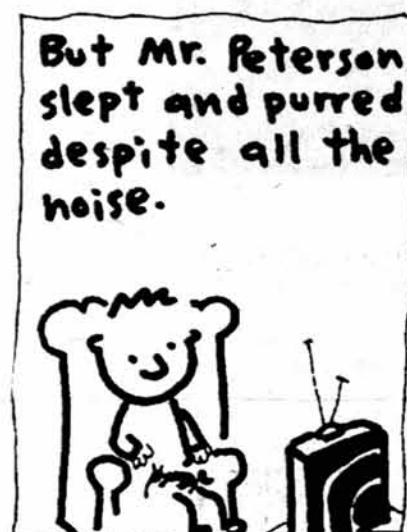
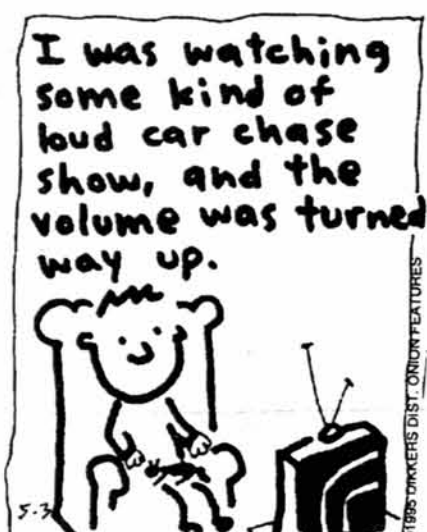
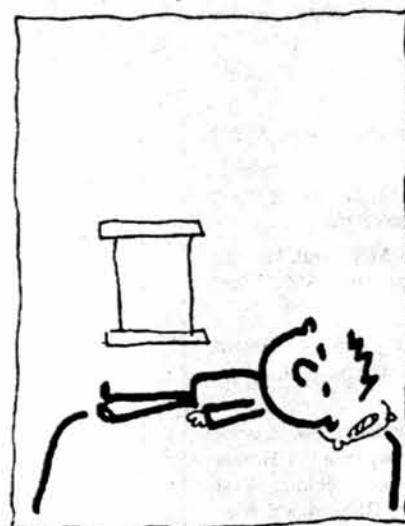
I think that the seeds for quite fundamental change particularly in engineering and management education have been sown. We'll see the fruits of that come out very quickly. I hope retrospectively that will be an important accomplishment.

I believe starting the work on re-engineering, which by definition is incomplete right now, has been a big risk that we had to take. It's one we've taken on in a bigger, more comprehensive way than any other major university I know of, and I'm hoping that it will turn out to have been sound leadership and that it will pay off for future students and faculty.

In the area of diversity, which has been very high on my priority list, the record is distinctly mixed.

Jim's Journal

by Jim



Congratulations

to these graduating *Tech* staffers.
Thanks for all your help, and good luck with
your future endeavors.

Diana Bancila
Raajnish A. Chitaley
Rich Domonkos
Teresa Esser
Evelyn Kao
Sarah Y. Keightley
Matthew E. Konosky

Yueh Z. Lee
Garlen C. Leung
Trudy Liu
Michael C. Morgan, PhD
Eva Moy
Matt Neimark
Carrie Perlman

Ben Reis
Eric Richard
Nicole A. Sherry
Pradeep Sreekanthan
Justin Strittmatter
Jeanne Thienprasit
Oscar Yeh

POLICE LOG

The following incidents were reported to the Campus Police between May 13 and June 1:

May 13: Student Center, bicycle stolen, \$400; Bldg. 9, old bicycle stolen, no value.

May 14: Rockwell Cage, fanny pack and contents stolen, \$120; Bldg. N51, larceny of cash and supplies, \$690.

May 15: Bldg. 2, suspicious person; Bldg. E53, harassing mail; Bldg. 48, harassing phone calls, Bldg. E52, suspicious mail.

May 16: Bldg. 14N, larceny, \$35 cash; Walker Memorial, larceny of cash and pager, \$100; Bldg. W11, larceny of cash, \$50; West Annex Lot, 1988 Jeep stolen.

May 17: Hayden Library, larceny of wallet and jacket unknown value; Rotch Library, larceny of a laptop computer, \$2,800; Bldg. E52 Plaza, larceny of a bicycle, \$1,200.

May 18: Bldg. 10, larceny of hand truck, \$200; Bldg. 66, larceny of laptop computer, \$2,000; West Annex Lot, larceny of a '91 Honda Accord; West Annex Lot, recovery of a stolen motor vehicle; West Annex Lot, attempted larceny of a motor vehicle; Bldg. 4 3rd floor women's room, aggravated assault; Bldg. W20, Athena cluster, larceny of a back pack, \$180.

