



Vipul Bhushan/The Tech

This new graduate snaps a shot of the provost after receiving his degree.

## Graduation speaker stresses honesty

By Marie E. V. Coppola and Deborah A. Levinson

National Science Foundation Director Walter E. Massey described "science and engineering research [as] the uncompromising pursuit of truth" at MIT's 125th Commencement exercises on June 3, at which 1773 people received degrees under sunny skies.

In a series of apparent references to the controversy surrounding a paper co-authored by Nobel laureate and former Whitehead Institute Director David Baltimore '61, Massey said that "the whole edifice of science and engineering research is built upon honesty."

"Few things are more damaging to the research enterprise than falsehoods — be they the result of error, self-deception, sloppiness and haste, or, in the worst case, dishonesty," Massey said.

[The texts of Massey's speech and President Charles M. Vest's charge to the graduates appear on page 2.]

Massey's remarks came after a recent National Institutes of Health investigation into possible

falsification of data by former MIT researcher Thereza Imanishi-Kari, whose work was supervised and signed off by Baltimore.

Scientists "uphold the highest standards of integrity," Massey said. (Please turn to page 9)

## Baden pleads guilty to arson, assault charges

By Andrea Lamberti

Steven H. Baden '92 pleaded guilty to charges of burning a dwelling and five counts of armed assault with intent to commit murder on Friday, June 7 in Middlesex Superior Court. He will be sentenced Aug. 21.

The charges had been filed in connection with a fire Jan. 18 in the "kosher suite," where Baden lived, in Burton-Conner House.

Baden admitted to police investigators Jan. 18 that he set the fire early that morning, using gasoline bought the day before. He had become a suspect soon after the fire, according to the police report, because the "pour mark" of the gasoline existed on the hallway carpet in front of

every room in the suite except Baden's room.

Baden did not return phone calls made over the past few days.

Baden had pleaded not guilty to the charges in February, when the case moved from district court to superior court. Cambridge District Court, where Baden was first arraigned, does not have jurisdiction over the charges against him.

Defense attorney Eric Levine would not say why Baden changed his plea. "I do know the reasons, but I can't disclose them," he said.

Levine did say that he would recommend a less severe sentence for Baden than what the state

is expected to recommend, but would not give any details of it.

Assistant District Attorney Crispin Birnbaum will likely recommend a 20-year sentence at the Massachusetts Correctional Institution in Concord in response to

the armed assault charges, she said. If sentenced to Concord prison, Baden would be eligible for parole after two years.

In response to the arson charge, Birnbaum said she would (Please turn to page 10)



Tech file photo

Humanities and Social Sciences Dean Phillip S. Khoury

## Khoury new HASS dean Served as acting dean for past year

By Dave Watt

Professor of History Philip S. Khoury has been appointed dean of the School of Humanities and Social Sciences. He had been acting dean of the school since last year, and associate dean of the school since 1987.

An advisory committee headed by Professor of Political Science Suzanne D. Berger nominated Khoury for the permanent appointment. Provost Mark S. Wrighton said the committee had enthusiastically endorsed Khoury for the position.

Khoury was out of the country, and could not be reached for comment.

He is perhaps best known among undergraduates for the lectures on the Middle East he gave last semester during the gulf war. Khoury's research focuses on the political and social history of the Middle East.

Many of the issues and trends Khoury will face during his tenure as dean surfaced while he was acting dean. For example, many Humanities, Arts and Social Sciences-Distribution (HASS-D) classes were oversubscribed last term, resulting in lotteries and

student complaints.

Students have also lobbied Khoury to establish a permanent program in psychology in the humanities department, following the denial of tenure to Associate Professor of Psychology Jeremy M. Wolfe PhD '81 in 1990. Wolfe acted as coordinator for the Program in Psychology in the Department of Brain and Cognitive Sciences. He has since been hired at Harvard University, and will continue to teach his always-over-subscribed Introduction to Psychology (9.00) class at MIT in the fall.

While acting dean, Khoury has also presided over a large increase in the number of students taking HASS minors on their degrees. Nearly 200 members of the Class of 1992 chose to study a minor, up from 55 in the Class of 1989.

Khoury also participated in the Faculty Study Group in International Relations, whose report, published in late May, urged MIT to continue its international ties in spite of rising concerns about foreign competition with US technology.

Khoury, 41, received his bache-

lor's degree from Trinity College in 1971, and his PhD from Harvard in 1980. He is the author of several books about the Middle East, and is the co-editor of *Tribes and State Formation in the Middle East*, which was published in 1990. His most recent work studies the impact of war on societies in the 20th century Middle East.

## Friedman named Institute professor

By Andrea Lamberti and Joanna E. Stone

Professor of Physics Jerome I. Friedman, who shared the 1990 Nobel Prize in physics, has been named Institute professor.

The announcement was made by President Charles M. Vest, Provost Mark S. Wrighton and

Professor of Management Henry D. Jacoby, who was faculty chair at the time of the appointment.

"I feel very honored," Friedman said. "I understand faculty had a lot of input; one feels especially pleased when one is judged in that manner by one's colleagues."

Friedman said that being named Institute professor will not change his activities significantly. "I hope to continue teaching and researching the way I've been doing it."

"It's more a sense of the recognition that it affords. . . . It's an honorific appointment; from that point of view I am very pleased."

The title of Institute professor is bestowed on a faculty member to acknowledge outstanding leadership, accomplishment and service in the scholarly, educational and general intellectual life of the Institute or wider academic community. Friedman's appointment brings the current total of Institute professors to 10. There are presently 21 Institute professors emeriti.

Professor Robert J. Birgeneau, head of the physics department, said Friedman is "in many ways a paradigm of what an MIT pro-

fessor should be — a fine educator, a caring human being, a great researcher — and he has very broad interests."

Friedman shared the 1990 Nobel Prize in physics with MIT Physics Professor Henry W. Kendall PhD '55 and Richard E. Taylor of the Stanford Linear Accelerator Center. The prize was awarded for their research done from the late 1960s to 1973 at the Stanford Linear Accelerator Center in California; their experiments centered on the scattering of electrons by protons, deuterons (a proton bound to a neutron) and heavier nuclei.

This research gave the first clear evidence for charged, point-like substructures — quarks — inside these massive particles. The interpretation of their data gave strong support to the quark model and provided the experimental underpinnings for the development of quantum chromodynamics, the currently favored theory of strong interactions among particles. This "strong force" is one of the four basic forces of nature.

Receiving a Nobel Prize does not in itself qualify a faculty (Please turn to page 10)

## Edward B. Hontz Jr.

Edward B. Hontz Jr. '92 died on June 4 after falling from the roof of Building 66. The death is believed to be a suicide, though no note or other formal indication has been uncovered by police, said Associate Dean for Student Affairs Robert M. Randolph.

Hontz, 21, was found shortly before 10 pm by a passing student. His body lay between Buildings 56 and 66. He was pronounced dead at the scene by the Middlesex County medical examiner. The following week, on June 12, he was buried in Arlington National Cemetery, VA.

Randolph, who heads Student Assistance Services, said that while he did not have any details about Hontz's condition immediately prior to death, there existed "some indication that was depressed."

A computer-science major, Hontz was described as "really friendly," "very relaxed" and "extremely intelligent" by his fraternity brother, Zeta Beta Tau Vice President Eric A. Lehman '92. He was also interested in mathematics, Lehman added, and enjoyed playing ultimate frisbee in his leisure time.

Hontz had been living in ZBT's Brookline house for the summer, though he had lived in Senior House last spring and planned to move back there in the fall. He spent last fall studying mathematics in Hungary.

He is survived by his parents, Edward Sr., a captain in the US Navy, and Jacquelyn, both of whom live in San Pedro, CA, and two sisters, Jennifer and Gretchen.

## Douglas P. Rodger

Douglas P. Rodger '93, a 20-year-old electrical engineering major from Harvard, MA, died June 20 from carbon monoxide poisoning while in his garage at home. Rodger was working on his car at the time. His death has been declared an accident.

"Doug was extremely personable," said his fraternity brother, Theta Xi Treasurer Matthew S. Warren '93. "He was very easy-going . . . an incredibly good brother and excellent friend."

