

HALLOWEEN HACK—These "stained-glass" windows, the center one featuring the MIT beaver, were part of an elaborate Halloween hack in Lobby 7 that went up early last Friday morning. See page 8 for another photo and a story on the hack supplied by a representative of "The Devotees of Our Lady of the All Night Tool," as the hackers refer to themselves.

Photo by Donna Coveney

SEVERAL CHANGES

Campus Safety To Be Improved

■ By Robert C. Di Iorio
News Office

To enhance campus safety, MIT will double its Safe Ride fleet to four vans, improve lighting at certain locations and add several outdoor emergency telephones, Campus Police Chief Anne P. Glavin has announced.

The two additional vehicles are expected to cut the Safe Ride waiting time to approximately 15 minutes, about half the longest wait now reported, she

said.

These actions, and several others detailed by Chief Glavin, follow a broad review of campus safety considerations and security procedures undertaken following the September 18 murder of an MIT student on Memorial Drive near the library.

The changes, recommended by Chief Glavin and by a number of ad hoc committees and review groups formed after the murder, were approved by Senior Vice President William R.

Dickson. The Institute Committee on Safety, which he chairs, also endorsed the recommendations.

Chief Glavin has set December 1 as a target date for the enlarged Safe Ride program, but whether that date can be met, she said, depends on how quickly dealers can deliver the new handicapped-accessible vans and the radio equipment each will carry. In addition, six new drivers must be hired to operate the vans.

(continued on page 4)

INFORMATION TECHNOLOGY

Productivity Is Focus of New Initiative at Sloan

A new program, PROFIT (Productivity from Information Technology), has been established at Sloan to define new processes required to gain greater productivity from information technology (IT) in both the private and public sectors. The goal will be to "en-

hance productivity in areas ranging from finance to transportation, and from manufacturing to telecommunications."

MIT President Charles Vest and Provost Mark Wrighton announced the new PROFIT Program on October 23

when PROFIT welcomed its first charter sponsor, Bull HN Information Systems, Inc. Axel J. Leblais, president and chief executive officer of the sponsor company, was present at this occasion. Senior Research Scientist Amar Gupta and Stuart Madnick, John Norris

NOV. 20 REVIEW

MIT Urges NSF to Take 'Longest View' of Science

How should American science serve the nation and the world in the 21st century?

This is the question being debated, with a Nov. 20 deadline, by the Special Commission on the Future of the National Science Foundation (NSF). MIT and more than 500 other individuals and institutions submitted comments on the topic to the agency last month.

The National Science Foundation, in the view of MIT, "should be the agency with the broadest and longest view of science and technology in the national interest.

"Its first responsibility should be to see to the health of basic research, research that is inspired by intellectual opportunity and the quest for fundamental understanding, and not necessarily by predetermined practical objectives," MIT said in a position paper submitted to William H. Danforth, co-

chair of the Special Commission and chancellor of Washington University (St. Louis).

(See full text on page 5.)

"This should be accomplished primarily by supporting research and graduate education," MIT said.

"It should be emphasized that it is the entire system of government, industrial, and academic components that is in need of attention, and we believe that the NSF review should be conducted in this context," said the paper signed by President Charles M. Vest, Provost Mark S. Wrighton, Associate Provost Sheila E. Widnall, Vice President for Research J. David Litster, Dean of Engineering Joel Moses and Dean of Science Robert J. Birgeneau.

In the statement, MIT said that the support of science and technology should be determined at the grass roots (continued on page 5)

GENE LOCATION

Melanoma Breakthrough Is Reported by Biologists

A team of biologists led by a scientist at MIT has reported the rough location of a gene that may play a crucial role in the early growth of melanoma skin cancer.

The work, which could lead to new diagnostic strategies and treatments for melanoma, was published in the November 1 issue of the Proceedings of the National Academy of Sciences.

The first author of the paper is Jane W. Fountain, a postdoctoral fellow in the Center for Cancer Research (CCR) who works in the laboratory of Professor David E. Housman of biology, a co-author of the paper. Other MIT authors are Maria Karayiorgou, a postdoctoral associate at the CCR, and Nicholas C. Dracopoli, a principal research scientist at the Center for Genome Research.

Their colleagues in the work are Marc S. Ernstoff and Linda Titus-Ernstoff of Dartmouth University; John M. Kirkwood and Daniel R. Vlock of the University of Pittsburgh; Brigitte Bouchard, Setaluri Vijayaradhi, and Alan N. Houghton of the Memorial Sloan-Kettering Cancer Center, and Jill Lahti and Vincent J. Kidd of St. Jude Children's Research Hospital in Memphis.

According to Dr. Fountain, evidence from a number of studies, including the one just published, "suggests that a rearrangement or deletion of a gene on chromosome 9 (one of the 23 pairs of human chromosomes found in every cell) may be the first or an initiating event in the development of melanoma."

"This type of gene," she continued,

"is known as a tumor suppressor gene. Its normal function is to keep cell growth in check." When this gene is deleted from the chromosome or undergoes a mutation, "it presumably allows the predestined tumor cells to grow in an aberrant or uncontrolled fashion."

Dr. Fountain and colleagues have taken a step towards locating the tumor suppressor gene for melanoma by "narrowing the [search] on chromosome 9 down to a few million base pairs (there are approximately 145 million base pairs total on this chromosome)." The team is now "actively searching for candidate genes in this region."

Dr. Fountain expects that it will take from one to three years to identify the culprit gene, and from five to 10 years to potentially develop new diagnostic strategies and treatments for melanoma based on this information.

(continued on page 4)

IN BRIEF

COPIOUS COPIES

The Graphic Arts Copy Center in Rm 11-004 is now open until 9pm Monday through Thursday and until 6pm on Friday. The new hours are designed to provide overnight copy service, with delivery of material to offices the following morning. The self-service area will also be open to customers for the extended hours. The Copy Center, which opens every weekday at 8am, provides competitive prices and a variety of bindings.

INSIDE:

■ The Final Report of the Presidential Task Force on Career Development of Minority Administrators at MIT is included as a special section in today's paper.

(continued on page 8)

HISTORIAN

Fitzgerald Appointed To Class of '56 CD Chair

Deborah Fitzgerald, associate professor in the history of technology in the Program in Science, Technology and Society (STS), has been named the Class of 1956 Career Development Professor.



Fitzgerald

The career development chair was established by the class in celebration of its 25th reunion to recognize exceptional promise in gifted young faculty. In announcing the appointment,

Philip S. Khoury, dean of the school of humanities and social science, said that "Deborah Fitzgerald is one of the leading historians of technology of her generation and has contributed in important ways to the life of STS and the Institute through her intensive teaching and extensive service."

Professor Fitzgerald is the author of

The Business of Breeding: Hybrid Corn in Illinois (Cornell University Press 1990) and several articles on technological changes in agriculture in America and developing countries. Her current research focuses on the role of agricultural economists and engineers in redefining 20th-century American agriculture. Professor Fitzgerald is co-editor of a Johns Hopkins University Press book series on rural change and is an advisory editor for the journal *Technology and Culture*. She also sits on the editorial board of the MIT Press.

Before coming to MIT in 1988, Dr. Fitzgerald was assistant professor and head tutor in Harvard's History of Science department. She received her BA in history and English at Iowa State University in 1978, and her MA in 1981 and PhD in 1985 in the history and sociology of science and technology at the University of Pennsylvania. In 1992 she was awarded MIT's Graduate Student Council Teaching Award for the School of Humanities and Social Science.

MUSICIAN

Ziporyn Receives Wade Award, '58 Professorship

Assistant Professor Evan Ziporyn of the Music and Theater Arts Section is the recipient of both the 1992 Wade Award and the Class of 1958 Career Development Professorship. Professor Ziporyn is a composer and clarinetist whose work has been critically acclaimed on four continents.



Ziporyn

In May 1992, Provost Mark S. Wrighton announced that Professor Ziporyn would be this year's recipient of the Wade Award,

a \$30,000 grant given annually since 1985 to a junior faculty member to support his or her research or other

creative projects. Professor Ziporyn is the first School of Humanities and Social Science faculty member to receive the award. The grant will be used to support Dr. Ziporyn's scholarly activities and to help produce his full-length opera based on the life of the seventeenth century mystic, Sabbatai Sevi.

In July, Dr. Ziporyn was appointed Class of 1958 Career Development Professor, a chair established to recognize and encourage innovative and imaginative teaching by junior faculty members who show exceptional promise.

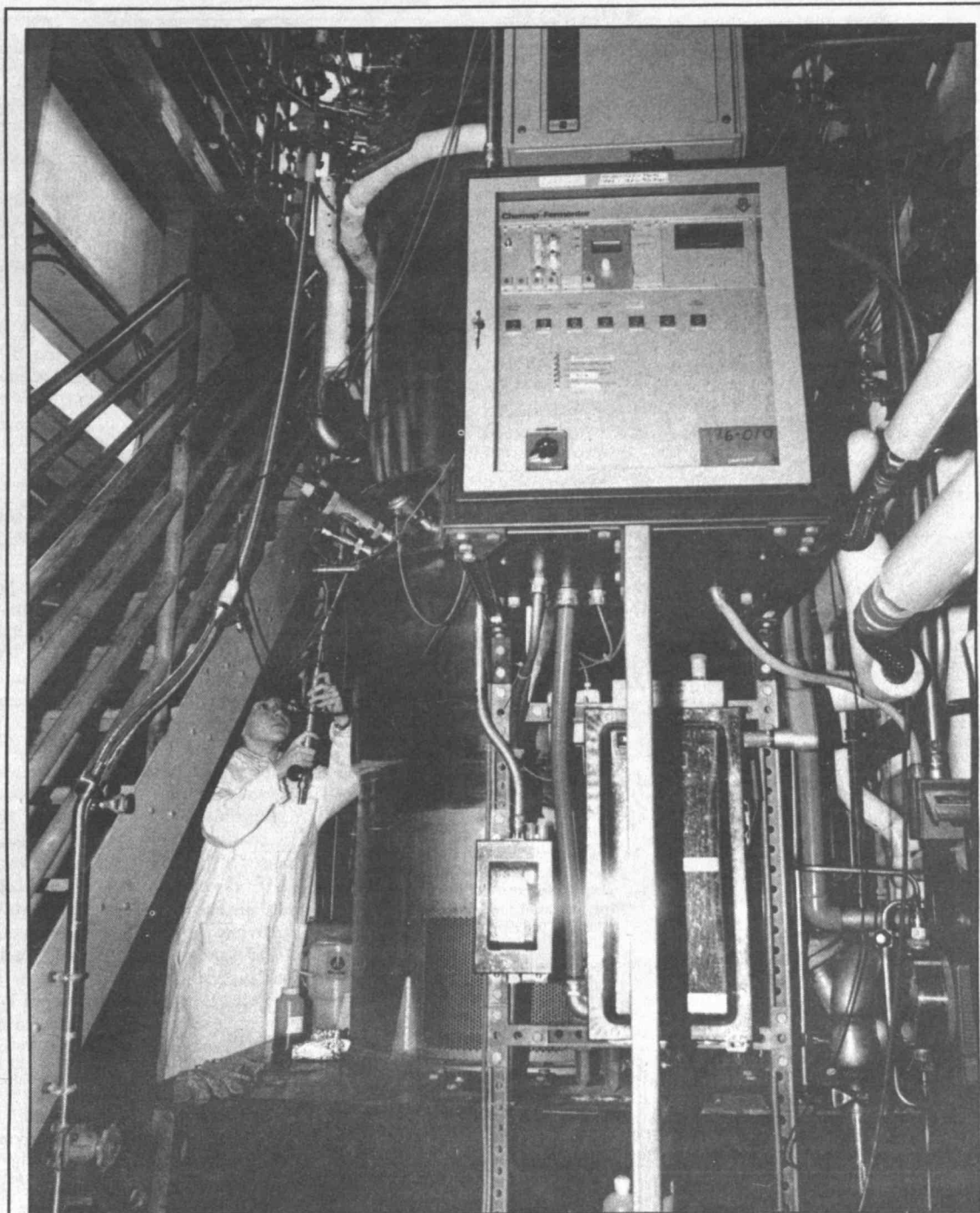
Since 1980, Professor Ziporyn has divided his time equally to new music, jazz, and Balinese music, attempting in his own work to bring all these traditions together in a meaningful synthesis. He has made several extended trips to Bali, Southeast Asia, and Africa, performing, teaching, and studying. In 1987 he received a Fulbright Fellowship for his studies in Balinese music. He completed his undergraduate work at Yale University and received his MA and PhD in music composition from the University of California at Berkeley.