May 20: McCormick, harassing phone calls; Bldg. 66, James Norton, of 169 Chestnut St., Waltham, arrested for trespassing; E52 Plaza, larceny of a Raleigh bicycle, \$250; Massachusetts Avenue and Memorial Drive, Carl Estrella, of 29 Newton Ct., Cambridge, arrested for disorderly conduct; Bexley, larceny of a microwave oven, \$150; Bldg. 36, larceny of a 10 speed bicycle, \$110.

May 21: New House, larceny of a mountain bicycle, unknown value; E52 Plaza, larceny of a Trek bicycle, \$200.

May 22: Bldg. E15, larceny of a computer notebook, \$500; Bldg. E19, harassing phone calls; Sailing Pavilion, attempted larceny of boats.

May 23: Bexley, larceny of a mountain bicycle, \$200; Bldg. 10, suspicious activity; Bldg. 1, larceny of cash, \$80; Bldg. 5, larceny of a wallet, \$30; Bldg. W20, larceny of a wallet, \$20; Bldg. E15, larceny of airline tickets, \$4,413.

May 24: Bldg. 10, larceny of cash, \$12; Westgate, larceny of clothes, \$107; Bldg. E15, larceny of a computer, \$6,700.

May 25: Hayden Library, larceny of cash, \$15; Hayden Library, larceny of a pocketbook, \$25.

May 26: Bldg. 7, Derek Burrill, of 183 Curwin Circle, Lynn, arrested for trespassing; Killian Court, shrubs vandalized, \$800; Bldg. 11, wallet containing, \$560 stolen; Johnson Athletic Center, generator stolen, \$700; wallet stolen from Hayden recovered in Bldg. 4 minus \$12; Student Center, Nathaniel J. Kaplis, of 31 Calvert Rd., Waltham, arrested for assaulting an officer and trespassing.

May 27: Next House, loading dock, car window broken and a suitcase stolen, unknown value.

May 28: New House, laptop computer stolen from unlocked room, \$2,000.

May 30: Bldg. 66, scale stolen, \$1,000; Bldg. E19, annoying phone calls; Bldg. 36, \$110 cash stolen.

May 31: Bldg. E17, \$50 cash stolen; Bldg. 35, computer chips stolen, \$200; West Annex parking lot, Honda Accord broken into, glove box rifled and \$3 in change stolen; West 275 parking lot, Honda Civic, car broken into and vehicle registration and portable radio stolen, \$70; West Garage, windshield wipers stolen from a Chrysler Intrepid.

June 1: Burton bicycle rack, Trek bicycle stolen, \$410; Bldg. E15, walkman and headphones stolen, \$120; Hayden Library, suspicious mail; Bldg. 48 lot, Toyota Camry broken into, stolen car phone, \$250; Bldg. 10, vandalism.

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22

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Washington—The FBI released details today concerning one of the most spectacular double-agent espionage incidents in recent memory. Although the Bureau refused to divulge the individual's identity, referring only to "I. Spy," the fiend is believed to be an employee of The MIT Press, Cambridge, Mass. FBI officials allege that I. Spy, while posing as an exemplary MIT Press employee dedicated to working for the publishers' continued success, has secretly deep-discounted prices on hundreds of the Press's most popular, sought-after titles. Insiders suspect the ultimate goal is to empty the warehouse and convert the facility to a GATT-NAFTA theme park and tax-free interchange on the information superhighway. At last reports, I. Spy was still at large and The Press had only just begun efforts to regain control of the inventory.



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Vest Names Engineering Dean Moses New Provost

Provost, from Page 1

"In these trying times for universities, MIT's goal should be to go beyond preserving as much of the current system as possible," he said. "We should strive to create a new and more flexible institution that can serve as a model for others for the coming decades."

Appointment received positively

Several faculty members and administrators positively received Moses' appointment. Calling it "a good appointment," Dean for Undergraduate Academic Affairs Travis R. Merritt cited Moses' broad educational background as a beneficial quality. Moses has a Bachelor of Arts degree from Yale, received his doctorate in the School of Science, and spent a year at the Harvard University Graduate

School of Business Administration.

Next fall, Moses will co-teach a seminar on the architecture of computer systems. "Part of the reason for these varied connections is that computer science has strong relationships with mathematics, engineering, management, and architecture," Moses said.