David A. Lippe '93, another of Rodger's fraternity brothers, described Rodger as "very selfless."

Rodger had just begun the 6-A Internship Program this summer. His father, Tod, said his son's academic interests included computers and electronics. Douglas also enjoyed cross-country skiing, biking and running.

In addition to his father, Douglas is survived by his mother, Lyn, and sister, Christine. A funeral service will be held 10 am Saturday at Congregational Church in Harvard, MA.

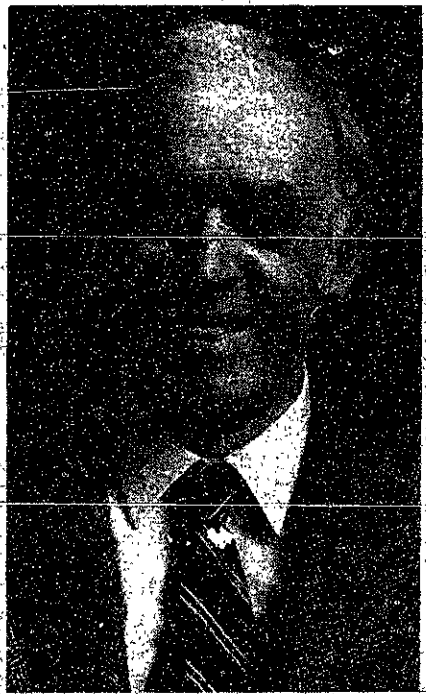
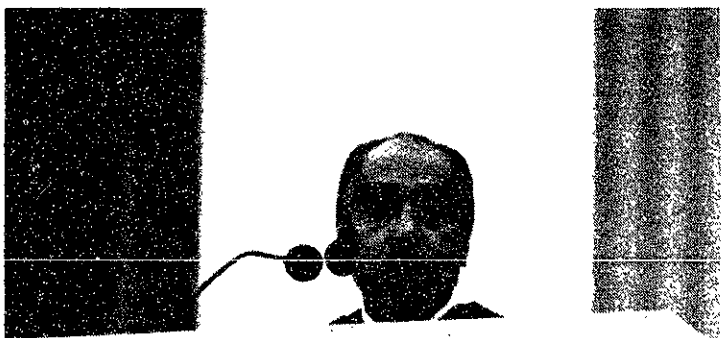


photo courtesy MIT News Office  
Newly named Institute Professor Jerome I. Friedman

# Text of NSF Director Massey's address

(The following is a transcript of the speech by National Science Foundation Director Walter E. Massey to the graduates and guests at Commencement on Monday, June 3, as recorded by the MIT News Office.)

Good morning. I am pleased and honored to have been asked to deliver the commencement address here at MIT today. People sometimes say that a graduate's greatest achievement is getting through the commencement exercises. That is clearly not the case here today. Each of you has proven already that you have the intelligence and



NSF Director Walter E. Massey speaks at Commencement.

wherewithal to master one of the most rigorous academic programs in the nation.

I recently stumbled across an example of that rigor. When I expressed surprise that grade point averages at MIT are carried to a third decimal place, I was informed that only MIT and God are able to distinguish excellence with such precision.

The whole edifice of science and engineering research is built upon honesty.

When you leave here, you will be joining an elite corps of graduates from the nation's premiere research universities. For decades, MIT has been a leading site for advances in basic understanding and innovation in science and engineering, advances that are the foundation for

continuing prosperity and an improved quality of life. As such, MIT is a precious resource and valued institution to more than its students, graduates and those directly involved in its operation. MIT and the other top US research universities play a critical role in setting and sus-

Good science and engineering research is the uncompromising pursuit of truth. As such, it represents the highest achievement of human intelligence and provides a constant source of enrichment to mankind's existence intellectually, spiritually, and materially.

taining the highest standards of achievement in research and technology.

As MIT graduates, you have assumed a duty to uphold this tradition of excellence in all your pursuits. What does this mean? How do you go about it?

Excellence is a quality that is recognized by comparison. While it is judged generally from without, excellence begins within. Individuals achieve excellence through the choices and decisions they make regarding the conduct of their lives.

This morning I would like to talk about a specific arena of excellence, that is, the area of basic research in science and engineering. Many people think of research as a cut-and-dried process. And it is true that there are some clear "rules of the game." The object of research is, to paraphrase my good friend Nobel laureate Leon Cooper, discovering how the world works — separating the truth about the way things are from conceptions of the way they might be. To accomplish this task, good researchers are skeptical; they evaluate claims empirically and logically, not on the basis of authority. Good researchers are open, sharing their hypotheses, methodologies and results, and making their primary data available to others. They do this so that results can be reproduced and findings confirmed. In this way, the research community protects its interest in the truth.

Good science and engineering research is the uncompromising pursuit of truth. As such, it represents the highest achievement of human intelligence and provides a

constant source of enrichment to mankind's existence intellectually, spiritually, and materially. "In science there can be no perfect crime, no permanently unsolved murder," as chemist Carl Djerassi notes in his novel about prize-winning research, *Cantor's Dilemma*. If a finding is important, sooner or later the experiment will be repeated and the results subjected to independent verification. The rules of research keep science and engineering truthful.

Simply put, the whole edifice of science and engineering research is built upon honesty. More than in any other endeavor, individuals conducting fundamental research depend upon the veracity of the accumulated insights and



Andrew Chou '91 proudly leaves the stage with four degrees in hand.

accomplishments of others. Sir Isaac Newton expressed it best when he said, "If I have seen further, it is by standing upon the shoulders of giants."

But not even giants can see clearly if their feet are on shaky ground. Few things are more damaging to the research enterprise than falsehoods — be they the result of error, self-deception, sloppiness and haste, or, in the worst case, dishonesty.

It is the paradox of research that reliance on truth is both the source of modern science and engineering's enduring resilience and its intrinsic fragility.

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## President Charles Vest's charge to graduates

(The following is an edited transcript of the speech by President Charles M. Vest to the graduates and guests at Commencement on Monday, June 3, as recorded by the MIT News Office.)

Once again we are gathered here in Killian Court — the Great Court of MIT — to celebrate, perhaps, seem odd that a community so dedicated to the future and so permeated by scientific objectivity comes together donning strange and colorful medieval regalia. But indeed it is fitting, and seemingly fulfilling of deep human needs, that such rituals take place.

This ritual reminds us of the continuity — through the ages of discovery and learning — of our role in an unbroken, centuries-old chain of accomplishment of the human mind and spirit.

But above all, it celebrates your passage to a new stage in your lives, and it celebrates your accomplishments during your student years at MIT.

Life in a university has a rhythm. It ends, oddly enough, with a commencement — a beginning. But it begins each year as summer ends and autumn approaches, when we come, or return, to the campus with that feeling of apprehension in the pit of our stomach — and, perhaps, that nagging suspicion that we were admitted to MIT by mistake.

It proceeds through an intense year of communal living, teaching, learning, researching; of lectures, laboratories and libraries; of problem sets, UROP projects, final exams and Independent Activities Period; of dreary New England winter and renewing springtime; and now, at last, of parties, platitudes and platforms.

So here we are, gathered to salute you: our graduates. To salute your accomplishments — past and future.

But the accomplishment of graduation from MIT is not yours alone. There are those parents, family, friends, spouses and children who have supported and sustained you. You will recognize them by their smiles, brought about by their great pride, and also by a sense of great and immediate relief to their bank accounts.

It is always especially wonderful to see the babies and small children who come to see their mother or father graduate. They too are welcome. And as this ceremony stretches onward, I give them special presidential approval to comment on the proceedings — at any time and in any manner they see fit.

Let us, then, express our deep appreciation to all of those who have come to see their mother or father graduate today to join in your commencement ceremony. Will you, the graduates, please rise, turn to your audience and give them the applause they so richly deserve.

According to William Manchester's book, *The Last Lion*, Winston Churchill used to amuse himself during

boring sessions of Parliament by lying in wait for neophyte orators. As they spoke, he would close his eyes, and let his head nod in feigned sleep — just to disconcert the speaker. Once a young speaker finally became so exasperated that he shouted, "Mr. Churchill! Are you sleeping during my speech?" Churchill raised his head and replied, "No, but I wish to God I were."