Since coming to MIT in 1990, Professor Ziporyn has taught harmony, counterpoint, and world music. According to Philip S. Khoury, dean of Humanities and Social Science, "Evan Ziporyn will play a critical role as the Music and Theater Arts Section expands its curriculum to include music from non-Western traditions. He possesses the wonderful ability to blend a wide variety of musical traditions in his teaching, composition, and performance."

Nature, Nurture and All That

Dr. Charles R. Scriver, Professor of biology, human genetics, and pediatrics at McGill University in Canada, will speak on changing perspectives on child health, genetics, and the environment in a free public lecture sponsored by the Whitehead Institute for Biomedical Research on Wednesday, Nov. 4, at 6:30 p.m. in Rm 10-250.

Dr. Scriver will address issues such as how have public and child health changed the relative importance of genetic causes of disease and how current genetic research may impact human health in regards to both the length and the quality of life.



AIDS RESEARCH—Vivian de Zengotita, a junior in chemical engineering, takes a sample of bacterial cells from a machine that holds and gently mixes the growing cells (a fermentor). These particular cells produce a drug that could be used to treat an AIDS-related cancer. Ms. de Zengotita and other undergraduates are studying the bacteria and production of the drug through a course in the Department of Chemical Engineering that matches groups of undergraduates with projects suggested by local industries. This particular project was begun last fall, and was so successful that it was scaled up this semester to include a larger fermentor.

Photo by Donna Coveney

OVERLAP UPDATE

MIT Files Notice of Appeal

■ By Kenneth D. Campbell
News Office

MIT filed a formal notice of appeal Friday on the ruling that MIT's procedures in giving out \$26 million a year in private scholarships violated the Sherman Antitrust Act.

The notice of appeal, to the Third Circuit Court of Appeals in Philadelphia, said in its entirety: "Defendant Massachusetts Institute of Technology hereby appeals to the United States Court of Appeals for the Third Circuit from the final judgment entered by United States District Court for the Eastern District of Pennsylvania on September 2, 1992 and from all orders and rulings that produced or led to that judgment."

Oral arguments probably will occur sometime in the Spring, following MIT's submission of its brief in December or January, a court observer said. A deci-

sion by the three-judge panel is usually made within three months after the arguments in appeals court.

The lower court decision, by Federal District Court Chief Judge Louis Bechtle after a 10-day trial in Philadelphia, held that private scholarship gifts by a nonprofit university constituted commerce. He said it was a violation of the antitrust act for the colleges to agree to distribute their scholarship money solely on the basis of need as part of their policy of admitting students on the basis of merit regardless of their ability to pay.

The Ivy League colleges and MIT for more than 30 years had agreed to uniform principles for measuring need—essentially the same system adopted by the US Office of Education in the 1960s and later adapted by Congress, both of which require that most federal aid be awarded exclusively on the basis of need. In the case of applicants who had overlapping offers of admission from more than one of the colleges, the colleges agreed to discuss significant differences in their judgments of the individual students' financial need.

In the June 25-July 9 trial, MIT said that the Sherman act was never intended to apply to the kind of arrangements worked out by the colleges for the assigning of essentially charitable funds. In his summation on July 9, MIT's attorney, Thane D. Scott of Palmer & Dodge, said, "MIT's function is to teach, to discover and to build. It is to leave to the next generation a better and more knowledgeable world. Yet in the eyes of the Antitrust Division, such an institution is indistinguishable from a manufacturer of toaster ovens or porcelain fixtures."

He quoted US Supreme Court Chief Justice William Rehnquist in his dissent in the 1984 NCAA-Oklahoma football case: "No decision of the United States Supreme Court suggests that associations of nonprofit educational institutions must defend their self-regulatory restraints solely in terms of their competitive impact, without regard for the legitimate non-economic values they promote."

In presenting its case, MIT said that financial aid is a gift policy, not a pricing policy, and that tuition covers only half the cost of a student's education. Fifty-seven percent of students receive aid at MIT. In Fiscal 1991, undergraduate scholarships totalled \$26 million.

Polymer Gels Symposium Set

Polymer gels, regarded by many as one of the most promising new materials, will be the focus of a November 5 Industrial Liaison Program symposium, "Fundamentals and Technologies of Intelligent Gels."

The chairman of the symposium will be Professor Toyochi Tanaka of the Department of Physics, internationally recognized as a pioneering researcher in this field.

The symposium, which will begin at 9am in Rm 9-150, will cover the field from fundamental principles to device development. Members of the Institute community are welcome to attend on a seating-as-available basis.

MIT ON NSF:

'Serving the Nation In the 21st Century'

The following, entitled *The National Science Foundation: Serving the Nation in the 21st Century*, is the text of an MIT viewpoint for consideration by the Special Commission on the Future of the National Science Foundation.

THE MISSION OF NSF

The mission of the National Science Foundation should be to ensure the long-term health of US science and engineering as an essential prerequisite for a vibrant national future. A central objective must be to secure and wisely disburse support for basic science and engineering research and education in pursuit of this mission. Fulfilling this mission will provide the nation with both new knowledge and a cadre of educated individuals prepared, through their independent careers, to address fundamental, industrial and societal challenges through science and technology.

NSF's modest budget of under \$3B understates the importance of its role in the US R&D enterprise. It should be the agency with the broadest and longest view of science and technology in the national interest. Its first responsibility should be to see to the health of basic research, i.e., research that is inspired by intellectual opportunity and the quest for fundamental understanding, and not necessarily by predetermined practical objectives. This should be accomplished primarily by supporting research and graduate education. However, the environment, challenges and responsibilities of science and technology are changing, and this requires new mechanisms for accomplishing the Foundation's core objective and suggests new ramifications of its mission.

A TIME OF CHANGE

The changing challenges of the post-cold war era are well known and present an opportunity to reexamine the nation's science and technology system. It should be emphasized that it is the entire system of government, industrial and academic components that is in need of attention, and we believe that the NSF review should be conducted in this context. A few of the many reasons for reexamination and potential change are:

1. The boundaries between basic and applied research have blurred and often disappeared.
2. The scale, complexity and interdisciplinary nature of many of the most interesting and challenging areas of frontier research are inconsistent with the currently dominant modes of research organization and funding.
3. "Economic security" is overtaking military security as a primary rationale for federal support of research.
4. Congress and the public expect a strong return on their investment in R&D, with a primary measure being a clear, positive effect on the nation's ability to compete or lead in the world marketplace.
5. We must learn to more rapidly and effectively build commercial successes from basic advances in science and engineering research.
6. Industrial laboratories are changing, with strong declines in basic research as industrial R&D organizations move away from centralized, corporate laboratories to use of "cross-functional" teams including researchers to address near-term problems and product development.
7. Attitudes in the US, particularly the "not invented here syndrome," often limit the effective use by development engineers of basic research information.
8. No single organization, indeed no single country, can now be completely dominant or self-contained in technological areas of economic significance.
9. The traditional linear path of basic research, development and finally commercialization no longer exists.

10. Shorter product life cycles and rapid reverse engineering discourage industrial investment in basic research.

11. Existing relationships among major research partners (government, industry and universities) are often perceived to involve excessive bureaucratic obstacles and impose excessive financial leveraging requirements on universities.

RECOMMENDATIONS

First and foremost, NSF must meet its central objective of supporting education and basic research in science and engineering. Whatever changes lie ahead, the NSF must rededicate itself to supporting the best ideas and people, wherever they are found, rather than supporting only bureaucratically determined areas and activities. Investigator-initiated projects will remain at the core of scientific creativity and discovery in the future as in the past. The disciplines must remain strong, but must not be allowed to "define away" exciting and important new areas of inquiry and activity that do not fit the traditional mold.

Once this central objective is secured, we recommend that the following be implemented:

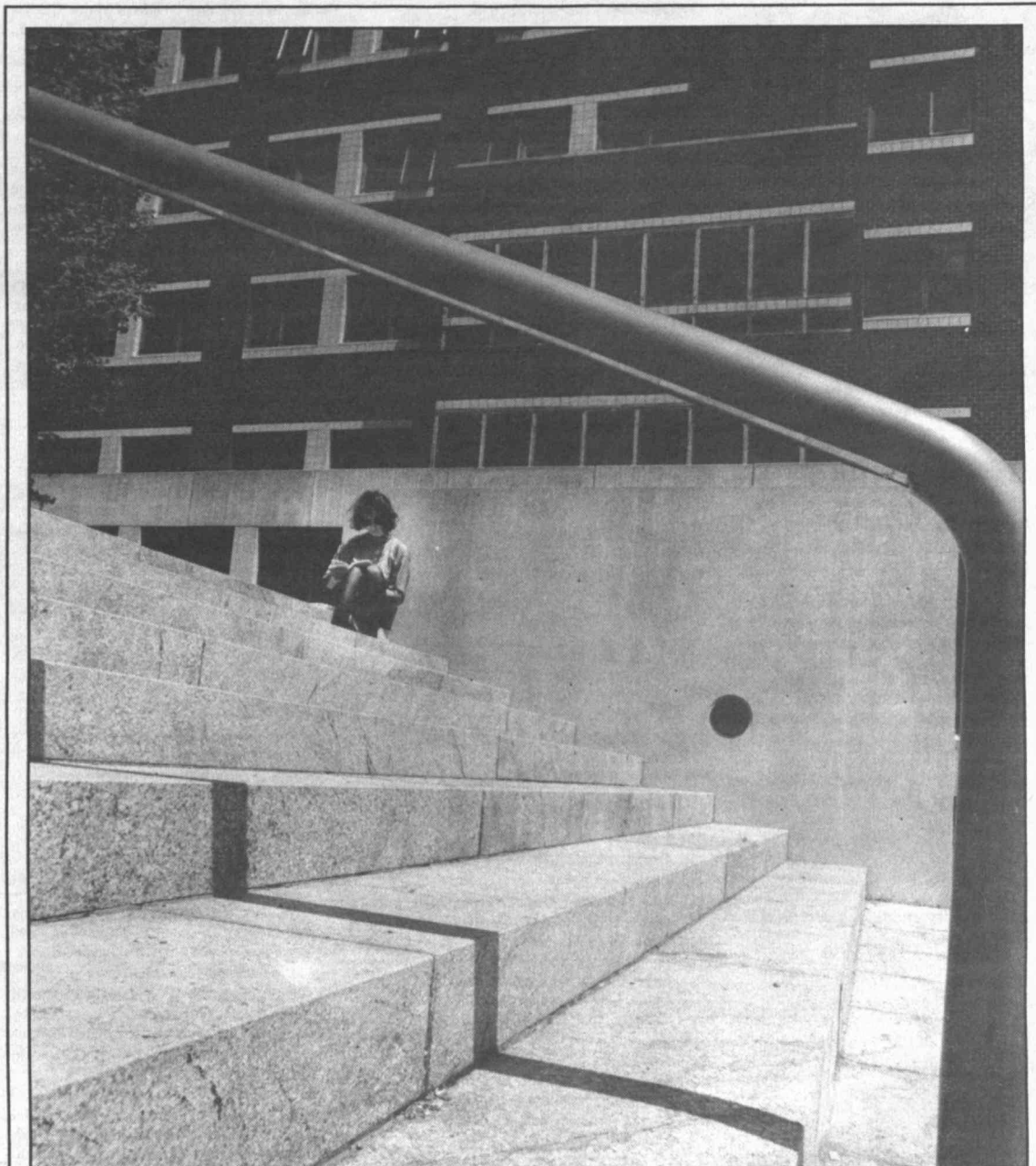
1. *NSF should develop better means to couple frontier research to technological development.* Developing the attitudes and aptitudes needed to translate new knowledge from research to practical ends should be a part of the education of scientists and engineers at all levels. NSF should encourage strong partnerships with industry, but studies must first elucidate difficulties in technology transfer and establish realistic expectations of the practical benefits stemming from basic research. It should be noted that it often takes many years for new scientific knowledge to become technologically and commercially important.