Moses is "used to responsibility and he's always someone who has thought broadly about the issues of education," said Professor of Health Sciences and Technology Nelson Y. S. Kiang.

"Whoever assumes the position of provost in these times is probably not going to be popular because there are very tough decisions that have to be made," Kiang said. "It won't be all building... some things will have to be attenuated."

Moses will also have to watch out for divisiveness in the MIT

community, Kiang said. "There are many forces that tend to drive people apart at MIT, and the job of the upper administration is to do what it has to do without driving people apart any more than is necessary."

"They have to somehow communicate to all the components of MIT what they value and would work to build," he said.

Moses has "done extremely well as administrator," said Institute Professor Jerome I. Friedman. Although MIT traditionally has a scientist for president and an engineer for provost or vice versa, having engineers in both top positions does not present a problem, Friedman said.

"It depends upon the individual," said Friedman. "I don't think one should look too carefully" at the person's specific area; "it's a question of the vision of the person, a

question of how to position the university to function in the best possible way in this budgetary climate."

Moses, a former head of the Department of Electrical Engineering and Computer Science, has been dean of the School of Engineering since 1991. Since 1989, he has been the Dugald C. Jackson Professor of Computer Science and Engineering.

A member of the EECS faculty for almost 30 years, Moses is best known for the development of Macsyma, one of the largest computer systems for symbolic algebra manipulation.

His areas of interest are the organization of large complex systems, competitiveness, product realization, knowledge-based systems, computers and education, and symbolic manipulation.

Moses has been actively involved with the Association for

Computing Machinery and the Institute of Electrical and Electronics Engineers; he was named an IEEE fellow in 1990. He is also a fellow of the American Academy of Arts and Sciences and a member of the National Academy of Engineering.

Born in Petach Tikvah, Israel in 1941, Moses came to the United States in 1954 and received the Bachelor of Arts (1962) and Master of Arts (1963) degrees in mathematics from Columbia University.

Moses joined the faculty as an assistant professor in 1967, the same year he received his doctorate in mathematics under the supervision of Professor of EECS Marvin Minsky. He became an associate professor in 1971 and a full professor in 1977.

He served as EECS head from 1981 to 1987 and associate director of the Laboratory for Computer Science from 1974 to 1981.

Seeds for Basic Education Change Planted, Vest Says

Vest, from Page 21

We've actually increased the percentages of women and minorities in every category — undergraduate, graduate, faculty. Starting with Paul Gray and John Deutch, we've made enormous progress in the nature of our undergraduate student body, and I think we should be institutionally very proud of that. We're beginning to make inroads into the graduate program; I'm disappointed that it hasn't been more rapid, but it is

coming along. And the faculty, of course, has been the biggest disappointment of all. We have gone up in terms of percentages for both women and minorities, but the absolute numbers are far too low, and I consider that close to a failure at this point. We've got to double and redouble our efforts in that area.

I think we have made substantial progress on the area of environment. Bring the sound, rational MIT approach to both the science and technology and ultimately the policy

of major environmental issues—we've made good progress there.

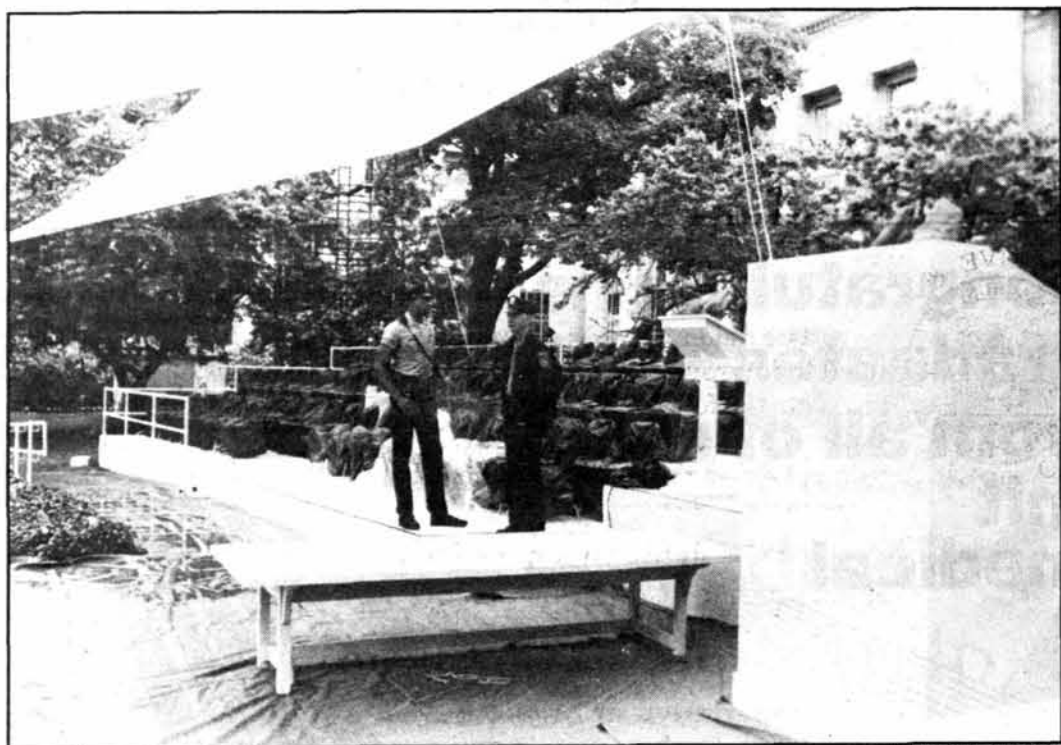
We certainly have retained a very leading position in information technology broadly, which has been very high on my agenda. We've done very strong work together with Lincoln Laboratory and private industry in developing all-optical, very high speed communications technology. Work at the Lab for Computer Science and Media Lab and AI Lab, continues to be very strong, and our new role in the