But this morning you and I will have more camaraderie and mutual respect than that, because we are both neophytes. For this is my first MIT commencement. Just as you complete your studies at MIT, I complete my first academic year as president. In this role, it is my privilege to deliver this brief charge to you.



A graduate rejoices as she leaves the podium.

I have found that three characteristics of the Massachusetts Institute of Technology stand out in all that we do:

- The first is a true and deep commitment to education — a belief that the nature of our education and curriculum is the core of the Institute. One senses this in the quality of debate and self-criticism that go on continually among the faculty — for example, as we concluded that modern biology must now become a General Institute requirement. One learns it from our alumni — who tell us that the self-discipline, knowledge base, problem-solving skills and confidence to take on truly challenging tasks that they gained at MIT have enabled them to make unusual contributions and accomplishments in their careers.

- The second is the uniqueness of MIT. You undoubtedly were drawn to study at MIT by the knowledge that it is not another "cookie-cutter" university. This is a unique institution of higher learning and research — one with its own special excellence, tradition and entrepreneurial spirit. MIT blends mind and hand, and is as proud of its connections to the real world of industry and government as of its deepest theoretical and artistic accomplishments.

There is a palpable sense of service to the nation and to the world on this campus. We continually ask what the truly important problems facing humankind are and how we can contribute to their solution.

- The third is service. There is a palpable sense of service to the nation and to the world on this campus. We continually ask what the truly important problems facing humankind are and how we can contribute to their solution.

All of these attributes will be reflected in you as graduates, but I want to leave you with a few thoughts regarding this last topic — service.

We have just been through an era that, for whatever reason, seems to have been characterized by far too much emphasis on the self. This has often been manifested as overt greed. It is time for this to change.

We must reduce the terrible escalation in the bifurcations in our society: bifurcations between rich and poor, between those who contribute to society and those who are rendered impotent to do so, between those who have good health care and those who do not.

These issues — like the great issues of maintaining a sound economy and production system, taking the steps required to maintain a healthy global environment, making wise use of technology in the rapidly developing information age, creating a more peaceful and secure world, and restoring the vitality and effectiveness of our nation's schools — are all areas in which you can contribute richly.

No one associated with MIT has better exemplified service to the nation through science, technology and service than Vannevar Bush '16. This is the centennial of his birth.

Vannevar Bush is one of the great figures of American science and engineering in the 20th century. He was a pro-

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# news roundup

from the associated press wire

## World

### Berlin becomes seat of German government

Berlin will once again be the seat of Germany's government. Lawmakers have decided to move most government operations from Bonn to Berlin over the next 10 to 12 years. However, Germany's equivalent of an upper house of parliament will remain in Bonn, which has been the government center since the end of World War II.

### Future of Philippine bases in doubt

The Pentagon said a US negotiator will head to the Philippines next month to talk about the future of the ash-coated Clark Air Base and other US installations on the islands. Before Mount Pinatubo started erupting early this month, US and Philippine officials had been wrangling over how much the United States should pay and how long the bases could stay open in the Philippines. Now, volcano damage has complicated the issue.

### Kuwaiti martial law to end

Kuwaiti officials have said that martial law will end tomorrow, and so will the special tribunals that have meted out death sentences to 29 alleged collaborators with Iraqi occupation forces. Those courts have come under international condemnation by human rights groups. Kuwait's justice minister said the remaining cases will go through the regular court system. Martial law went into effect after Operation Desert Storm forced the Iraqis out in late February.

### Englishman shoots into crowd

In England, where shootings are relatively rare, a local official is dead and a reporter is wounded following an incident that was broadcast on television. When a bulldozer arrived to demolish a house in Bustfield that was built without the required permits, the home's owner pulled out a gun and fired into the crowd that had gathered. The local district planning chief was killed and a BBC reporter was shot in the arm. The gunman was arrested after a two-and-a-half-hour standoff.

### Independence for Croatia, Slovenia

Two republics in Yugoslavia, Croatia and Slovenia, have declared their independence, heightening fear of civil war in the already tense nation. A State Department official, speaking on condition of anonymity, said Croatia and Slovenia can not exist on their own.

He said they should work with the federal government to achieve their goals, rather than trying to fend for themselves. Meanwhile, the federal parliament is urging the army to take action to preserve Yugoslavia's union. Control over the army actually rests with the federal presidency, but it has been paralyzed by the internal strife and has not met for weeks.

### Congressmen advocate sanctions

Black members of Congress are in disagreement with President George Bush over the lifting of sanctions against South Africa. Eighteen of them met with Bush in the Oval Office yesterday, warning him that lifting the sanctions would be "a historic mistake." But Bush told them the law leaves him little choice but to lift sanctions once South Africa's government releases all political prisoners.

## Nation

### Reagan campaign not investigated

A top Republican lawmaker insists there's not enough evidence to warrant a formal investigation into an alleged 1980 Iran hostage deal by the Reagan-Bush campaign. In a letter to House Speaker Tom Foley and in a floor speech yesterday, House minority leader Robert Michel urged that the matter be dropped. Monday, Democratic Senator Albert Gore called for a formal investigation.

### Smugglers now mix cocaine with plastic

The FBI said drug traffickers have come up with a new way to smuggle drugs: combining cocaine with plastic and molding it into just about anything. Florida and FBI investigators have discovered 355 pounds of cocaine made into electrical parts.

Five Colombians have since been indicted. Agents said the technology makes it possible to transform cocaine into anything, such as toys, eyeglass frames and camera parts. It makes the drug undetectable by drug-sniffing dogs, visual inspection or chemical tests. An FBI chemist said the agency is making equipment available to test suspicious plastic parts, but this equipment will be useful only if agents suspect the presence of drugs in the first place.

### Air Force Officer discharged after leading DC gay pride parade

An Air Force Captain who led a gay pride parade in Washington, DC, said the military has decided to grant his discharge — one day later than expected. Earlier, Capt. Greg Greeley said military investigators were holding up his discharge. *The Washington Post* interviewed Greeley at the parade and Greeley said after that story appeared, investigators questioned him about whether he is homosexual and whether he knows of other homosexuals in the Air Force. He said he refused to answer. The Air Force said the investigation is standard procedure when the issue of homosexuality comes up — and when a serviceman has clearance for classified information, as Greeley did.

### Drug czar blasts budget cuts

The nation's drug czar is blasting congressional Democrats for cutting the administration's proposed drug war budget. At a news conference yesterday, Bob Martinez encouraged lawmakers to restore the money. The House is set to start debating an \$83 million drug war budget today.

### AMA urges new cigarette warnings

The American Medical Association wants the warning on cigarette packs to be tougher. Delegates at the AMA convention in Chicago have approved a resolution recommending a warning label that reads: "Smoking is addictive and may result in DEATH."

### Bus passengers may be searched

The Supreme Court is giving police permission to continue using an increasingly common tactic for nabbing drug traffickers. The justices said police may ask any bus passenger to submit to a search — even if they have no reason to believe the passenger has done anything wrong. The court said the searches are acceptable as long as passengers know they have the right to refuse to be searched.

### Retrial ordered for Florida policeman

A state appeals court in Florida said the judge in William Lozano's manslaughter trial should have moved the proceedings to another jurisdiction. It has ordered a new trial for the police officer, who was convicted of manslaughter in the 1989 shooting of an unarmed black motorcyclist.

After the motorcyclist and his passenger died, Miami's Overtown section was rocked by three days of violence. Police patrols have been increased to head off trouble.

### Hearing scheduled in child rape case

A court hearing is scheduled in Livingston, MT, today to determine whether the state will maintain custody of an 11-year-old girl whose mother allegedly arranged to have her raped. Police said the mother is unable to have any more children and wanted another baby, so she convinced her boyfriend to rape the girl. Authorities said they have never encountered a case like this.

## Local

### Weld supports plan for Boston-Springfield rail service

Gov. William F. Weld has disclosed support of a plan for high-speed rail service between Boston and Springfield, MA. It would run along a new line in the median of the Massachusetts turnpike. Weld said the land is available and it is flat. Weld said the rail line could be built with a combination of state, turnpike and private funds. He said he envisions trains running at very high speeds, covering the 90 miles between Boston and Springfield in 20 minutes.