2. *NSF should create programs intended to fulfill industry's future personnel needs in science and engineering.* In designing such programs NSF should foster the development of partnerships between universities and industries, to bring about common understanding of industry's needs and the university's role in fulfilling them. Both research and education need to be emphasized in connection with making effective linkages between US universities and industry. (We note as a model the MIT Leaders for Manufacturing Program, a true partnership of academia and US industry to educate a new class of manufacturing engineers and managers.) It is also crucial to this endeavor that explicit programs to further the participation of women, minorities and the handicapped in science and engineering be continued and improved.

3. *NSF should organize to support programs with the parallelism and disciplinary diversity to address global-scale issues such as environmental change and telecommunications.* Such programs will develop and build appreciation for teamwork.

4. *NSF should establish ways of taking advantage of basic and applied knowledge generated elsewhere.* Conscious efforts to overcome the "not invented here syndrome" should be included.

5. *NSF should develop programs that support and encourage exchange of personnel between industry and academia to undertake cooperative research, both basic and applied.* The individuals involved need to be encouraged to develop genuine partnerships, and it is these people—not the NSF—who should select and drive the research areas. There may be merit in considering having industrial development personnel spend time on campuses, in addition to frontier industrial researchers. Such partnerships should serve the needs of both large corporations and small start-up companies. [A prototype endeavor might be the



ANGLES—Lorraine Wallace, an administrative secretary in the Medical Department, reads and munches on Chinese food amid midday sun and some great angles by the Medical Center. Photo by Donna Coveney

MIT Urges NSF to Take 'Longest View'

(continued from page 1)

level through the individual initiative of scientists in universities and industry, not through bureaucratic direction.

"The NSF must rededicate itself to supporting the best ideas and people, wherever they are found, rather than supporting only bureaucratically determined areas and activities." However, the statement said, the times do require some changes and new approaches.

The MIT report made these recommendations:

- NSF should develop better means

to couple frontier research to technological development.

- NSF should create programs intended to fulfill industry's future personnel needs in science and engineering.

- NSF should organize to support programs with the parallelism and disciplinary diversity to address global-scale issues such as environmental change and telecommunications.

- NSF should establish ways of taking advantage of basic and applied knowledge generated elsewhere.

- NSF should develop programs

that support and encourage exchange of personnel between industry and academia to undertake cooperative research, both basic and applied.

- NSF should continue support of education, primarily at the graduate level but also at the undergraduate and K-12 levels.

- While stating that transfer of technology is most effective through "the training of skilled and well-educated students," MIT also recommended the "highly effective approach" of the MIT Technology Licensing Office in assisting in founding about 40 new companies since 1987 and in making about 50 licensing agreements per year.

On a related point, the MIT paper said, "The individuals involved need to be encouraged to develop genuine partnerships, and it is these people—not the NSF—who should select and drive the research areas. There may be merit in considering having industrial development personnel spend time on campuses, in addition to frontier industrial researchers. Such partnerships should serve the needs of both large corporations and small start-up companies."

MIT said a prototype endeavor might be the DARPA-supported Consortium for Superconducting Electronics, which involves AT&T, IBM, and a small company, Conductus, in a cooperative effort with MIT (including Lincoln Laboratory), Boston University, Cornell and SUNY Stony Brook.

In an accompanying letter to Dr. Danforth, the MIT leaders thanked the Special Commission members for reviewing the mission of NSF "at this time of great transition and transformation in our nation and world."

They said, "We believe that MIT has demonstrated how pure science can be pursued synergistically with applied science and engineering in an environment that fosters very close ties to industry. We have also been quite successful in interweaving education and research at all levels. It is our hope that our experiences as well as our suggestions for change will be helpful to the Commission."

DARPA-supported Consortium for Superconducting Electronics involving AT&T, IBM, and a small company, Conductus, in a cooperative effort with MIT (including Lincoln Laboratory), Boston University, Cornell and SUNY Stony Brook.]

EDUCATION

We encourage continuing support of education by the NSF. Its primary role should be in graduate education through fellowships and research support, but it should also aggressively continue its efforts to enhance engineering and science education at the undergraduate level across the broad spectrum of colleges and universities. It should also play a substantial role of coordination and leadership in bringing about systemic change in science and mathematics education at the K-12 level.

TECHNOLOGY TRANSFER

The current environment will rightly encourage the NSF to explicitly consider ways to optimize technology transfer from universities to industry. We believe that the most effective mechanism for transfer of technology is the training of skilled and well-educated students. But there are additional ways of turning discovery into benefits to society, e.g. the development of new companies. Having observed many universities try to do this through the establishment of complicated centers,

institutes and initiatives, MIT respectfully suggests that much is to be learned from the simpler and highly effective approach at MIT. The MIT Technology Licensing Office is currently making about 50 licensing agreements per year, has 350 active licenses, has assisted in the founding of about 40 new companies since 1987, and continues to assist the start-up of 6-10 new companies per year. A high density of high quality science and engineering research, long term support, and support in amounts consistent with the quality and promise of the research are all critical elements of success in this endeavor. We would be pleased to share our experience in detail with the Commission, the NSB or the NSF.

CLOSING COMMENT

We are pleased that the National Science Foundation's mission for the future is being explored explicitly and carefully. Change is needed. But there is a possible vision of a future that must not be allowed to become reality: We must not find a new commission convened 10 or 20 years from now because our nation has learned to reduce product development cycles and manufacture high-quality products through continuous improvement, but is panicked because we have lost our edge in creativity and find that all the new ideas that are driving a knowledge-intensive world are generated elsewhere.

The Arts

November at MIT

5 Thurs

Georgia on My Mind
Music of the World Concert by Kartuli Ensemble, a capella men's chorus (below) performing music from the Republic of Georgia. 12noon, MIT Chapel.



5-7 Thurs/Sat

Ruddigore
Sir Roderick Murgatroyd fights ghosts and a family curse in the MIT Gilbert and Sullivan Players melodrama (below). 8pm; 2pm matinee Nov 7. Student Center Sala de Puerto Rico. Tickets: \$9, \$8 MIT Community, \$7 outside students/seniors, \$5 MIT/Wellesley students. Information/reservations: 395-8708



Student-Written One Acts
MIT Dramashop Student Written One-Act Plays. *Dating: A Monologue* by Jonathan Amsterdam (G), directed by Sue Downing; *God Have Mercy Upon Us* by Joseph E. Bondaryk, directed by Jonathan Amsterdam (G); *Confrontational Worship* by Larry Taylor '92, directed by Adam Lindsay '94. Refreshments and open discussion with the authors, performers, and directors follows the performance. 8pm, Kresge Little Theater. 253-2908

6 Fri

Los Munequitos de Matanzas
The 12-member Cuban percussion, vocal and dance group makes its Boston debut with *Patakin*, featuring sacred music and dance from the Yoruba tradition ("Santeria") as well as popular Afro-Cuban rhythms and dances. Collaborative presentation by Inquilinos Boricuas en Acción, WGBH (La Plaza), Tufts University, and the MIT Office of the Arts. Tickets: \$10, \$8 students/seniors available at the MIT Museum Shop in the Student Center, or at the door the night of the performance. 8:30pm, Kresge Auditorium. 262-1342 or 253-4003

8 Sun

Dance Motifs of Sephardic Jews
Workshop led by Judith Brin Ingber, dancer/choreographer, "Voices of Sepharad." Participatory work with live music. 12:15pm, Varsity Club Lounge, DuPont Athletic Center. 253-FOLK

Voices of Sepharad
Music and dance performance (below) exploring the Jewish cultural tradition which originated in medieval Spain. 3:30pm, Kresge Auditorium. Admission: \$5, \$2/ students, seniors and children, free with MIT ID. 253-2982



12 Thurs

Music of the World Lecture
"Discovering the Structure of African Polyphony and Poly-rhythm." Lecture by ethnomusicologist and African music scholar Simha Arom, director of research, Centre Nationale de la Recherche Scientifique in Paris, and expert on traditional music of central African Pygmy tribes. 11am, Killian Hall (14W-111).

African Drum Ensemble
Music of the World Concert - Agbekor Drum and Dance Society, David Locke, director. 12noon, MIT Chapel.

"My Work and How I Do It."
Lecture presented by David McCullough (below), author of five works of history and biography. Mr. McCullough is also known as the host of the PBS series "The American Experience," and as the narrator of the documentaries "The Civil War" and "LBJ." 4pm, Rm 26-100. 253-7894



John Ash Reads Poetry
Poetry at MIT series. Born in Manchester, England and now living in New York City, John Ash is the author of five collections of poetry and is currently working on his first full-length prose book, about his travels in Turkey. 7:30pm, Bartos Theater. 253-7894

12-15 Thurs/Sun

Romeo and Juliet
Shakespeare Ensemble at MIT production, directed by Jayme Koszyn. \$6, \$5 students/seniors. 8pm, Kresge Little Theater. 253-2903

13 Fri

TRME Premiere Orchestra
Tech Random Music Ensemble, David Alt '93, conductor. Music written for orchestra and chamber ensembles including works by

Marek Zebrowski, David Alt, Alan Pierson '96, Boston area composers John Johnson, Paul McClellan, Elliott McKinley and others. Suggested donation \$2. 8pm, Killian Hall. Information or reservations, call David Alt, 437-1043.