World-Wide Web is important, and I think we will continue to see strong technical work, and increasingly more innovative work in terms of use of these new technologies and what they ultimately mean for society. So we're coming along in that area.

We have not been able to accomplish as much as I had hoped in working on primary and secondary education. But we have a good strong council moving ahead in that area, we've put together some outstanding summer programs, the how a city works theme and so forth, but we've not been able to develop the funding to do that on as massive a

scale as I had hoped. So we've got a lot more work to do in that area.

The biggest disappointment is that I had to spend so much time fighting with the federal government. I have probably come to be viewed a little bit more as an external president than I would like. It's really my hope over these next several years to be able to focus more of my energy inward to educational matters. I'm very hopeful that will be possible, but I've had to shape the job according to what the times demand. Much about the American research university, and MIT specifically, needs to be reinvented.



JIMMY WONG—THE TECH

Campus Police officers guard the Commencement stage and seating area in Killian Court. The Institute's 129th annual exercises begin at 9:45 a.m. with the traditional march from 77 Massachusetts Ave. to Killian.

Hanna Gray to Deliver Commencement Address

Story, from Page 1

Alumni/ae Association.

Following the invocation by Baptist chaplain Reverend Betsy Draper, Hanna Gray will deliver her address to the graduates.

Afterward, on behalf of the graduate student body, outgoing Graduate Student Council President Roger G. Kermode will deliver a salute to MIT. Class of 1995 President Mehran Islam will then present the senior class gift to President Vest. This year's gift will create an annual scholarship to fund one or two students in the Undergraduate Research Opportunities Program.

In addition to the exercises at Killian, twenty-two cadets and midshipmen from MIT's Air Force, Army, and Navy Reserve Officer Training Corps programs will be commissioned in a ceremony at the site of the frigate *USS Constitution* at 6 p.m. The ceremony's guest speaker, Admiral J. Paul Reason, is deputy chief of naval operations for plans, policy and operation.

The hooding ceremony for students receiving doctorates was held yesterday evening in Rockwell Cage. The deans of the Schools and departmental representatives presented hoods to 232 doctoral

degree recipients.

Gray chosen to speak

From 1964 to 1982, the Commencement address was traditionally given by the President of MIT; guest speakers since 1982 have included Lee Iacocca, William R. Hewlett SM '36, Paul Tsongas, and Carlos Salinas de Gortari.

Gray's selection as Commencement speaker was announced about eight weeks ago following several months of deliberation by the Commencement Committee, formed last October.

The committee's goal was to find "someone who will be able to give a good, thought-provoking speech that will play a tremendous role in influencing the emotions of students," said Islam, who was a member of the committee.

Gray served as president of the University of Chicago from 1978 to 1993, and was also acting president of Yale University for a year. She is a distinguished history scholar and has taught at Chicago, Yale, and the University of California at Berkeley.

Gray was a Fulbright Scholar at Oxford University from 1950 to 1952, and received her PhD in history from Harvard University in 1957. She also holds honorary degrees from several other universities.

Bates Accelerator Funds Suddenly Cut

Bates, from Page 1

accelerator projects are funded by the same program: the TUNL Laboratory run by University of North Carolina, North Carolina State, and Duke University, and facilities at Texas A&M University, the University of Washington, and Yale University.