Weld conferred last Friday with Springfield Mayor Mary Hurley. The state Department of Public Works conducted a study of the proposal in the late 1970s. The project is estimated to cost \$1.3 billion. Amtrak already runs passenger trains on existing track involving Hartford, Springfield and Boston, but the track is in poor condition and trains cannot reach full speed.

### Dolls at Fenway Park spark controversy

Some baseball fans in Boston see it as innocent fun, but others are offended and angry about the inflatable dolls, anatomically correct, which have been brought into the bleachers at Fenway Park by Red Sox fans. The fans have been seen fondling the dolls, passing them around and making obscene gestures with them.

Some fans said they saw the dolls in the stands as early as last year. But after one fan complained to a newspaper about it, the Red Sox issued a statement this week condemning the practice of bringing the dolls to the ballpark. One fan said he does not think the dolls should be there because there are children in the stands. Another however, said she is not offended. She said, "They're not hurting anybody."

A local official of the National Organization for Women said the Red Sox should have acted sooner to try to keep out the inflatable dolls. She said the behavior with the dolls is like rape, and that it reinforces the message that women are not welcome at sports events.

### State employees receive paychecks

Today is payday for the Boston's 400 teachers and school administrators, a \$500,000 item. School personnel had to go without paychecks two weeks ago because the city did not have enough money. Last week, Gov. William F. Weld approved a \$960,000 emergency payment to Chelsea so the city could issue those paychecks and pay other employees. The city would have received its local aid payment on June 28.

### Gynecologist arrested with prostitute

Officials said some patients of a Brockton doctor arrested with an alleged prostitute sought tests for the disease AIDS. Goddard Medical Associates reported that 56-year-old Dr. Earl Gelman has been placed on administrative leave from his practice.

Police said Gelman was arrested Sunday night near downtown Brockton with 28-year-old Suzette Mason. Gelman pleaded innocent yesterday in Brockton District Court to a charge of soliciting sex for a fee and was released on personal recognizance.

Police said Mason told police in an earlier arrest that she had tested positive for the HIV virus which causes AIDS. A Medical Associates spokesman said all of Gelman's patients have been told of the doctor's arrest and offered AIDS testing and counseling services. He says Gelman tested negative for the AIDS virus in a routine test a few months ago.

### Midwives may write prescriptions

Massachusetts has given certified nurse midwives the privilege of writing prescriptions. The Department of Public Health adopted regulations for the midwives. The Massachusetts legislature adopted the plan, and the governor signed it on Jan. 2, but it could not take effect until the rules were developed and issued.

Lt. Gov. Paul Cellucci co-sponsored legislation as a state senator to allow the practice. He and the chief of public health, David Mulligan, say the change will help provide better service to low-income women. Nurse midwives get regular education plus academic studies and clinical skills needed to care for women and newborns. There are more than 200 certified nurse midwives licensed in Massachusetts.

### Maine bans six-pack rings

Maine's ban on six-pack rings is coming under attack by manufacturers of the plastic yokes. The summer-long ban on the rings takes effect July 1. It is a provision of Maine's comprehensive trash-reduction law.

But an industry lobbyist said alternative cardboard connectors take even longer to decompose because of their waxy coatings. Supporters said the ban protects wildlife known to get tangled up in the plastic rings. The industry said that the threat has been overstated. The law gives manufacturers another year to come up with a new connector, but the industry hopes to use that year to convince the state legislature that yokes should remain legal.

### Dog dies protecting home

Police in Andover have spread a search for three men who injured a couple and killed their dog in a botched robbery. Officers said the men fled when the German shepherd began to chase them. They shot and killed the dog and were last seen in a gray car. Officers said 62-year-old Amy Jacobsen and 68-year-old Jacob Jacobson each suffered fractures in the attack yesterday. They said the robbers invaded their home and tried to tie up Mrs. Jacobson. She suffered a broken ankle and her husband sustained a broken hand as he tried to rescue her.

## Weather

### Hot summer weather arrives

The next few days will be mostly clear, and warm. Clouds will form toward the end of the week, with a chance of showers on Friday and Saturday. Highs today could reach into the low 90s.

**Wednesday:** Sunny, high of 90° F (32° C).

**Wednesday night:** Mainly clear, low 70s (21° C).

**Thursday:** Sunny to partly cloudy, high of 94° F (34° C).

Compiled by Lois E. Eaton and Bill Jackson

# opinion

## America's pastime explained

Column by Bill Jackson

Speaking to my new roommate yesterday, I learned that this was his first time in the United States and that he had never been to a baseball game before. This, of course, caused me to briefly consider the possibility that Boston is not indeed the hub of the universe, but I quickly convinced myself that isn't true, because otherwise God would not have nicknamed Boston "The Hub." (An obvious point many Biblical scholars miss.)

I can't imagine never having been to a baseball game before. I didn't know customs would stamp a passport for entrance to the country without proof of baseball attendance — an old ticket stub, perhaps, or maybe a beer stain on a T-shirt. I assume that my new friend is on some sort of trial admittance to the United States pending attendance of a game. (I didn't want to ask him — if I become embroiled in an international incident it might culminate in my compulsory attendance in a cricket match or soccer game or one of those other wimpy sports they play in countries where policemen carry sticks instead of guns.)

So now, as a service to my new roommate and all others who are being required to attend baseball for the first time, I would like to give some helpful information about the many rituals which surround the sport.

First, the basics. At the beginning of the game, the four referees (officially known as "turd-heads" in the vernacular of the sport) get together at the area of the field known as "the plate." They secretly decide how long the game will last, but don't tell anyone else. Sometimes it can be as little as five "innings," sometimes it can be in the teens. Often it's around nine. It's one of the secrets that make the game so fun. Leaving "the plate," three of the turd-heads take up positions at "the cup," "the saucer," and, of course, "the glass." If you are displeased with anything about the game — be it the score, the fairness, the weather, the uncomfortable

and pasties all emblazoned with the "NY" logo. Then sit in the bleachers and yell "Go Yanks!" for the whole game. You'll fit in perfectly and your fellow fans will love you for your support. Some may even strike you quite hard in the spirit of friendliness.

If you go, I suggest you sit in the bleachers. The bleachers are known for being the seats of choice among discerning Boston fans. Some helpful hints for sitting in these seats: First, the baseball game will be that thing going on in the distance, where those little people are standing. If you want to see what's happening, turn around and look at the big TV screen located behind you.

More important than the game is Bleacher Etiquette, the set of rules which ensures that watching a game from the bleachers is fun and non-life-threatening. For example, always mumble an incomprehensible apology after spilling 12 ounces of beer on the brand-new, \$20 corduroy cap of a fellow patron. Always yell "heads up" before spiking a beach ball into the face of the 4-year-old girl seated in front of you. And don't forget to promptly respond "tastes great" to any rascal who dares to yell "less filling." Most important, however, is doll etiquette.

The Boston Globe's Bella English recently reported on a new custom in the bleachers. It seems that some patrons choose to bring inflatable female dolls to the games and pass them around. What wacky senses of humor! Anyone with enough class to bring an inflatable doll to a public place must be such a woman-magnet that it's hard to believe that he needs a doll in the first place.

Anyway, these genius stud-muffins pass the doll from person to person and perform lewd acts on it. It's kind of like a Madonna concert without the music. And the young children brought to the game by proud parents get to learn all about the birds and bees instead of bats and balls. So, if you're sitting in the bleachers and one of these anatomically correct dolls is passed to you, be sure to demonstrate to a crowd of 35,000 people that you are a person of taste and intelligence by getting intimate with a piece of plastic.

But there are other, equally important customs, like the seventh inning stretch, where everyone (1) stands up to stretch, and (2) runs to stock up on beer, since beer isn't sold after the seventh inning, resulting in everyone being more plastered at the end of the game than they were in the sixth inning. Then, of course, they run to their cars and sober up while sitting in a Kenmore Square traffic jam for an hour.

And finally, there is the time-honored tradition of trying to catch a foul ball (or, even better, a home run ball.) Now, while I understand the considerable excitement people have about catching a ball in a major league game, I want to let you all in on a little secret. If you do catch a ball, it'll be used. It'll have scuffmarks and dirt and sweat all over it. If you really want a baseball, they're \$4.99 in the stores, folks.