13-15 Fri/Sun

The Baker's Wife
MIT Musical Theatre Guild production of the musical by Stephen Schwartz. 8pm, Student Center Sala de Puerto Rico. Tickets: \$8, \$7 students/seniors/MIT community, \$5 MIT/Wellesley students. Information/reservations: 253-6294

14-15 Sat/Sun

Dances of Macedonia
Workshops taught by Pece Atanasovski - Nov 14-15, 2pm; Kulture Korner - Nov 14, 7pm; Party - Nov 15, 8pm; Student Center Rm 491. Suggested donation: \$1 MIT and Wellesley College affiliation, \$5 others; good food for the party. 253-FOLK

"The Beauty Road"
A Dance of Community: an evening of dance and music with the Deborah Abel Dance Company with guest artists singer/songwriter Carla Sciaky, visual artist Pamela Shanley, and composer/musician Lee Perlman. \$12, \$9 students with ID, MIT staff and faculty, children under 12; \$5 MIT students with ID. Nov 14-8pm, Nov 15-3pm, Kresge Auditorium. 576-1973

16 Mon

Japanese Film
Himatsuri ("Fire Festival"). Mitsuo Yanagimachi directed this 1984 film. Finale in a series of three films dealing with resistance to change. Admission: \$3. 7:30pm, Rm 10-250. 253-2839

17 Tues

Architecture Lecture
"Hygiene and Domestic Order: Toward a History of the Italian House in the Twentieth Century," by Maristella Casciato, University of Rome. 6:30pm, Rm 10-250. 253-4411

18 Weds

Chants in Lobby 13
MIT Chamber Chorus, John Oliver, director. A capella concert of Gregorian Chant and music of Poulenc and Byrd. 5:15pm, Lobby 13.

Affiliated Artist Recital
Charles Shadle, piano, and Margaret O'Keefe, soprano. Sacred and Profane Songs by Purcell/Britten, Georges Auric, Beethoven, Ives, Paul Bowles, Persichetti, Charles Shadle, Barber, and Virgil Thompson. 8pm, Killian Hall.

19 Thurs

El Arte Flamenco
Glorianne Collver-Jacobson and Roberto Rios, guitar, with Gladys Isabella Rios Foreman, Flamenco dancer (below). 12noon, MIT Chapel.



What Should It Be?
Open Meeting with artist Mags Harries to discuss the Student Center 1% for Art Project. 5:30-7:30pm, Student Center Mezzanine Lounge. 253-4004

MIT Affiliated Artist Concert
Eleanor Perrone, piano (below). Beethoven Sonatas Op. 27, No. 1 & 2; Chopin, Two Preludes from Op. 28, Scherzo in C# minor, Op. 39; Brahms' Variations and Fugue on a Theme by Handel, Op. 24. 8pm, Killian Hall.



19-21 Thurs/Sat

"Wherefore Art Thou Romeo?"
Romeo and Juliet continues; see 12-14 Thurs/Sat above.

The Dough Also Rises
The Baker's Wife (below) continues; see 13-15 Fri/Sun above.



The Rhinoceros
MIT's Midnight Players present the Eugene Ionesco play. 12midnight, Rm 6-120. Donations accepted; proceeds to AIDS Research Fund. 494-8300

20 Fri

Jazz Bands Concert
MIT Festival Jazz Ensemble and the MIT Concert Jazz Band. A celebration of the FJE second CD release, "Go On." \$1 at the door. 8:15pm, Kresge Auditorium.

Peter Child World Premiere
The Boston Musica Viva presents the world premiere of *Tableaux II* by MIT Associate Professor Peter Child. 8pm, Pickman Hall, Longy School of Music, 27 Garden Street, Cambridge. \$12, \$6 students/seniors. 353-0556

21 Sat

MIT Concert Band
John Corley, director. Works of Mendelssohn, Holst, Tull, Nelson, and others. 8pm, Kresge Auditorium.

22 Sun

List Closings
Michiko Kon. Surrealistic black and white photographs which hover between the grotesque and the poetic.

This Just In...Recent Additions to the Collection. Paintings, prints, and drawings added to MIT's publicly-sited permanent collection over the past five years.

aleph. Site-specific installation by Ann Hamilton, featuring a 90' wall of books stacked floor to ceiling.

List Visual Arts Center Hours: Weekdays 12-6, weekends 1-5. Closed holidays. 253-4680

22-24 Sun/Tues

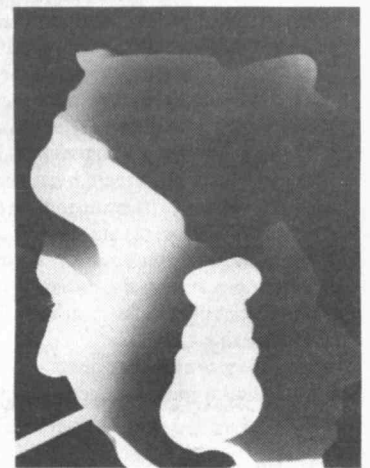
Twelfth Night
Theater Arts Student Workshop production of Shakespeare classic, directed by Michael Ouellette, lecturer in Theater Arts. 8pm, Kresge Rehearsal Rm B. 253-5623

23-24 Mon/Tues

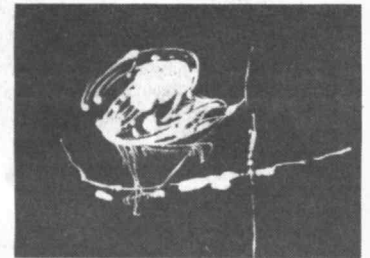
El Festival de Monologos
Theater production in Spanish consisting of monologues by Puerto Rican authors, ranging from comedy to tragedy, all reflecting contemporary social issues of Puerto Rico and other Hispanic countries. 8pm, Kresge Little Theater. 225-7553

All Month

MIT Museum
Photograms: 1918 to the Present. The development and use of the photogram (below), heralded by the Dadaists as being anti-photography and anti-paintings, and hailed by others as "the interweaving of art and technology."



Works by Juliet Kepes. Works of painter, sculptor, and graphic artist, Juliet Kepes (below).



Ongoing Exhibits: *Crazy After Calculus: Humor at MIT*; *Doc Edgerton: Stopping Time*; *Holography: Types and Applications*; *Light Sculptures* by Bill Parker; *Math in 3D: Geometric Sculptures* by Morton G. Bradley, Jr.; *MathSpace*.

MIT Museum, 265 Mass Ave. Hours: Tues-Fri 9-5, Sat-Sun 1-5. Requested donation: \$2. 253-4444

Compton Gallery
The Hurt Dance. Photographs of endurance athletes by Peter Moriarty. Off Lobby 10. Weekdays 9-5. 253-4444

Strobe Alley
Edgerton/Mili Photography Contest Prize Winners. 4th floor of Bldg 4. 253-4444

Hart Nautical Gallery
A Thousand Years of Voyages of Discovery - Exploring the Ocean from Surface to Seabed; Boston Fisheries 1900-1920. 55 Mass Ave. Weekdays 9-8. 253-5942

All events are free unless prices are noted. All concerts: 253-9800 unless otherwise noted. MIT Arts Hotline: 253-ARTS. Month-at-a-Glance is produced by the MIT Office of the Arts (253-4003) and ARTSNET. Celia Metcalf, design; Liz Ferry, production.

Awards & Honors

■ **Dr. Stanley Backer**, professor of mechanical engineering, emeritus, and senior lecturer, has been named the first winner of a prestigious new award, the Carothers Medal, given by The Textile Institute.

Established this year with the help of funding from Du Pont de Nemours Inc., the medal honors the memory of Wallace H. Carothers, who discovered nylon while working for the company in 1937. The discovery is said to have laid the scientific foundations for the many synthetic polymer fibers of today.

The medal will be conferred from time to time in recognition of creativity in the production or use of fibers.

The Textile Institute said that Dr. Backer, through research, teaching and nearly 40 years as a consultant for Du Pont, "has contributed greatly to the utilization of such synthetic fibers in textile materials." It added: "His career emphasizes the need to understand not only the fibers themselves, but also the fiber assemblies bought and used by the consumers."

"Starting from the engineer's viewpoint with a special emphasis on performance characteristics, his important research includes seminal work on false twist texturing, on the mechanics of yarns and fabrics, on the structure and durability of marine ropes and on the utilization of synthetic fibers in the reinforcement of concrete.

"He was also instrumental in the formulation and production of the Thesaurus of Textile Terms in eight European languages and Japanese."

Dr. Backer, who received three degrees from MIT, began his career in textile research with the US Quartermaster Corps before joining the MIT faculty.

He has been a member since 1947 of The Textile Institute, which has its international headquarters in England, and this year was elected to the National Academy of Engineering.

■ **Dr. Robert C. Armstrong**, professor of chemical engineering and executive officer of the department, is the recipient of the Professional Progress Award for Outstanding Progress in Chemical Engineering given by the American Institute of Chemical Engineers.

The \$4,000 award is given to a member who has not yet reached his or her 45th birthday and who has made a "significant contribution to the science of chemical engineering."

The Institute cited Dr. Armstrong's accomplishments as an educator and researcher in polymer fluid mechanics, numerical simulation of viscoelastic flows, transport phenomena, and applied mathematics.

The citation said that Dr. Armstrong "was responsible for the first systematic mapping of a flow transition diagram for complex flow of a polymeric liquid and the first

accurate numerical method for computing the complex flow of polymer liquids."

Dr. Armstrong is the author of a two-volume book, *Dynamics of Polymeric Liquids*, which was named a Citation Classic in 1988.

■ The 1992 recipient of the Turing Award, the most prestigious technical award given by the Association for Computing Machinery, is **Dr. Butler W. Lampson**, adjunct professor of computer science and engineering.

The award is given annually to an individual selected for contributions of a technical nature made to the computing community that are of lasting and major importance to the computer field. Previous MIT winners were Professors Marvin L. Minsky in 1969 and Fernando J. Corbató in 1990.

The award is named after Alan M. Turing, a British mathematician and pioneer in computing who made pivotal contributions in cryptography in World War II.

Dr. Lampson, a world leader in computer systems, has contributed to many major developments during the past two decades. He is a member of the National Academy of Engineering.

■ **Dr. Scott C. Virgil**, assistant professor of chemistry, has been awarded a five-year fellowship worth \$500,000 by the David and Lucile Packard Foundation of Los Altos, CA.

Professor Virgil, whose field is organic synthesis, was among 20 of the nation's "most promising" science and engineering researchers awarded the 1992 fellowships.

The fellowships—each provides young faculty members with \$100,000 per year to support their research—represent the nation's largest non-governmental program of unrestricted grants to young university faculty in science and engineering.

Through the program, the foundation is supporting the work of 100 science and engineering faculty members with annual payments of \$10 million.

"Many of the most important technological contributions of this century have come from university faculty members who began their research early in their careers and have worked in their areas of interest over a long period of time," said David Packard, president of the foundation and cofounder and chairman of the Hewlett-Packard Company. "We want to nurture this kind of research."

■ The University of Salamanca in Spain has honored **Dr. Bertram Kostant**, professor of mathematics, with the title Doctor Honoris Causa in recognition of his achievements in mathematics. It was conferred at a ceremony in Madrid, Spain.

60-70 PARTICIPANTS

Halloween Hack Transforms Lobby

(The following description of the elaborate Halloween hack in Lobby 7 was supplied by a representative of "The Devotees of Our Lady of the All Night Tool," as the hackers prefer to refer to themselves.)

I can give you some information about the hack. My only request is that no real names be published. Part of our hacking ethic is that these things are done for the enjoyment of everyone—not to stroke individual egos. Besides it is that much the better to be able to pull something off and leave people wondering who did it (unfortunately, with 60-70 people involved, it's a bit harder to keep under one's hat).

The idea, which surfaced in April or May in a brain-storming session, grew out of two things: (1) ORK (The Order of Random Knights—a hacking group based in Random Hall) had done a "performance hack" during finals one year in which members wandered down the hall in monks' robes carrying course catalogs and handing out flyers for "Our Lady of the All Night Tool" along the way, and (2) the observation that Lobby 7 was very cathedral-like.