Officials at other universities were also shocked by the proposed eliminations. "It is a disaster for us," said Joseph Natowitz, director of the Cyclotron Laboratory at Texas A&M. "It would shut down not just us, but every university-based accelerator in the country. It appears to have been put in place because people don't understand what these facilities are about."

The university accelerators have played an important role as training grounds for nuclear physicists, including John H. Gibbons, science adviser to President Clinton.

Local congressmen oppose cut

Rep. Peter G. Torkildsen, whose district includes Bates, and other members of the Massachusetts Congressional delegation were quick to champion both Bates and the importance of the accelerator program as a whole.

Vest released a statement yesterday thanking Torkildsen for his support. "MIT is committed to continue to work with him on this issue of national significance. We are hopeful it can be turned around," Vest said.

MIT has also received some support from Massachusetts Senators John Kerry and Edward M. Kennedy, but they have not taken direction action because the Senate has not begun to consider specific funding authorizations, according to Ronald P. Suduiko, assistant to Vest for government and community relations.

"Our strategy is to maintain very close [ties] to the Massachusetts delegation, but also to the many other representatives and Senators that are involved in science and edu-

cational issues," Suduiko said.

Peer review process flouted

The elimination of the university accelerators surprised many people because it circumvented established national priorities and peer review processes.

"It is particularly surprising to us because this particular community has a very well established planning procedure," said Texas A&M's Natowitz. "They have an advisory committee to Department of Energy. They have reviewed the programs, given certain budget scenarios — all that seems to have been just ignored."

Vest was concerned because funding was reduced for university laboratories, but not for any of the national laboratories. "Such an approach is not consistent with the bipartisan commitment to strengthening basic research in the nation's universities," Vest wrote in a letter to the Massachusetts delegation.

The nuclear physics community, in conjunction with the DoE and the National Science Foundation, is currently in the middle of a review, Redwine explained. The review committee is headed by Professor Ernest J. Moniz, head of the Department of Physics.

"Indeed, in that process, Bates was recognized as a very important part of the national program in nuclear physics," Redwine said. "The agency has done a very thorough job of setting priorities and Bates has always been recognized as doing top-quality science."

Eliminating the smaller university accelerators will also hurt work at larger accelerators like Stanford, Brookhaven, and Fermilab near Chicago and in other nuclear physics projects, scientists said.

"They are staging areas for some of the major experiments at the big national laboratories. When you pull out the underpinning, you are doing damage all the way across the program," Natowitz said.

Congressional Cuts Will Impact Loans

Loans, from Page 10

state's economic livelihood, Hudson said.

MIT is working "closely with higher education associations that are trying to get the message to Congress," Hudson said.

Research agencies hit hard

NASA, DOE, and civilian research funded by the Department of Defense would see some of the biggest cuts. For example, the House proposes reducing NASA funding from \$14 billion to \$11.7 billion by 2000.

Despite the cuts at NASA, the overall goal of the measures is to take it out of unnecessary infrastructure and to preserve research programs, according to Professor Earl M. Murman, head of the Department of Aeronautics and Astronautics.

It is difficult to predict the effect on MIT research, because programs are not specifically being cut, Murman said.

Energy research funding will see large cuts — a total of \$7 billion over five years in the House bill — but would continue even if the department were eliminated. The largest energy cuts will be in environment restoration and cleanup, which provides little funding for MIT, according to Head of the Department of Nuclear Engineering Mujid S. Kazimi.

"At universities, including MIT, these cuts will affect the research support available for nuclear physics and plasma fusion," Kazimi said.

The cuts may not have as serious affect at MIT, because "MIT developed research projects that are funded by utility groups from the United States and abroad," Kazimi said. "I will not be surprised if this trend towards global funding of MIT research will expand in the next few years."

The recent threat to the Bates Linear Accelerator [see article, page

1] is not part of the budget resolutions passed last month. The cuts to Bates were proposed in a follow-on bill that authorizes funding within the framework set out by the budget resolution.

The National Science Foundation and the National Institutes of Health face less severe cuts than many other agencies. The House would leave the NSF budget largely untouched, while the Senate proposes \$100 million in cuts from its \$3 billion budget.

The House proposed a 5 percent cut in the NIH's budget, while the Senate proposes a 10 percent cut.

Humanities face deep cuts

Though most of the money MIT receives from the federal government funds science and engineering, MIT does receive a small amount of funding from the National Endowment for the Humanities.