OK, so I'm being a little facetious. I understand that there is a certain pride in catching a ball in a game. I used to try it in the little league park in Holyoke, MA, all the time . . . when I was 7 years old! No, no, in all seriousness, I suppose I can understand why some grown men are willing to risk life and limb to catch a small, rock-hard missile hurtling at them at frightening speed. They're trying to impress the dolls.

Always yell "heads up" before spiking a beach ball into the face of the 4-year-old girl seated in front of you.

seat you're sitting in, whatever — address your complaint to a "turd-head" and everyone will know who you are talking to. Your fellow fans will probably be yelling at them too.

Then the teams take the field. Here at Boston's Fenway Park, the team of choice is the New York Yankees. Seems strange that we root for a New York team here in Boston? Well, don't forget, this is America, the same country that overwhelmingly said, "Yes, damn it all, we want the second most powerful politician in our country to look like Patsy from *Happy Days*."

Anyway, before you go to Fenway, go out and buy as much New York Yankees apparel as you can find, including shirts, hats, shorts, sweatpants, socks, sneakers, boxers, bras, panties, jockstraps,

Bill Jackson '93 was ejected from the bleachers of last night's Red Sox-Yankees game for wearing pinstripes.



# The Tech

Volume 111, Number 28 Wednesday, June 26, 1991

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# puzzle

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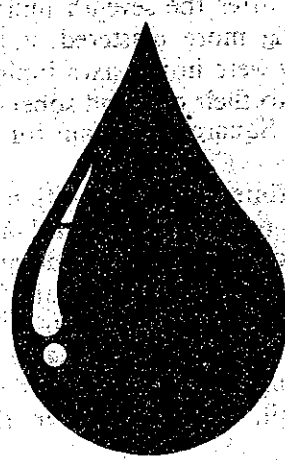
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## Gregory K. Toth awarded Bose Fellowship

The 1991 Bose Foundation Fellowship for graduate study in electrical engineering and computer science has been awarded to Gregory K. Toth.

The award includes tuition and a stipend for one year of graduate study at M.I.T. The fellowship is awarded on the basis of academic excellence and for technical achievement outside of academic study. Particular emphasis is placed on a high level of initiative and creativity.

This year's applicants demonstrated outstanding and gratifying accomplishments not only in their academic pursuits but also in their technical achievements in work assignments and class projects.

Gregory K. Toth, in particular, personifies the criteria for the Bose Fellowship award. A graduate student in Electrical Engineering, he will receive a joint BS/MS upon graduation this spring, having maintained a superior grade point average throughout his academic career. "He has gone far beyond the norm of MIT students in pursuit of technical challenge," remarks his academic advisor. Exhibiting his strong work ethic, Mr. Toth earned the well-deserved respect and admiration of his peers and management during his work with Hewlett Packard. Functioning independently, he demonstrated a high degree of insight and creativity developing a schematic generator CAD tool prototype for application within the synthesis research group as a debugging tool. It is now in the process of being refined for ultimate distribution and use as a standard at HP. These achievements are consistent with the Bose Fellowship standards for excellence.

Mr. Toth's manager at HP concurs: "He is very diligent and hard working, and demonstrates his tenacity in conquering some difficult and elusive problems. He has exceeded our collective expectations for his work... (and) shown himself to be of good character, acting responsibly and professionally in all areas."

An active member of Tau Beta Pi and Eta Kappa Nu national engineering honor societies, Mr. Toth plans to apply his acquired knowledge and natural tenacity in original ways, especially toward new and exciting research activities."

The Bose Foundation is proud to have Gregory Kalman Toth as the 1991 recipient of the Bose Foundation Fellowship.



BOSE Foundation  
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# The return of the mighty Elvis Costello

## New release *Mighty Like a Rose* stands up on vinyl and in concert

### MIGHTY LIKE A ROSE

Elvis Costello.  
Warner Brothers.

By JEREMY HYLTON

**E**LVIS COSTELLO, the most acerbic voice of post-punk alternative music, is middle-aged. He also sports a beard on the cover of his new album, *Mighty Like a Rose*. Last year's release of *Girls Girls Girls* reminds one just how long Costello has been angry with the world: The album covers work between 1976-1986. Can he still sound caustic and desperate without sounding bitter and redundant?

Yes. With the help of the Dirty Dozen Brass Band and some beautiful orchestration, Costello sounds different. Not his vocals or lyrics, but the sound behind it. This variation on a theme also attests to the collaboration between Costello and Paul McCartney.

In the first single from the album, "The Other Side of Summer," he sings: "A teenage girl is crying 'cos she don't look like a million dollars/ So help her if you can 'Cos she don't seem to have the span." These lyrics don't sound

ent than the lyrics for *Spike* (well, maybe the songs aren't as angry as "Tramp the Dirt Down" was), but Costello is singing over a melody that is reminiscent of the Beach Boys.

"The Other Side of Summer" sets a rather serious tone for the album with its environmental message: It ends "And kiss 'goodbye' to the earth/ The other side of summer." Costello, however, follows the song with "Hurry Down Doomsday," whose title belies its comical nature. The song's subtitle is "The Bugs Are Taking Over."

This is a fun song. Each chorus ends with Costello, more talking than singing, shouting "You want to scream and shout my little waxen lout/ Hurry down doomsday the bugs are taking over." The song is all the drama and excitement that a mournful flick as a wood-

Maybe this album does not sound tired because Costello seems to have so much fun on it. In addition to songs like "Hurry Down Doomsday," there are cuts like the 22-second "Interlude: Couldn't Call It Unexpected No. 2" (Numbers 1 and 3 are not on the album, but Number 4 is the last track.) This acoustic piece features a rich sound from the Dirty Dozen Brass Band that seems to summarize all that was musical about Bruce Springsteen and the E Street Band.

The liner notes are a hoot, too. The notes for "Invasion Hit Parade" read: "Big Stupid Guitar and little foolish organ: E.C." while Mitchell Froom and Marc Ribot play the so-called "industrial jack-ass" on "How to be Dumb."

Some of the songs on the album are pretty — plain and

Costello, much like "This Town" from *Spike*.

Costello's collaboration with McCartney, which produced songs like "Veronica" from *Spike* and "You Want Her Too" from McCartney's *Flowers in the Dirt*, continues to influence Costello's work. The two penned a pair of songs for this album, and the song "Sweet Pear" opens with a riff obviously borrowed from the Beatles' work in the late 1960s.

One could draw interesting parallels between Costello and David Bowie. Both have produced wonderful discographies during their careers, as evidenced by their recent retrospectives, but Bowie seems to have faded. His recent work pales in comparison to the *Ziggy Stardust and the Spiders from Mars* album.

Costello, on the other hand, continues to release interesting and original material. *Mighty Like a Rose* is not an exception. The album has a number of strong cuts and, more importantly, the material is fresh. The Dirty Dozen Brass Band and orchestration only strengthen the album.

Note: *Mighty Like a Rose* is an album that *Spike* was, but not criticism.

### ELVIS COSTELLO

With The Replacements  
Great Woods, June 21

By DEBORAH A. L...

**T**HE LAST TIME I SAW Elvis Costello perform, it was at Brandeis University, where Costello stopped as part of the tour supporting his 1989 album, *Spike*. He was in fine form, both musically and theatrically. Midway through the show, he took requests based on the selection of one of "seven deadly sins" from a giant satin heart.

His show last Friday at Great Woods poured all of that theatrical energy into the music, and the additional effort really showed. Costello sounded sharp, polished, and totally in control. His new band, the Rude 5 (actually comprising four members), was equally tight, especially the drummer, whose opening solo on "Hurry Down Doomsday (The Bugs are Taking Over)" echoed a driving jungle beat.

Costello opened the show with two old numbers, "Accidents Will Happen" and "The Angels Want to Wear my Red Shoes." But this evening was no retrospective of Costello's greatest hits; he dedicated most of his set to his more recent material, including songs from *Spike* and his current release, *Mighty Like a Rose*.

Many of the selections from *Mighty Like a Rose* stood with Costello's earlier

work as some of these was "So Like a Song about a lost lover. The song with the loose, jazzy rhythm of the *Twin Peaks* soundtrack.