Around June, the "Archbishop of Tooling" (to be known as Father Tool for short) became quite inspired by the idea and decided that it would really go over well if everything could be brought together at once. Each little piece was nice, but many hacks have been lost because people just wandered by during their busy day and failed to take note. One theme here was to transform the lobby sufficiently so that no one could help but notice that something was amiss. Once you get someone to stop and look around to see what's abnormal, then he/she will get a chance to take in what is really taking place. So, the faithful tools decided to bring together a very strong transformation.

Owing to the scope of things, Father Tool appointed several ministers each to be in charge of a separate portion of the hack. The idea was to divide the task into manageable portions and allow each sub-group the freedom to do their part very well. A "Heavens Crew" was responsible for the skylight, a "Stained-Glass Crew" was responsible for the 77 Mass Ave. windows, an "Organ Crew" was responsible for the construction of the organ, an "Electronics Crew" was responsible for the audio and working computer (Father Eliza), a "Media Crew" was responsible for the actual music and signs, and a "Grounds Crew" was responsible for the ground floor artifacts (gilded computers, pews, altar, relics, etc.). Alas, as a matter of practical application it was necessary to omit some of the original ideas (e.g., adding a Michaelangelo-style painted false ceiling, for example).



THE SOUND OF MUSIC—Luis Uribarri, a sophomore in mechanical engineering, plays an "organ" (a mocked-up computer) that was part of the Halloween Hack. It was located on the second-floor balcony over Lobby 7. [One of the stained-glass windows from the hack can be seen ahead of Uribarri.] Photo by Donna Coveney

Each of the handful of ministers then proceeded to prepare his or her contribution to the hack. The ministers and Father Tool coordinated on interactions and high-level issues while all the details were arranged within each ministry. It is impossible to quantify exactly how many hours sub-groups spent preparing their portions. Most of the groups had about a dozen people at various stages of preparation. Earnest construction and detailed planning started just after Rush week. On average, groups probably met for major work sessions once every other week between Rush and deployment.

Thursday night (Friday morning) the faithful tools (numbering in excess of 60 by this time) met at midnight. Father Tool gave a brief sermon concluding with a prayer for a successful evening. Many workers suited up in monks' robes for deployment. The tools

waited for the Physical Plant staff to vacate Lobby Seven before beginning deployment. Once initiated, the bulk of the installation occurred within half an hour. Father Tool then offered a prayer giving thanks to the successful construction and blessing the Cathedral and its constructors. Monks and faithful tools hung around and added finishing touches for another half hour before calling everything complete.

I'm sure you've seen most/all of the hack. A few subtle things to point out in case you missed them:

The donut stand's coffee pot was labeled "Holy Water," the plaque of William Barton Rogers was labeled "Saint Rogers" and had a spotlight shining upon him, the keyboards on the organ said several things, the skylight shines much more brightly than normal and a wedding was performed in the Cathedral Saturday morning.

Productivity Is Focus of Initiative

(continued from page 1)
gram at MIT that would relate to the IT industry in much the way the Leaders for Manufacturing Program relates to the manufacturing industry. Just as LFM sponsoring organizations benefit from their association with the program, PROFIT sponsors will attend seminars and symposia, serve as study or test sites for research activities, use knowledge gained from the program, and have access to material developed by the research teams. Ultimately PROFIT expects to involve about 10 sponsors drawn from a wide range of industries, including finance, transportation, manufacturing, and telecommunications.

According to Dr. Gupta, four themes are driving PROFIT to make data the truly valuable corporate resource it has long promised to be. Research teams will work to integrate disparate information systems, to lift information automatically from paper, to measure IT productivity, and to redesign business processes so that they derive more benefit from their computer-generated in-

formation processing than they are presently doing.

"In spite of all the technological advances that have occurred during this century," Gupta says, "white collar workers still spend a large amount of their time retrieving information from various sources in order to perform their jobs. Some information resides on computers of different makes and types, some exists on paper and other traditional media, and some must be accessed through personal interactions. The overhead involved in managing and integrating these relevant pieces of information is a major barrier to enhancing productivity."

"Previous research at MIT shows that the likelihood of success in using technology to increase productivity is a function of several technical and non-technical factors," Professor Madnick added. "The three essential prerequisites are a careful determination of strategic applications, an intelligent selection of technologies and an ability to incorporate appropriate changes in the organizational structure. The PROFIT

program will define new business processes required for gaining productivity from information and key technologies for the support of these business processes, making data a truly valuable corporate resource."

In addition to co-directors Madnick and Gupta, PROFIT has an Advisory Committee consisting of Professors William Pounds, Arnoldo Hax, Michael Scott Morton, Thomas Allen, and Gabriel Bitran. The associate director is Michael Siegel. One of PROFIT's first activities will be to work with Bull and MIT to host Enterprise '93, a forum on current business issues and IT as a strategic business tool that will take place June 16-18 at the World Trade Center in Boston.

It's a Fact

In 1887 Thomas A. Edison gave MIT a dynamo and 150 lamps to be used in teaching electrical engineering. The dynamo still exists at the MIT Museum.

(continued from page 6)

■ SOCIAL ACTIVITIES

MIT Singles over 35**—Group meets in the Faculty Club Lobby lounge 5:30-7pm every Friday evening. For more information call Mary Anne x3-3293 or Charlotte x3-4738.

Chinese Lunch Table. Meets Fridays 12-2pm, Walker Dining Room. Bring your own lunch and come meet some Chinese friends at MIT. All Chinese-speaking people are welcome. Organized by CSSA (Chinese Students and Scholars Association).

Chinese Lunch Table. Meets every Monday and Wednesday, 11am-1pm, Student Center, Private Dining Room #1. Bring your lunch and come practice your Chinese speaking. All levels welcome. Sponsored by the Chinese Students Club.

Japanese Lunch Table. Meets Tuesdays at 1pm in Rm 407 and 491 in the Student Center. Bring a lunch and talk with native Japanese speakers. All Japanese speakers,

especially beginners, are welcome. Call x3-2839.

La Table Francophone. Meets Tuesdays at 1pm in Walker Memorial Dining Room.

■ MOVIES

Admission to below Lecture Series Committee Movies is \$1.50, and MIT or Wellesley identification is required. For the latest Lecture Series Committee movie and lecture information, call the LSC Movieline, x8-8881.

Nov. 6: Delicatessen, 7 & 10pm, Rm 26-100; High Noon, 7:30pm, Rm 10-250. Nov. 7: Alien 3 [R], 7 & 10pm, Rm 26-100. Nov. 8: Lethal Weapon [R], 7 & 10pm, Rm 26-100. Nov. 13: Far and Away [PG13], 7 & 10:30pm, Rm 26-100; The Court Jester, 7:30pm, Rm 10-250. Nov. 14: Lethal Weapon 2 [R], 7 & 10pm, Rm 26-100. Nov. 15: Brain Donors [PG], 7 & 10pm, Rm 26-100.

Send notices for Thursday, November 12, through Sunday, November 22, 1992 to Calendar Editor Rm 5-111, before 12 noon Friday, November 6.

FINAL REPORT

PRESIDENTIAL TASK FORCE ON CAREER DEVELOPMENT OF MINORITY ADMINISTRATORS AT MIT

Executive Summary

This executive summary outlines the salient points contained in the final report of the Presidential Task Force on Career Development of Minority Administrators at MIT. Its purpose is to provide a brief overview of the key issues resulting from an analysis of various data compiled for the study. The report provides a set of recommendations which are based on the findings.

Overview

This report analyzes and summarizes the results of a six month study conducted by the Presidential Task Force on Career Development of Minority Administrators at MIT. The Task Force was charged by President Charles M. Vest to identify and present a set of recommendations on ways MIT could provide maximum opportunity and support for professional development and career advancement of the minority members of its administrative staff.

The study included interviews with sixteen (16) members of the senior administration; the dissemination of a written survey to one hundred and eight (108) Underrepresented Minority administrators; a series of focus group sessions, facilitated by external consultants, to explore the perceptions of Underrepresented Minority administrators and others regarding professional development and the quality of professional life at the Institute; and an analysis of Equal Employment Opportunity and other employment statistics in order to assess the effectiveness of equal opportunity initiatives for administrators at MIT over the past ten years.

Major Findings

Two major images developed as a result of the analysis of all data compiled as to the nature of Underrepresented Minority administrator career development at MIT: 1) Underrepresented Minority administrators have not been recruited or promoted into higher management levels at a rate consistent with the Institute's Affirmative Action/Equal Employment Opportunity goals; and 2) most Underrepresented Minority administrators, though concerned about their professional development, career advancement, and quality of professional life at the Institute, remain committed to extraordinary performance and to contributions to improve the quality of professional life for all members of the administrative staff.

The study identified three major interrelated areas of concern as expressed by Underrepresented Minority administrators or as seen by an analysis of the statistical data:

1. Recruitment and Retention

Over the ten year period between 1982 and 1991, Underrepresented Minority administrators experienced only a two percent net gain in representation on the administrative staff. During that decade, 8 percent of all new administrative staff hires were from Underrepresented Minority groups. Over that same period, 6 percent of all administrative staff terminations were Underrepresented Minorities. In

addition, Underrepresented Minority administrators seemingly lost significant ground with the termination of the only Underrepresented Minority senior officer on the Academic Council.

2. Recognition and Reward

One consistent theme presented in the survey and focus group session analyses was the perception among many Underrepresented Minority administrators that their contributions and extraordinary job performance often went unrecognized and unrewarded in the system. Many Underrepresented Minority administrators attributed this lack of recognition and reward to the application of stereotypical images by their immediate supervisors.

Among the most convincing indication of the lack of recognition and reward is the disparity in salary levels of most Underrepresented Minority administrators. Based on an analysis of Equal Employment Opportunity data and survey responses, the salaries of Underrepresented Minority administrators seem to fall in the lower salary ranges of the administrative ranks in which they are represented.

3. Professional Mobility

Study findings suggest that, as was the case in a 1981 study, even though the aggregate numbers of Underrepresented Minority administrators have increased over the past ten years, Affirmative Action/Equal Employment Opportunity goals have not been achieved. This lack of achievement is particularly dramatic as it relates to upward mobility and promotion for Underrepresented Minority administrators. The lack of professional development mechanisms, coupled with inconsistent annual performance evaluations, appears to be directly related to the lack of professional mobility for Underrepresented Minority administrators. In the end, there has been some gain with regard to the representation of Underrepresented Minority administrators in the lower and middle level management ranks in terms of new hires or transfers, but there has not been significant upward mobility to senior or upper management ranks.

Recommendations

The Task Force submitted a set of nine recommendations from their analysis of the study findings:

1. The President should issue a policy statement reaffirming the Institute's commitment to Affirmative Action/Equal Employment Opportunity through diversifying the Institute's work force.
- 2.A senior-ranking Underrepresented Minority administrator should be appointed to a vice presidential position on the Academic Council with line and budgetary responsibilities that might include, but should go beyond, minority-related issues.
3. The Affirmative Action/Equal Employment Opportunity responsibilities should be reorganized to create a department that would report directly to the President. Under this reorganization, the Af-

firmative Action/Equal Employment Opportunity Department should assume a more pro-active role within the Institute and be provided with the financial resources to carry out its official mandate as established by the President.

4. The MIT Equal Opportunity Committee should be restructured to become a Presidential Oversight Committee with a mandate to conduct, on a yearly basis, a critical review of the progress of diversity throughout the Institute and report to the Academic Council and community on the hiring, promotion, and retention of Underrepresented Minorities.

5. The number of Underrepresented Minorities on the Administrative Council should be increased through in-house promotion and recruitment.