MIT has probably received about \$2 to \$3 million in NEH funding over the last five years, said Philip S. Khoury, dean of the School of Humanities, Arts, and Social Sciences. The funding has focused on multimedia studies, especially at the Laboratory for Advanced Technologies in the Humanities.

The NEH is the largest source of research funds in the humanities in the United States, Khoury said. Though the annual funding is only about \$177 million, it is important because researchers can use NEH money as leverage to get more resources from private foundations or individuals.

Elimination of the NEH would be a "major loss for MIT," he said.

There have also been proposals to cut NSF funding for social science research. "We don't think that is going to happen next year, but the future isn't looking very promising," Khoury said. MIT's prominence in linguistics, economics, and political science is heavily dependent on NSF grants, he said.



Congratulations to the Class of 1995 on your graduation and welcome to the Alumni/ae Association!

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For information about how to get involved as an alumnus/a, contact:

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MIT Alumni/ae Association
Room 10-140
(617)253-0743
mlniles@mit.edu

Please keep in touch with us so we can keep in touch with you!



The Baker Memorial Foundation, a student organization dedicated to improving undergraduate student life, would like to congratulate the following professors as the 1994-1995 recipients of the *Baker Foundation Award for Excellence in Undergraduate Teaching* (excerpts from the student nominations follow)

**Kirk Kolenbrander, Assistant Professor,
Department of Materials Science and Engineering**

**Elena Ruehr, Lecturer,
Department of Music and Theater Arts**

"Not only have I learned an incredible amount of material in [Kirk Kolenbrander's] class - one of the toughest classes I've taken - but I've also enjoyed every minute ... It has been a pleasant surprise to take a class, put in the time and effort to learn, and find that your professor is working hard towards the same goals."

"[Elena Ruehr] was an exciting teacher who got everyone in the class involved ... Her energy and enthusiasm seemed boundless, and she really transferred that enthusiasm to her students."

The Baker Foundation would also like to recognize the following professors who were also nominated, as well as thank the many students who thoughtfully nominated them.

Rohan Abeyaratane
Daron Acemoglu
Takako Aikawa
Tomas Arias
Michael Artin
George Bekefi
William Bertozzi
John Brisson
Peggy Cebe
Steven Chorover
Christopher Cummins
Peter Dodds
John Essigmann
Eric Fernald
Douglas Forsyth
Louis Galdieri
David Jerison
Yael Karshon

Daniel Kemp
Susanne Klingenstein
Eric Lander
Alan Lazarus
Steven Leeb
Charles Leiserson
Winston Markey
Kenneth Manning
Arthur Mattuck
Leonard Morse-Fortier
Feniosky Pena-Mora
Peter Ragone
George Rathjens
Elizabeth Redding
Christ Richmond
Gian-Carlo Rota
Candace Royer
Donald Sadoway

Jerome Saltzer
Christopher Sawyer-Laumann
Martin A. Schmidt
Judah Schwartz
William Siebert
Michael Sipser
Karen Smith
Robert Solow
Paraskevas Sphicas
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Jeremy Wolff
Siman Wong
Evan Ziporyn
Barton Zweibach

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■ Miscellaneous

We are studying language in twins. If you are a twin or a parent of twins and interested in participating, give us a call at 253-5774.

Jim's Journal

Today I played some classical music on the radio.



Mr. Peterson slept on top of one of the speakers, like she sometimes does.



I was going to wash a load of clothes today.



But all the washing machines were being used.



5-1

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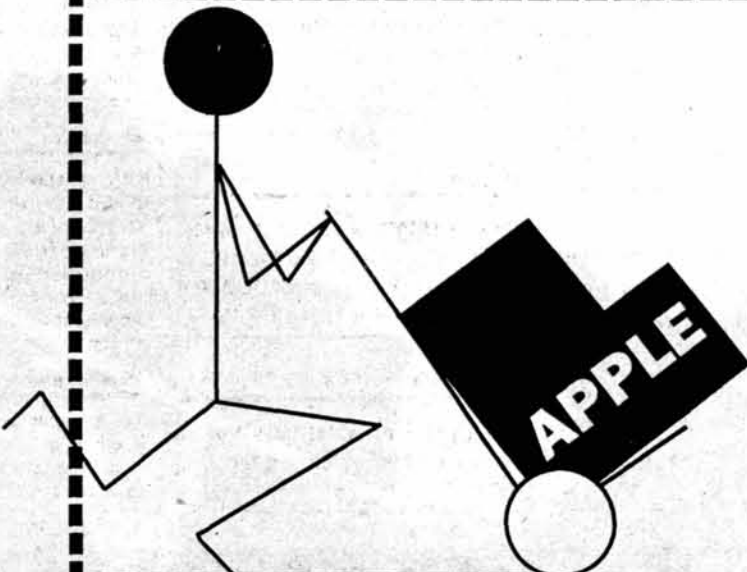
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ACROSS
1 Menu item
6 Graduate degrees
9 Gemstone
13 Runs off to Gretna Green
15 Speed up
17 Shelf
18 South American river (2 wds.)
19 Dry —
20 Cacophony
22 Poetic contraction
23 Mr. Landon
25 Subject
26 Measure of medicine
27 Is nosy
29 Tax initials
30 Outlet
31 Repeat
33 Twitching
34 Read
35 Early
39 Dangerous drug
40 Bear Bryant's team
41 Hunted one
43 Russian-built fighter aircraft
45 Kosher
46 Whittier heroine
47 Adjusted
49 Prefix: wool
50 Slippery —
51 Is sociable
53 Kill or shoot
55 Wisdom
57 Pretty: Sp.
59 Mythical island
60 Black eye
61 Appear
62 Clique
63 Far from skinny