Curiously, the material from *Spike*, an album which received mixed reviews, was some of the most dynamic. Costello brought out the gospel flavor and heartache of "Deep Dark Truthful Mirror," the poignancy of "Veronica," and the twisted humor of "God's Comic." The latter, a song about a "comical priest" who dies, goes to heaven, meets God, and is told about how miserably humans have screwed up the world, is an unlikely candidate for a sing-along, but that was exactly what Costello did. Imagine thousands of people singing the following lines:

Now I'm dead, now I'm dead,  
Now I'm dead, now I'm dead.

I was scared, I was scared,  
I was scared, I was scared.  
You might have never heard of  
God's Comic

Costello's skill as an arranger showed in the concert version of "The Other Side of Summer," the current single. Instead of playing the song straight, matching venomous lyrics with Beach Boys harmonies, Costello switched the song to 6/8 time, giving it a more rollicking feel. He also altered "Hurry Down Doomsday (The Bugs are Taking Over)," augmenting the drum line so that it was not only longer but more prominent. Costello frequently records different arrangements of songs — there are at least three versions of "The Blue Chair" — but it seems as though no version is better than any other; each just

and colors from "Hurry Down Doomsday (The Bugs are Taking Over)" and "The Other Side of Summer." The interesting changes, but were no more

and the concert as he had with a series of old standards: "Up," "(What's So Funny 'Bout) Love, and Understanding" and "Reason."

The Replacements opened the evening with "I Will Dare," their jubilant song from *Let it Be*. Since their inception, they've lost half of their original line-up, replacing guitarist Bob Stinson and drummer Chris Mars. Yet they have retained much of their early sound: the hard-edged guitar, the throbbing bass and drums, and singer Paul Westerberg's anguished, frustrated lyrics.

For a change, the band sounded focused. This was the first time I had ever seen the band perform sober, and they lost their alcohol-induced sloppiness, which, though occasionally both charming and funny, was mostly annoying and detrimental to their music. They slammed through 14 songs in 45 minutes, mixing old songs such as "Waitress in the Sky" and "Answering Machine" with material from their latest album, *All Shook Down*.

The Replacements' best number, however, turned out to be a cover, "Route 66." They delivered a gritty, bar-band version that blew away Depeche Mode's.

# 1773 get degrees at Commencement

(Continued from page 1)

urged. He added, "Scientists and engineers are the only people who can redress misconduct. Universities, as the primary locus of basic research, have a special responsibility in this regard. In cases of alleged wrongdoing, they have a duty to analyze the facts fairly, determine accountability, protect the rights of all involved, and see that any falsehood is corrected."

Massey concluded his speech by saying "each of you will become standard-bearer for one of the greatest institutions of higher learning in the world. I know you will carry out this responsibility to MIT wisely, and with integrity, in whatever career you choose."

Charles M. Vest, in his first commencement address as president of MIT, emphasized community service, calling the recent years "an era . . . characterized by far too much emphasis on the self . . . often manifested as overt greed," and urging, "It is time for a change."

Vest cited the work of Vannevar Bush '16 as an example of how a scientist may serve the public interest. Bush "mobiliz[ed] American science and engineering during World War II [and helped] formulate the policies that guided engineering education, the federal government's support of basic research, and the utilization of technical knowledge for America's defense and industry."

Vest also stated, "We must re-

duce the terrible escalation in the bifurcations in our society . . . bifurcations between rich and poor . . . between those who contribute to society and those who are rendered impotent to do so . . . between those who have good health care and those who do not."

Vest and Provost Mark S. Wrighton presented 1964 degrees — 976 bachelor of science degrees and 988 advanced degrees. The degree recipients included 503 women. The advanced degrees consisted of 216 doctorates, 747 master's degrees, and 25 engineer degrees.

Class of 1991 President Dawn L. Mitzner presented Vest with the class gift, to create the MIT Teaching Fund, a loan forgiveness program to encourage MIT graduates to become public school teachers. In her remarks, Mitzner called the Class of 1991 "the well-rounded class."

Unlike previous years, there were no protests at this year's Commencement. Bob DiIorio of the MIT News Office, who was stationed next to Campus Police Chief Anne P. Glavin specifically to report on protests, said that he "didn't hear a peep."



President Charles M. Vest congratulates a member of the Class of 1991. Michael J. Franklin/The Tech

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# Baden pleads guilty after Burton fire

(Continued from page 1)

probably recommend "a very strict suspended sentence for a period of five years probation with psychiatric treatment." This sentence would take effect after incarceration.

Birnbaum noted that the sentence will ultimately be determined by the judge, Paul A. Chernoff.

### Partial motive said to be conflict with other student

Birnbaum said in court that Baden was partly motivated by animosity toward his former next-door neighbor in the suite, David E. Borison '91, according to *The Middlesex News*.

One week prior to the fire,

Borison and Baden had a major quarrel concerning the standard of "kashrut," or "kosherness," of their suite kitchen, one of a few kosher kitchens on campus. In an interview after the fire, Borison said that he and Baden had been on friendly terms since the dispute.

In court Levine said that Baden intended to harm Borison but not any of the other suite members, *The Middlesex News* reported. Levine also said that it is unclear what Baden's exact state of mind was at the time, the *News* reported.

When contacted yesterday, Borison did not want to comment.

In court, Baden said he did not

remember lighting the torch to set the fire, but did recall making it, according to the *News*. Baden had opened the door to Borison's room and poured gasoline inside, and then ignited the gasoline to start the fire, the *News* reported.

The dormitory sprinkler system kicked in soon after and put out the fire. Several students were treated for smoke inhalation, and one student broke her jaw while leaving the building, the *News* reported. The fire forced the evacuation of the dormitory.

When he was arraigned in January, Baden was ordered to stay away from the MIT campus as part of the bail terms; that bail status has not changed, Birnbaum said.

### MIT to take action later

Baden has been suspended from MIT, Dean for Student Affairs Arthur C. Smith said.

Associate Dean for Student Affairs James R. Tewhey said there is "no question at all that MIT will take some action when the court case is completed."

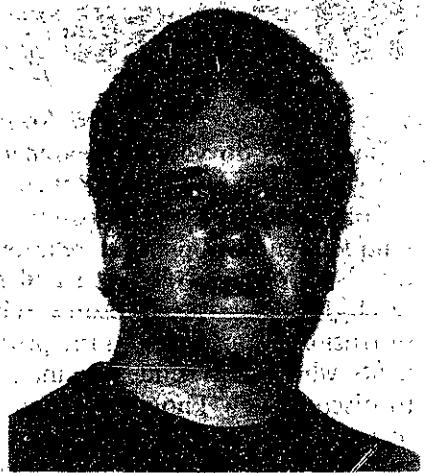
Tewhey added that if it is impossible to hold a hearing — in the case that Baden goes to jail — "we might take action anyway." He added, "we will evaluate it when we know what the circumstances are."

The Institute's policy on students who face criminal charges is to wait until the court process has ended, Smith said.

Associate Dean for Student Affairs Robert M. Randolph did not want to comment until after the sentencing, but he did say, "pleading guilty to five counts of assault with intent to murder is . . . an extremely serious acknowledgment of guilt."

Randolph said the court had notified MIT and the other five suite members of the court's actions as they occurred.

Levine said, "this case has a long way to go before it's going to be resolved." He did not want to discuss it further, "given the history of it . . . [and] because it affects too many people's lives."



William Chu/The Tech Steven H. Baden '92

## Errata

An article on Commencement in the June 3 issue of *The Tech* contained an incorrect figure. Degree recipients that day numbered 1773.

\* \* \* \* \*

A photo caption in the June 3 issue of *The Tech*, which referred to a May 10 press conference at MIT given by Sen. Edward Kennedy (D-MA), contained an incorrect date. Kennedy's nephew, William Kennedy Smith, was charged with rape May 9; the day before the press conference.

# Friedman named Institute professor

(Continued from page 1)

member to be named Institute professor.

Friedman served as head of the Department of Physics prior to Birgeneau, from 1983-1988. In 1989, he was named William A. Coolidge professor of physics. He is also a member of the Creative Arts Council.

Friedman is viewed to be the key figure responsible for the fact that MIT educates 15 percent of the underrepresented US minorities studying physics. As department head, he emphasized undergraduate education and the

recruitment of strong junior faculty.