6. The number of Underrepresented Minorities in the ranks of Administrative Officers in Academic Departments, Laboratories, and Centers should be increased.

- 7.A structured, but voluntary, Institute-wide Mentoring Program should be developed and implemented.

8. The Institute should, under the auspices of the Personnel Office:

- Sponsor a comprehensive Management Training Program for all management personnel.

- Establish a Career Development Center.

- Develop a more comprehensive Orientation Program for all new employees.

- Re-institute exit interviews in conjunction with the Affirmative Action/Equal Employment Opportunity Department.

9. By the year 2000,* the number of Underrepresented Minorities in the work force of the Institute, at all levels, should reflect the regional and national labor pools.

*The entering work force is projected to be 33% minorities by the year 2000. Information gathered from Opportunity 2000 prepared by the Hudson Institute for Employment Standards Administration, U.S. Department of Labor.

1.0 Introduction

In September 1991, The Presidential Task Force on Career Development of Minority Administrators was charged by the President to identify and present a set of recommendations on how M.I.T. could "provide maximum opportunity and support for professional development and career advancement of the minority members of its administrative staff". To accomplish this charge, the Task Force engaged in a six month study to identify the perceptions and realities of career

development opportunities for Underrepresented American Minority administrators* at the Institute.

The study included interviews with sixteen (16) members of the senior administration; the dissemination of a written survey to one hundred and eight (108) Underrepresented Minority administrators; a series of focus group sessions, facilitated by an external consultant team from International Management and Research Associates, Inc. and Jane C. Edmonds & Associates, Inc., designed to explore the perceptions of Underrepresented Minority administrators and other Underrepresented Minority personnel regarding professional development and the quality of professional life at the Institute; and, an analysis of Equal Employment Opportunity statistics and other employment statistics in order to assess the effectiveness of equal opportunity initiatives for administrators at MIT over the past ten years.

This final report presents a summary of the findings of the Task Force and its recommendations which are based on analysis of the compiled data. The appendices include a compilation of statistical data and the final report of focus group sessions and minority administrator survey analyses prepared by the consultant team engaged by the Task Force.

* For the purposes of this study, Underrepresented Minority is defined as African American, Puerto Rican, Mexican American, and Native American Indian.

2.0 Background and Context

In 1981, an Equal Opportunity Committee, chaired by Professor Michael S. Feld, conducted a study to "evaluate the extent of growth and turnover in the administrative staff at each management level, to compare the status of three employee groups (i.e., white male, white female, and minority administrators), to compare the status of the three employee groups, and to assess the effectiveness of our equal opportunity efforts over the past five years". Each administrative group was studied separately and compared at all management levels utilizing statistics and information compiled by the Personnel Office.

The study concluded that the presence of minority administrators on campus had increased at a rate considerably below that of their white male counterparts over a five year period. While minority administrators comprised 5 percent of the administrative staff in 1981 and some gains in mobility in lower and mid-level management could be identified on the whole, the numbers were too small to be significant and stated hiring goals for minority administrators had not been met.

The situation at MIT regarding the low representation of minority administrators was not unique. Early in the decade of the 1980's, many institutions were faced with the reality that minority faculty and administrative representation had not increased in proportion to either minority student enrollments or demographic trends. Often,

the focus was placed on increasing the number and representation of minority faculty in academic institutions. As the numbers of minority students enrolled in predominantly white institutions increased, the need for minority role models in the classroom seemed apparent.

Within this context, less attention was paid to the role and status of minority administrators on these same campuses. Minority administrators have a critical role to play in the success and retention of minority students on predominantly white campuses. Although the pool of minority educators interested in administrative career paths was sufficient and highly competent, the numbers and professional mobility for minority administrators has not increased appreciably. In cases where increase can be identified, the rate of retention and professional mobility for minority educators has remained low relative to their white counterparts in academia. Joseph Silver, Assistant Vice Chancellor for Academic Affairs, Board of Regents, University System of Georgia, has noted the following: "Real change in American society (regarding affirmative action) has been slow." Continuing, he goes on to say, "However, changes in the academy, especially as it relates to hiring patterns, have been extremely slow." He concludes that in order for real change to occur, "the attitudes of those who control the academy must change and the environment in which the academy operates must change". (Black Issues in Higher Education:1992:84)

In response to these trends, the Association of Black Administrators at MIT planned and coordinated two major national conferences in 1982 and 1984 to explore the issues facing minority administrators on predominantly white campuses. During these conferences, noted national scholars addressed over nine hundred conference participants on issues of recruitment and retention; professional mobility; stress; gender; leadership and competency; and strategies for success.

In closing remarks at the 1984 conference, Paul E. Gray, then President of MIT, observed "a retreat from the principles of affirmative action and equal opportunity" in Washington. He concluded that to despair or to focus energy on changing the external context of affirmative action was "a trap". President Gray suggested that the mandate for American universities and colleges in 1984 was to be concerned with the "daily struggle of making our own institutions places which invite and nurture talented people, no matter how different they may be, in settings which have traditionally been white and male in composition and outlook". President Gray challenged everyone "from trustees and presidents to those just beginning their careers" to be catalysts for institutional change.

Over the ten year period from 1982 to 1991, Underrepresented Minority representation on the administrative staff has been maintained at the level of approximately 6 percent of the total administrative pool. During this period, Underrepresented Minority adminis-

tute. This figure represented 8 percent of all new administrative hires at all levels. However, during this same period, seventy-seven (77) or 6 percent of the Underrepresented Minority administrative work force terminated for various reasons, thereby yielding a net gain of only 2 percent in overall minority administrator recruitment over the decade. A detailed analysis of the growth, distribution, and mobility of administrative staff (including minority administrators) for the period 1982-1991 is presented in Appendix C. Summary data can be found on Table 3. There are some highlights to this analysis which warrant mention here.

Minority administrators have lost ground with regard to their representation at senior management levels at the Institute. In 1982, there was one Underrepresented Minority administrator in the senior management ranks. However, over the decade, the senior officer in this rank terminated employment and no additional minority administrators were promoted to or hired into this rank. As a result, there is no minority representation on the Academic Council which consists of senior management, and no role model or mentor to provide a model for professional development and success within the senior officer ranks.

4.2 Recognition and Reward

There was one consistent theme presented in the survey and focus group sessions. It was the perception among many Underrepresented Minority administrators that their contributions and extraordinary job performance often went unrecognized or unrewarded. Many Underrepresented Minority administrators suggested that their professional contributions were ignored or "devalued" by their immediate managers. As a result, their job-related achievements were not conveyed through the managerial line thus limiting their promotional opportunities.

Many respondents in the focus group sessions seemed to suggest that this devaluation and lack of recognition of their contributions may be the result of stereotypical images held by their non-minority managers. Some African American administrators referred to being perceived as either "too black" to be considered appropriate for a position or set of administrative responsibilities, or "not black enough" to be suited for upward professional mobility.

It is interesting to note that those Underrepresented Minority administrators who perceived themselves as upwardly mobile in their professional careers at MIT attributed this success to a mentor relationship. The mentor usually provided the recognition of accomplishment and often bypassed the immediate supervisory structure to communicate the professional contributions or competence of the Underrepresented Minority administrator to higher administrative levels. In each instance where an Underrepresented Minority administrator identified a mentor relationship as responsible for their promotion or upward mobility, there was often the inference that this was a unique or fortuitous ad hoc relationship.

Salary is perhaps the greatest indicator of reward for outstanding performance and accomplishment in the work place. An analysis of salary range data for most Underrepresented Minority administrators suggests that their perceptions of lack of recognition and reward may be valid. A clear majority of all Underrepresented Minority administrators are employed in the middle and lower management levels. Based on survey responses and an analysis of Equal Employment Opportunity data, the salaries of these administrators tend to fall in the "\$25,000 to \$34,000" range for those in the lower management levels and in the "\$35,000 to \$44,000" range for mid-level Underrepresented Minority administrators. When compared to the overall salary ranges for these administrative ranks, as indicated in Table 2, Underrepresented Minority administrators fall clearly in the lowest

salary ranges for their managerial levels. From this vantage point, Underrepresented Minority administrator perceptions of the existence of a "glass ceiling" may be sound.

Table 2

Administrative Staff Salary Ranges 1991 Figures

Upper Management Levels
Highest Range \$66,400-110,900
Lowest Range \$42,100-69,900

Middle Management Levels
Highest Range \$40,800-68,000
Lowest Range \$31,000-51,600

Lower Management Levels
Highest Range \$30,000-50,500
Lowest Range \$21,900-36,800

(Source: Office of Personnel)

4.3 Professional Mobility

The impetus of the study was the perceived lack of professional mobility for Underrepresented Minority administrators, as compared to other administrative staff groups. In fact, the statistical reviews and analyses conducted suggest that even though the aggregate numbers of Underrepresented Minority administrators grew over a ten year period, Affirmative Action/Equal Employment Opportunity goals have not been achieved. This lack of achievement is particularly dramatic as it relates to upward mobility and promotion to the upper management levels (Cluster A).

At present, there are no Underrepresented Minority administrators who have been promoted to senior management. Over half (55 percent) of minority administrators are employed in the lower management levels. Generally, promotion rates into or out of this administrative level have remained at the 5 percent rate. Yet, even this percentage is deceptive in real terms.

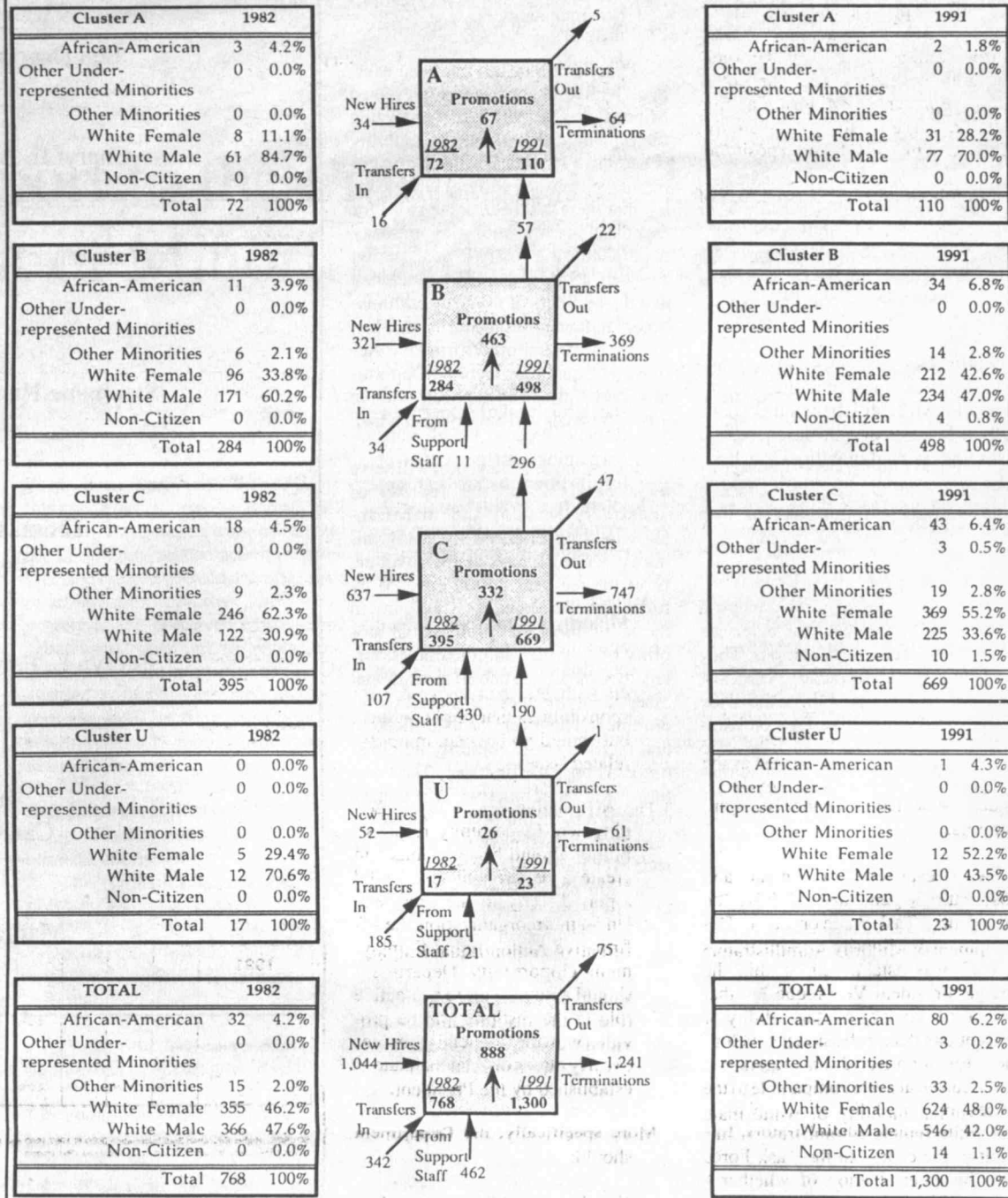
Most of the Underrepresented Minority administrators surveyed, as well as those participants in the exit interview process, seem to perceive a lack of opportunities for professional development at MIT. Many respondents suggested the need for a structured mechanism to enhance professional development for Underrepresented Minority administrators.