DOWN
1 Trucking rig, for short
2 Menu term (3 wds.)
3 More isolated
4 Pertinent
5 Legal paper
6 Songwriter Johnny —
7 Self-evident truths
8 Reproductive body
9 Keats' forte
10 One who is easily fooled
11 Sleeping (2 wds.)
12 Sierra —
14 Cut
16 What -30- signifies
21 Drew back, as a horse
24 Punished with a stick
26 Bound unit
27 Singer with Gladys Knight
28 Impertinent
30 Essential
32 Mr. Williams
33 — Aviv
35 Item with lox
36 Mad, for one
37 Comes forth
38 Frivolous —
41 Aesthetic taste
42 Wrinkle
43 City in Indiana
44 Assimilate food
46 Zane Grey locales
47 Shades
48 Labor leader
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51 Chess pieces
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54 Small opening
56 "— a Camera"
58 Pen point

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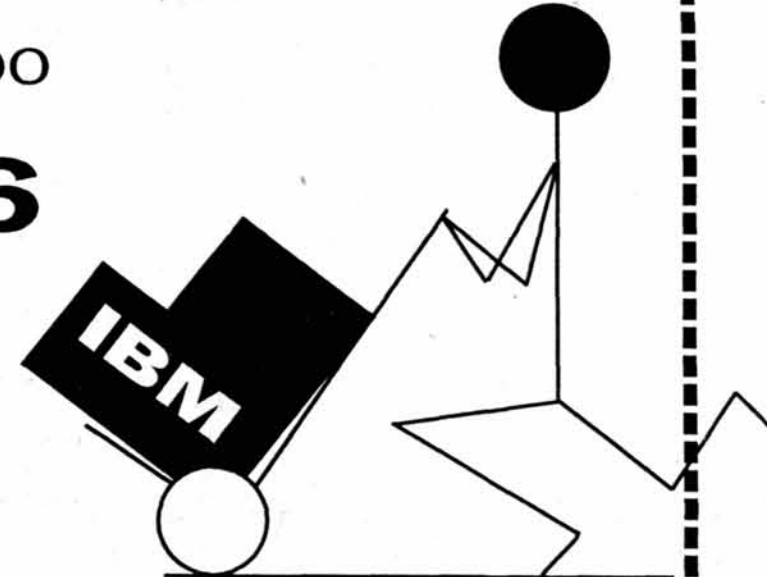
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SPORTS

Men's Track Sends 3 to NCAA Contest

By Roger Crosley
SPORTS INFORMATION DIRECTOR

The men's track team sent three athletes to the NCAA Division III national championship at Carleton (MN) College over Memorial Day weekend.

Sports Shorts

represented MIT.

At the All-New England Championship, Crain turned in an MIT record breaking performance in the 3,000-meter steeplechase with a time of 9:08.4 to place second in the event to a runner from Yale. Crain will compete in both the steeplechase and the 1500-meter race at the national championship.

Wallberg placed fifth in the hammer throw and sixth in the discus at the New Englands. He competed in both events at the NCAA's. Sandholm, who was seventh in both the

100- and 200-meter races last weekend, competed in the sprints.