Outside of MIT, Friedman is chair of the Scientific Policy Committee of the Superconducting Supercollider being built in Texas, and he has served on the Program Advisory Committee and Scientific Policy Committee of the Stanford Linear Accelerator.

Birgeneau said he was one of the first faculty members to suggest that Friedman be considered for the honor. Friedman was nominated Jan. 10, and the process which ended in naming him Institute professor "happened very rapidly," Birgeneau said.

### Nomination process

Nominations for Institute professor are made by members of the faculty representing different departments, preferably different schools, at MIT.

On receipt of a nomination, the chair of the faculty consults with the president, provost and dean of the nominee's school to determine whether the nominee's qualifications justify proceeding further.

If so, the chair then consults with the Academic Council and determines whether the appointment would unduly increase the total number of Institute professors or lead to an inequitable distribution of Institute professors within the different segments of MIT.

If they decide to continue, the chair, jointly with the president, then appoints an ad hoc faculty committee, including members from within as well as outside MIT.

The committee presents its recommendations to the president, who brings the recommendations to the Academic Council for review and advice and then submits the appointment to the Executive Committee of the Corporation for formal approval.

Friedman received his bachelor's degree (1950), master's degree (1953), and doctorate (1956) from the University of Chicago. He was a research associate at the University of Chicago and Stanford University before coming to MIT in 1960.

## See puzzle, page 5

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## notices

### Volunteer Opportunities

The Buddy Program of the AIDS ACTION Committee is looking for volunteers to provide emotional and practical support to our clients on a one to one basis. Interested persons need to fill out an application and attend our orientation and training. Info: 437-6200 x450.

Boston Partners in Education is seeking area college students to serve as school volunteers in the city's public elementary, middle and high schools. Be a tutor, mentor, classroom assistant, story reader, enrichment presenter or motivational speaker. Help especially needed in math and science, Reading Aloud, and English as a second language. Info: 451-6145.

Women's shelter needs women volunteers to stay overnight once a month. Male or female volunteers needed from time to time to do general maintenance and fix-up work. The shelter is open on Tuesday, Thursday, Friday, and Sunday nights. Call Beth Greeney at 524-3431 or Meg Smith at 265-6006.

Students interested in volunteering in the medical field can find great opportunities at the Mass. Eye and Ear Infirmary. There is a full range of regular volunteer opportunities including work in the vision rehabilitation center, pathology lab, and on the patient floors. Contact Ruth Doyle at 573-3164.

The Cambridge Department of Human Services needs volunteers during after school hours to tutor, be a Big Brother/Big Sister, help with elementary school sports (gymnastics especially) and special one-time events. Lots of schools and locations to choose from. Contact Judy Bibbins or Laurel Shepard at 498-9072.

The Cambridge Youth Guidance Center seeks volunteers interested in spending a few hours a week with a child who has emotional problems. Call Dr. Judy Osher at 354-2274.

Volunteers needed to bag fresh produce for the Red Cross at 99 Brookline Ave., Boston, on Mondays and Fridays from 10:30 to 12 am. Call Nancy Jamison at 282-0728 or Lynne Klumb at 262-1234 ext. 236.

Help a newly arrived family build a new life: Soviet Immigrants in Boston area need volunteers to help with language and understanding life in America. Please give two to three hours a week. More info: Joanne Spector at 566-1230. Jewish Family & Children's Service, 637 Washington Street, Brookline.

### Counseling

The Samaritans — someone to talk to and befriend you, are on call 24 hours a day, 7 days a week. The center, at 500 Commonwealth Avenue, Kenmore Square, is open from 8 am to 8 pm every day for people to come in and talk. Service is free and completely confidential. Call 247-0220.

Parenting is a tough job. If you need help surviving the parenting experience, the Family Support Network and Parents Anonymous are co-sponsoring a support group for isolated or overwhelmed parents. Every Tuesday night from 6 pm to 8 pm at Roxbury Children's Service, 22 Elm Hill Ave., Dorchester.

The Family Support Network is also sponsoring a support group for teen parents, every Thursday night from 6 pm to 8 pm at Roxbury Children's Service.

Today, more than one million men and women are demonstrating by their personal example that alcoholism is an illness that can be arrested. If you have an alcohol related problem please get in touch with the Alcoholics Anonymous group nearest you — with complete assurance that your anonymity will be protected. Call 426-9444 or write: Alcoholics Anonymous, Box 459, Grand Central Station, NY 10163. You will receive free information in a plain envelope.

Counseling and HTLV-III blood screening services are available for individuals concerned about exposure to the virus associated with AIDS. For more information about this free confidential service sponsored by the Department of Public Health and Counseling Services, call 522-4090, weekdays from 9 am to 5 pm. Outside Boston call collect.

The Beth Israel Hospital hosts a Rape Crisis Group on Tuesdays at 7:30 am for women who are experiencing disruption in their lives immediately following or up to six months after being raped. The long-term crisis group meets Thursdays at 6 pm. For more information, call (617) 735-4738.

Getting High? or Getting Desperate? If drugs are becoming a problem, call or write: Narcotics Anonymous, 264 Meridian St., East Boston 02128, (617) 569-0021. Local meetings held at the MIT Medical Department, E23-364, on Mondays from 1-2 pm.

The Greater Framingham Area Veteran's Outreach Center is holding rap sessions for Vietnam veterans every Wednesday (except the third week of the month, when they will be held Thursday) at 7 pm. There is also a group for the wives of Vietnam veterans. For more information, call 879-9888.

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# Massey encourages honesty in research

(Continued from page 2)

So, where do young researchers first learn the rules of the game that protect the integrity of their endeavors?

For generations, the community has relied on the unique mentor-apprentice relationship that develops during the process of doctoral and postdoctoral research to teach these important lessons. When all goes well, a bond of trust develops between the professor and his or her students which is grounded in intellectual curiosity, a desire to discover new knowledge, and a common commitment to truth. What is conveyed and what is learned is more than simply a body of facts; it is an approach to understanding, an appreciation of standards, and a set of values — in effect, an ethic.

I was very fortunate in my own graduate training to have had a research director from whom I learned a great deal of physics and much more besides. Professor Eugene Feenberg (now deceased) was a prominent physicist, well-respected among his peers, a man of integrity and unyielding honesty. All of us who were his students saw these traits in him and profited from working with him.

To come to class ill-prepared or not take time to listen to his students and their problems; to publish a result prematurely simply to gain priority; or to put his name on a paper by one of his students when he had not shared in the work himself — all these things were anathema to Gene Feenberg. Those of us who were his students realize how lucky we are to have had an almost ideal mentor-apprentice relationship.

It is the paradox of research that reliance on truth is both the source of modern science and engineering's enduring resilience and its intrinsic fragility.

Most mentor-student relationships, however, are not ideal. Too often, important lessons in scientific integrity remain unlearned. Fundamental changes in the way research is conducted in many fields, not just physics, increase this possibility.

We have moved away from small tightly knit research communities, in which misconduct is easily observed, toward large anonymous research enterprises, in which tasks are fragmented and accountability is hard to ascribe. This change imperils traditional scientific ethics.

Consider the experimental team that did the work resulting in the 1984 Nobel Prize in physics. It consisted of over 150 people. What is it like to be a graduate student or a postdoc in a group of 150? Exciting and important definitely, but unlikely to provide the same opportunities for personal interactions with a mentor that one has in a smaller group. In such circumstances, some important values may go unlearned, and a key safeguard against scientific misconduct left undeveloped.

Experimental replication, another major safeguard against research improprieties, is also more difficult. The size, complexity, and cost of modern research projects

make it less likely that they will be reproduced — even in fields where it is possible. Replication of experiments always has been more of a problem in the social, biological, and clinical sciences where there are often too many uncontrollable variables.

In addition, the vast expansion in the amount of research carried out has been accompanied by an explosion in scientific publications. As a result, too much of what is published goes unchallenged.

I recently heard of a Czech article published in 1887 entitled "O Uplavici," [pronounced *u pla vee chee*] literally, "On Dysentery." When the title was translated by an abstracter it became the name of the author, O. Uplavici. For many years it was cited as such.

This was just a thoughtless error, one that probably had little bad result. But indifference to errors can be very damaging. Errors lead researchers down blind alleys; published errors, if not corrected, can set back an entire research community.