It is difficult not to make some comparisons of the professional mobility of minority administrators and other groups which have perceived underrepresentation in management. For example, when compared to white women administrators, minority administrators have made fewer gains in recruitment, retention, and professional development. Over the decade under study, white women represented 71 percent of the promotions from support staff to administrative staff as opposed to 7 percent mobility from support staff to administrative staff for Underrepresented Minorities. Overall, of all promotions, white women administrators represented 49 percent as compared to 5 percent for their Underrepresented Minority counterparts.

These comparisons, taken at face value, may account for some of the perceptions of differential treatment advanced by many Underrepresented Minority administrators. However, the reasons for the difference may be more straightforward. In fact, over the decade, white women administrators were hired at a rate of 44 percent as compared to 8 percent for Underrepresented Minority administrators. The 1981 Equal Opportunity Committee Report concluded that gains in the overall numbers of white women administrators could be attributed to the "transition of support/exempt employees into entry level management positions". Conversely, the 1981 report also concluded that "The minority pools at lower management levels" had not been "effective for filling openings in higher categories".

Table 3

GROWTH, DISTRIBUTION AND MOBILITY OF THE ADMINISTRATIVE STAFF
JANUARY 1982 - DECEMBER 1991



In the end, the issue relates more to the size of the pool than the rate of growth. The pool of white women administrators is larger, across all administrative ranks, than the pool of Underrepresented Minority administrators. In fact, Underrepresented Minority administrators have been promoted at a rate consistent with their numbers. The problem is that the size of the pool is so small relative to other administrative and staff pools. The analysis clearly suggests a need to increase the numbers of Underrepresented Minority staff at all levels with an aggressive recruitment campaign that is more in keeping with the Affirmative Action/Equal Employment Opportunity goals of the Institute.

Inherent in these findings is the conclusion drawn from the assessment of personnel data regarding the growth, distribution, and mobility of the administrative staff. In the end, although it appears that Underrepresented Minority administrators experienced a very substantial percentage increase in growth (159 percent as compared to a 69 percent increase for all administrative staff), the overall aggregate numbers have not increased for the Underrepresented Minority group in relation to all other administrators. In fact, Underrepresented Minority administrators may have lost ground in that there is no presence in senior officer ranks.

This conclusion is further substantiated in an analysis of responses of key administrators regarding their success in achieving affirmative action goals within their respective organizational units. Of the fourteen Deans and Vice Presidents interviewed, only three indicated success with regard to stated affirmative action goals. Other interview participants suggested that the institutional affirmative action goals were unrealistic, due in part, to the difficulty experienced in recruiting minority candidates.

5.0 Project Design

The Presidential Task Force on Career Development of Minority Administrators conducted a six month fact finding study to determine the career advancement opportunities of minority administrators at M.I.T. and to recommend policy and operational changes to improve those opportunities. To accomplish this study, the Task Force utilized a variety of methodological approaches to develop an accurate and objective data base for analysis. Between October 29, 1991 and March 4, 1992, the Task Force met thirty-two times for a total of fifty-six plus hours.

The Task Force devoted over thirty hours to in-depth interviews with senior officers. (Interview questions and a list of those interviewed are provided in Appendix F.) In addition to President Vest, five School Deans and six Vice Presidents participated in the interview process. The Task Force also interviewed the Dean for Undergraduate Education and Student Affairs, the Executive Director of the Alumni Association, the Chair of the 1981 Equal Employment Opportunity Committee, and the Director of Personnel.

The administrators were requested to share their perspectives in response to a set of open-ended questions regarding career development for Underrepresented Minority administrators in their respective areas. They were also queried as to their perceptions of institutional goals with respect to affirmative action and as to their goal-setting strategies for addressing changing demographics and affirmative action plans within their respective areas. All interview participants were requested to provide copies of their organizational chart with positions currently held by Underrepresented Minority employees indicated.

The data base for the study also included responses to a written survey distributed to one hundred and eighty* Underrepresented Minority administrators. Sixty-one surveys were completed. The 56 percent response rate to a written survey conveys the depth of commitment and confidence that Underrepresented Minority administrators had for the process of inquiry for the study. Next, the Task Force engaged a team of external consultants to conduct four one and one half hour focus group sessions. All Underrepresented Minority administrators were invited to participate in the focus groups whether or not they had submitted a completed written survey. At least four members of the Task Force attended all focus group sessions.

*This number varies from the Equal Employment Opportunity and other Task Force statistics on Underrepresented Minority administrators in that it includes employees at Lincoln Laboratory.

The external consultants prepared a set of questions as guidelines for the sessions and began each session by describing the purpose of the focus group approach and by assuring the confidentiality of the process. Most focus group participants seemed open and willing to share their opinions and experiences. The fact that the consultant team was from the outside created a "more secure" environment for participation. The results of the focus group sessions and of the written survey were analyzed by the consultant team. Their findings are presented in their entirety in Appendix E.

Select Task Force members identified eleven (11) Underrepresented Minority administrators who had terminated from the Institute during the last ten years to conduct exit interviews. Of this number, only seven (7) responded. The remainder either indicated their

unwillingness to participate or failed to respond. The exit interview data provided some interesting insights regarding perceptions of growth, the quality of professional life and career affiliation with MIT, and the apparent existence of an administrative "glass ceiling". Although small in number, the findings of these interviews were in line with the survey results of presently employed Underrepresented Minority administrators. It is clear that more than eleven (11) Underrepresented Minority administrators terminated employment from the institute over the ten year period and that the opinions and impressions of this pool are valuable; hence, the need to have a more formalized structure for exit interviews.

A final data compilation and analysis included a review of recruitment, salary, attrition, and promotion statistics from employment data prepared by the Equal Employment Opportunity and Personnel Offices. Two separate analyses were performed on these data by members of the Task Force.

6.0 Summary

Administrative officers occupy a unique position on the Massachusetts Institute of Technology campus. They provide services to faculty, students, and the community. Given the wide range of administrative jobs on campus, the Institute should find it easier to recruit minority individuals for administrative positions than to recruit for faculty positions. Based on the premise that the supply of candidates in the non-academic areas is significant, searches for individuals to fill positions outside of academic departments should be easier. In general, administrative positions are often perceived as developmental in one's career and therefore do not have the rigid focus on

advanced terminal degree requirements that faculty searches have. The administrative areas, development areas, and other related segments of the Institute have considerable flexibility to recruit minority administrators with appropriate credentials and work experience.

This flexibility has not been exercised with respect to Underrepresented Minorities. The 1981 report analyzing the growth, distribution, and mobility of administrative staff on the main campus of the Institute, while acknowledging that there had been some gains for "specific members of the minority population" over a five year period between 1976 and 1981, concluded that the numbers of minority administrators remained small and "stated hiring goals", based on Affirmative Action and Equal Employment Opportunity guidelines, "had not been met". In 1991, the goals still have not been met.

It is hoped that this report will serve as a catalyst for the redress of underrepresentation and disenfranchisement experienced by many minority administrators at the Institute. Over the ten year period covered by this study, there have been few gains in the recruitment and professional mobility of minority administrators. Often, in response to such an institutional assessment, the focus is placed on recruitment. However, the identification and recruitment of minority administrators is only the first step. The Institute must be pro-active in retaining minority administrators and enhancing their professional development. In the end, MIT must come to grips with the term "full participation". The redress of these issues for Underrepresented Minority administrators will result in a significant contribution to the growth and development of MIT as it moves toward work force 2000.

Members of the Task Force on Career Development of Minority Administrators

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Project Summary Report to the Presidential Task Force On Career Development of Minority Administrators at MIT

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EXECUTIVE SUMMARY

This executive summary outlines the main points contained in the Project Summary Report to the Presidential Task Force on Career Development of Minority Administrators at MIT. Its purpose is to provide a brief overview of the issues therein addressed.

Overview

This report analyzes and summarizes the perceptions of the Institute's underrepresented minority administrators¹ and is based upon their responses to a written survey, as well as open discussions emanating from four (4) focus groups conducted by consultants Douglas H. Johnson, Ph.D., of Jane C. Edmonds & Associates, Inc. and Holly M. Carter, Ph.D., president of International Management and Research Associates, Inc. One hundred eight (108) confidential surveys were disseminated to underrepresented minority administrators by the Presidential Task Force. Sixty-one (61) responses were received, representing a response rate of 56%. Four (4) focus group meetings were held between January 13th - 16th, 1992. A total of sixty-seven (67) persons attended, representing 62% of those persons invited to attend.

Central Issues

Numerous issues were identified by both the written surveys and focus group comments. These issues, stated generally, revolved around:

A. Institutional Environment

The Institute is seen as a great educational institution espousing liberal ideals where white males enjoy a large degree of power and influence. Most underrepresented minority administrators perceive that the "old boy" network largely determines how far one can rise within the Institute; they also perceive that they have little access to that network.

B. Differential Treatment of People of Color

Participants strongly communicated their perception that people of color are habitually treated less favorably than whites in similar positions; participants referred to salary discrepancies between whites and blacks as well as harassing and racist remarks directed at them by both coworkers and supervisors. In addition, they mentioned the existence of certain positions specially earmarked for minority administrators, positions which in effect "ghettoize" their presence at the Institute and disallow their acceptance into other desirable, upwardly mobile jobs.

¹ For the purpose of this report, the terms "underrepresented minority," "minority" and "people of color" refer to individuals of African-American, Mexican-American, Puerto Rican and Native American descent, as defined by the Institute. No individuals of Puerto Rican descent responded to the survey.