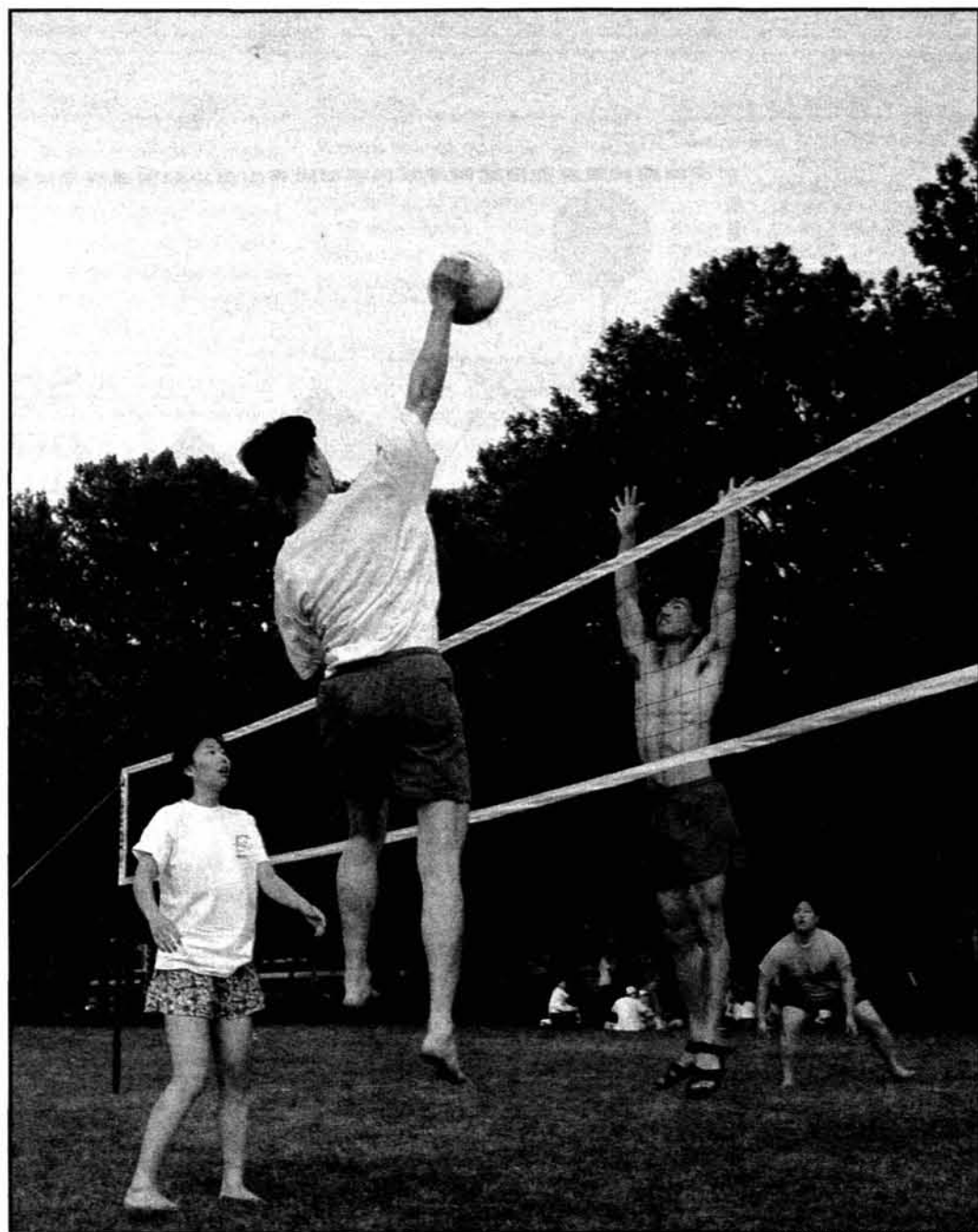
Andy Ugarov '95 was MIT's other scorer in the All-New Englands. Ugarov placed fifth in the triple jump with a leap of 44 feet, 10-3/4 inches. He was also seventh in the high jump at 6 feet, 5 inches.

Women's Track and Field

Kristin Ratliff '95 closed her MIT career in style with a second place finish in the discus at the Eastern College Athletic Conference Division III Championship. Ratliff threw the discus over 127 feet.

Men's Lacrosse

Three members of the Pilgrim Lacrosse League champion MIT squad were participants in the New England East-West Collegiate All-Star game held at MIT. Defense-man Chris Berg '95, goalie Mike Kwon '95, and midfielder Abe Udobot '95, represented the Institute.



THOMAS R. KARLO—THE TECH

Although official MIT team sports have long since finished for the seasons, the athletic fields remain filled with students enjoying the arrival of warm weather. These volleyball players took advantage of the late afternoon sun on Sunday to set up their court between Amherst Alley and Kresge Auditorium.

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