Scrupulous attention is especially important now. Growing competition for funds, tenure and acclaim; increasing chances of financial conflicts of interest among researchers; even the scope of intellectual ferment — with disciplinary boundaries breaking down, and new ideas and techniques challenging traditional paradigms — all these conditions make science and engineering more vulnerable to falsehoods.

Under such circumstances, it is essential that the community of researchers — as individuals and through the institutions that represent them — uphold the highest standards of integrity. Scientists and engineers are the only people who can redress misconduct. Universities, as the primary locus of basic research, have a special responsibility in this regard. In cases of alleged wrongdoing, they have a duty to analyze the facts fairly, determine accountability, protect the rights of all involved, and see that any falsehood is corrected.

Like Caesar's wife, universities must be above reproach in all conduct relating to research — be it ensuring scientific integrity or allocating indirect costs. As the costs of academic research increase, so too does the universities' dependence upon federal support. As the federal investment grows, so too does the public's scrutiny of the research universities. Misconduct of any sort imperils public sponsorship of research.

It is a high tribute to the integrity of our research universities that all who have investigated the incidence of scientific misconduct find very few cases of bona fide fraud. There are, however, more common errors in fact and in judgment that also have damaging effects.

Errors are inevitable because researchers live in a world of uncertainty. How, then, can the young scientist or engineer prepare for such a life today, with neither the certain guidance of a close mentor nor a firm sense of the "rules of the game?"

There are no easy "correct" answers to this question. Careful attention to treatment of data, choice of methods, and evaluation of one's hypotheses can help guard against the most common pitfalls — mistakes and self-deception.

Publication in a peer-reviewed journal provides another important safeguard on the integrity of research. Critical review by peers can detect errors and omissions invisible

to the untutored eye. For this reason, it is the most acceptable means for disseminating research results.

There are also some "incorrect" behaviors to be avoided. Deliberately bypassing the peer-review process is one. Such action can short-circuit the self-correcting mechanisms of science and engineering and also damage public trust. Researchers who release their findings directly to the public risk adverse reactions later if their results are shown to be mistaken or misinterpreted by the media.

I doubt that "cold fusion" research benefited from the fact that much of its scientific review was carried out in the mass media. In the same vein, the credibility of the entire university research enterprise has been jeopardized by the action of individual schools attempting to bypass peer review to obtain earmarked federal funds for their research facilities.



Vipul Bhushan/The Tech  
This graduate jumps jubilantly after being awarded his degree.

The practice of honorary authorship also deserves scrutiny. Renaissance painters trained their apprentices by allowing them to work on canvases to which the master then signed his name. This tradition gave way, over time, to fairer recognition of an individual artist's contributions. In some fields of science and engineering, it is traditional to place the senior researcher's name on all work done by the group. Not every tradition is good. Honorary authorship diffuses accountability and can lead to irresponsible research.

Failure to bring wrongdoing to the attention of those responsible for the research is also incorrect behavior. Any assault on the integrity of science and engineering damages all researchers. Misconduct erodes research standards and norms, and leaves a bad impression of science and engineering in the minds of the public. Researchers

## Vest gives charge to graduates

(Continued from page 2)

essor, vice president, first dean of engineering, and chairman of the Corporation in his long career at MIT.

But he is best remembered, perhaps, for his genius in mobilizing American science and engineering during World War II and then, after the war, for helping to formulate the policies that guided engineering education, the federal government's support of basic research, and the utilization of technical knowledge for America's defense and industry.

At the end of World War II, Bush authored a remarkable report, entitled "Science — The Endless Frontier," which established the structure of federal support of scientific research. We are all the beneficiaries of this system, which in turn has made America's research universities the best in the world. This report also led to the establishment of the National Science Foundation, whose distinguished new director, Walter Massey, has addressed you today.

In his reach beyond the campus, both in part-time and full-time roles in the service of the country, Vannevar Bush was an exemplar of the scientist-citizen whose value system incorporates dedication to the larger society.

The world today — our "global village" — needs the same kind of energy, intellect and skill that legions of scientists and engineers provided to the nation during World War II, when they were mobilized to their task by Vannevar Bush. While today's challenges may at the moment seem somewhat less focused and urgent than those linked to a war, my guess is that they will soon take on nearly the same kind of intensity as we try to cope with them.

The journey toward the "endless frontier" has never been as exciting, challenging and full of rich promise as it is today. You are fortunate to be starting on it. And we are fortunate to have you do so.

As you progress, many opportunities to serve your fellow men and women, in large ways or small, will present themselves again and again. I urge you take advantage of them — and to use your talents and your education wisely.

I am extremely pleased that in this ceremony MIT has retained its tradition of personally recognizing each and every graduate as an individual. My right hand, of course, may dissent from this opinion.

But as we move toward your march to the platform and the presentation of your degrees, an act accompanied by a hearty handshake from the president or the provost, let me tell you that this is a moment rich with promise. It may change your life.



Michael J. Franklin/The Tech  
Mickey Mouse poses in graduation attire.

I recently learned that a few years ago, a man came up to former President Jerry [Jerome B.] Wiesner. He said, "Dr. Wiesner, do you remember me? You shook my hand at graduation 20 years ago. And you said something to me as I came through the line to receive my diploma that changed my life. It was the secret of my successful career."

Jerry reluctantly admitted that he wasn't sure that he specifically remembered him, and said, "Well, my goodness, what did I say?"

"You said, 'Keep on moving. . . . Keep on moving.'" Today, I too suggest that you keep on moving — keep on the journey toward that endless frontier.

And as you do so, I say to you: God Speed. Good Luck. Go get 'em!

It is essential that the community of researchers — as individuals and through the institutions that represent them — uphold the highest standards of integrity.

have a professional and ethical duty to protect the integrity of the enterprise and sanction misconduct promptly.

The conduct of research is a complex and demanding task. Why, then, pursue it? The answer is straightforward. The possibility of observing or understanding what no one has ever observed or understood before can be irresistible.

Ever since Archimedes streaked through the streets of pre-Christian Syracuse shouting "eureka," scientists and engineers have found in the moments of discovery or innovation one of the most exhilarating experiences in their lives. Even the process of research itself can be deeply satisfying — putting the pieces of a puzzle in place and making sense out of a mystery.

Research results in knowledge that is as certain and reliable as anything we know. Science and technology are among humanity's greatest intellectual achievements, having transformed not only the material condition of our lives but also the way we see the world. A career in research offers an opportunity to join the pantheon of scientists and engineers who have changed the condition of life on earth and brought the universe to our doorstep.

T. S. Eliot once said: "We shall not cease from exploration/ And the end of our exploring/ Will be to arrive where we started/ And know the place for the first time."

We have now arrived where we started. You have survived the commencement exercises — almost. Soon, you will be certified well-educated. And each of you will become standard-bearer for one of the greatest institutions of higher learning in the world. I know you will carry out this responsibility to MIT wisely, and with integrity, in whatever career you choose.

I am glad to have had the opportunity to share your commencement, and I thank you.

# comics

I sat around and watched TV for a while today.

I watched "Unsolved Mysteries" and they had a story about a UFO landing in Pennsylvania.

They made it sound like it could have actually happened.

I thought it was a pretty good show.

## Jim's

When I came home today I noticed the light by my door was burned out.

I had a hard time trying to find my key because it was so dark.

I thought I should call the landlord about it.

But I didn't feel like doing it right then.

## Journal

When I came home today I had to try to find my keys in the dark hallway.

I came in and saw Mr. Peterson sitting by the door.

I sat there and petted her for a while.

I worked at the copy store today and a lot of people were coming in.

I made tons of copies and worked the cash register, too.

Once I noticed Ruth walking by outside.

She didn't see me, but I was too busy to stop and talk or anything anyway.

by

As I was coming home today I saw the guy from down the hall.

He was walking more slowly than usual.

He walked by me without saying anything.

I tried to find my door key in the dark hall.

(I still haven't called the landlord about the burned-out light.)

## Jim

I worked at the copy store today.

I was there earlier than I usually am.

Hal, the manager, Julie, and Joel were all there.

Things weren't as laid back as when just Brian and I are working the evening shift.

# 來利樓

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