C. Lack of Professional Development for Underrepresented Minority Administrators

Many participants expressed the opinion that there are no growth opportunities for people of color at the Institute, and that underrepresented minority administrators looking to advance professionally must eventually leave the Institute. A great majority of the respondents stated that they believe a "glass ceiling" exists for underrepresented minority administrators which limits their advancement opportunities. They indicated that this perception is substantiated by the absence of people of color in middle and upper-level administrative positions. In addition, participants expressed a belief that the lack of delineated job descriptions, of a standardized performance evaluation mechanism and of a standardized job posting system may allow, and even encourage, discriminatory practices to flourish in the individual departments.

D. Absence of Advocacy or Formalized Redress for the Grievances of Minority Administrative Staff

Most minority administrators indicated that the decentralization of the Affirmative Action office contributes to the lack of formalized avenues for the redress of their grievances and to the lack of a process of advocacy within the Institute for their concerns. Many stated that they were never told that someone in their respective departments served an Affirmative Action administrative function, so that they were unable to utilize this person's services. Moreover, participants indicated discomfort with a process wherein the same person often serves the dual functions of personnel officer and Affirmative Action administrator, thereby raising confidentiality concerns.

Major Themes

Three major themes permeate the experience of the underrepresented minority administrators at MIT: a) feelings of isolation within the workplace; b) a sense of being stereotyped into certain job categories; and c) a sense of being devalued both by coworkers and supervisors.

A. Feelings of Isolation

Minority administrators reported strong feelings of isolation from one another and a belief that the institutional culture itself contributes to these feelings. They indicated that an additional effect of this sense of isolation was the lack of access to information about promotional opportunities within the departments.

B. Stereotyping

Minority administrators indicated that their coworkers and supervisors tend to deal with them based upon ethnic and racial stereotypes, that this stereotyping tends to preclude their ability to receive fair and accurate feedback about their work, and, most importantly, promotions and raises.

C. Devaluation

African-American administrators told of having their professional credentials and experiences devalued in their

work setting. Some participants related that they felt unable to "be themselves" and were discouraged from participating in minority-related activities. Specifically, many indicated that this sense of devaluation manifests itself most notably in the perceived existence of "ghettoized" positions for minorities, the harassing and insensitive comments directed at underrepresented minority administrators by their peers, and the perceived lack of mobility for minorities at the Institute.

Recommendations

A. Minority Administrators' Recommendations

This is a listing of participants' most pertinent recommendations:

- Demonstrate institutional commitment to valuing diversity through policy reformation;
- Promote and hire more minorities into top management positions;
- Promote more minorities from support to administrative positions;
- Establish a formal mentoring program for minority administrators;
- Centralize Affirmative Action office;
- Standardize written job descriptions;
- Standardize regular performance evaluations; and
- Institute cultural diversity training in order to sensitize managers to ethnic, economic and gender differences which occur in the work environment.

B. Consultant Team's Recommendations

Based upon its study of the focus group and survey results as well as its extensive experience with identifying and addressing diversity-related issues in corporate and institutional cultures, the consultant team makes the following recommendations in priority order:

1. Appoint a minority administrator to a newly created senior-level management position;
2. Promote minority administrators into middle management and director level positions;
3. Establish diversity valuation as a high-priority policy for the entire Institute;
4. Establish a presidential oversight committee on managing diversity and minority career development; and
5. Develop a Minority Job Bank.

1.0 INTRODUCTION

The Presidential Task Force on Career Development of Minority Administrators has engaged consultants Jane C. Edmonds & Associates, Inc. ("JCEA") and International Management and Research Associates, Inc. ("IMRA") to work with the Task Force to explore the perceptions of the Massachusetts Institute of Technology's ("the Institute's") underrepresented minority administrators regarding their

opportunities for professional development and career advancement. The objective of this summary report is to a) document the perceptions of African-American and other underrepresented minorities at the Institute regarding institutional culture, differential treatment, recruitment/retention and management issues, and b) provide recommendations designed to improve the opportunities for advancement for people of color within the institutional culture. These perceptions and recommendations are based upon information obtained from a series of focus group meetings attended by underrepresented minority administrators, together with the results of a survey documenting the experiences of underrepresented minority administrators at the Institute. The focus groups were facilitated by Holly M. Carter, Ph.D., president of IMRA and Douglas H. Johnson, Ph.D., of JCEA. This report is prepared by Dr. Carter and the JCEA project team consisting of Jane C. Edmonds, Dr. Douglas Johnson and Linda Brothers.

1.1 Background and Context

Many institutions have recently focused their organizational attention on the nature and value of diversity in their work force. Often this focus is generated as a result of comments or concerns raised by members of underrepresented ethnic groups internal to the workplace. The institution and members of its administrative leadership recognize the need for a focus on diversity. Once the decision to focus on the question of how to proceed is central to the success of the approach. Ideally, the institution's internal and external resources are utilized to study the issues. Whatever the catalyst, an institutional focus on the nature and value of diversity usually benefits the entire work force.

A one-day seminar held at Endicott House in July 1991 under the sponsorship of the Association of African American Administrators at MIT served as the impetus for this study of the professional and career development of underrepresented minorities at the Institute. At that seminar, participants discussed a variety of issues, including a lack of professional and career development, and their underrepresentation in senior policy-making positions at the Institute. At present, MIT has an estimated work force of eight thousand two hundred thirty-five (8,235) employees (not including union workers), of whom roughly five hundred ninety-five (595) are members of underrepresented minority groups. There are approximately one hundred eight (108) minority administrators on staff at MIT. This figure is compared to a total administrative force of sixteen hundred twenty-five (1,625) employed by the Institute.

As a result of the comments and observations generated by the seminar, a Presidential Task Force on Career Development of Minority Administrators at MIT was established to provide new approaches to professional development and career advancement for MIT's minority administrators. The

Task Force enlisted this consultant team to provide an additional analysis and assessment of these issues from an independent perspective. This report documents our findings and analysis.

1.2 Program Overview

This report analyzes and summarizes the perceptions, complaints, and suggestions of the Institute's underrepresented minority administrators based upon a) answers to a written survey instrument designed, disseminated and collected by the Task Force as well as b) open discussions emanating from four (4) focus groups.

On December 23, 1991, one hundred eight (108) confidential surveys were disseminated to underrepresented minority administrators by the subcommittee of the Presidential Task Force on Career Development of Minority Administrators. As of January 23, 1992, sixty-one (61) responses had been returned, representing a substantial response rate of 56%.

The consultant team facilitated four (4) focus group meetings between January 13th and 16th, 1992. Participants attending the confidential focus groups represented a broad range of Institute administrative functions. Although participants at the focus groups did not self-identify their ethnic/racial affiliations, most participants appeared to be African-American. Attendance at these focus groups was voluntary and participants were allowed to attend more than one focus group if they so desired. In those few instances where individuals attended more than one focus group, their comments and presence were noted only once. Counting each participant only once, seventeen (17) persons attended focus group one; fourteen (14) persons attended focus group two; thirteen (13) persons attended focus group three; and twenty-three (23) persons attended focus group four, representing a total attendance rate of 62%, or sixty-seven (67) persons out of one hundred eight (108) administrators surveyed, a significant proportion of the population of underrepresented minority administrators at MIT.

In analyzing the results of the surveys and focus groups, we have sought to identify theme, issues and recommendations only as they presented themselves from the data. These themes are supported by specific responses from the focus group and survey results. Language appearing in quotation marks is taken from either the surveys or focus groups.

2.0 PROJECT ISSUES

There were numerous issues identified in both the written surveys and focus groups. A number of the survey respondents and focus group participants expressed concern regarding the lack of support for minority administrators at MIT. At the same time, however, most of the participants highlighted some positive features of the MIT workplace, including the health and tuition benefits afforded MIT employees, the stimulating intellectual environment, the resources and programs available, and the prestige of the name and reputation of MIT. One fo-

African-Americans have reached senior administrative positions" and that "quite a few [people of color] have left because of [the] glass ceiling." One person expressed the belief that many employees at the Institute "would rather hold minorities back"; and another person related the story of being next in line for a position which was suddenly vacated: "I was not consulted as to whether or not I was interested in the position, [but] a new person was brought in from the outside whom I had to train."

2.3.c Analysis

Although there were some exceptions, most of the Institute's minority administrators voiced extreme dissatisfaction regarding the Institute's recruitment, career planning and personnel practices, believing that these practices actually preclude their hiring and development within the Institute.

Additionally, it has been observed that no minority administrators sit on the Academic Council and only one with a non-minority focus sits on the Administrative Council. The lack of minority representation on these two important councils directly relates to the issue of upward mobility for minorities at the Institute. In addition, the presence of only one minority on the Administrative Council with a non-minority focus adds to the sense that minorities can only be utilized as an interface in minority-related issues.

As stated above, many minority administrators referred to the existence of a "glass ceiling" which prevents professional and career advancement at MIT, suggesting that advancement to "below" line authority levels is possible for those individuals with a strong sense of efficacy and the "entrepreneurial" initiative to advance their own career. At the same time, they point to an institutional culture that a) defines a "slow track" for career advancement, b) functions on an informal basis for advancement and promotion, and, c) ignores or nullifies the professional contributions made by minority administrators in the work force.

Numerous focus group participants indicated that only lateral movement was available to minority administrators, rather than outright promotions. The survey results, however, did appear to indicate that many of the respondents described themselves as having been promoted. Nonetheless, the survey does not indicate at what level these promotions occurred, and it is probable that they occurred at levels low enough to keep the glass ceiling intact. In addition, some survey participants may have defined "promotion" to include any pay increase in their current position, whether or not the increase included any additional responsibility or new job title.

Yet another area of concern was the inconsistency of the implementation of standards regarding delineation of specific job descriptions, regular, written performance evaluations, and mutually defined expectations for job performance and job-related responsibilities. Many focus group participants indicated that they had not received clearly delineated job descriptions which detailed responsibilities and expectations. Further, there was consistent indication that few minority administrators have received written evaluations of their job performance on a regular basis. In those cases where written performance evaluations were received, there was rare opportunity for feedback, comment or reaction from the minority administrator being evaluated.

Especially troubling is the lack of standardization in the performance evaluation and job posting mechanisms. This can prove to be problematic for the Institute, since such a lack of standardization can allow discriminatory practices to flourish within the departments, even if this is not the Institute's intent.

Moreover, both the focus groups

and the survey results appear to indicate that the Institute relies heavily upon personal contacts and referrals for many of its best positions. Many minority administrators, on the other hand, indicated in the focus groups that they obtained their positions through ads in the Boston Globe and the Bay State Banner. Ads and search firms are used only as a means of supplementing the basic applicant pool. Since word of mouth is the primary mechanism for filling the Institute's job openings, minorities are not even in the loop to be considered for the bulk of the positions. Numerous minorities reported hearing about the positions after they had already been filled, or hearing that the positions were already earmarked for the "majority" friend of the person filling the position.

Participants stated that they felt obliged to put in extra effort with no indication that this extra effort would be recognized and little confidence that they would be rewarded with professional growth in their department. In the end, most minority administrators expressed the belief that professional advancement at MIT is based on "personal contacts rather than competency" and that color, and in some instances gender, is a barrier to career advancement to the senior administrative ranks.

2.4 Advocacy/Grievance Procedures

Most minority administrators and staff attending the focus group sessions⁴ agreed that they did not have the benefit of advocacy or appropriate application of grievance procedures to redress legitimate complaints or concerns regarding employee relations, evaluation and performance reviews, or differential treatment. The observation was made that most grievances involving a minority administrator would be resolved with the minority administrator being laterally moved to another position.

Accordingly, numerous participants indicated that they believe that they have no avenue for redress when they are confronted with inappropriate and offensive racist behaviors in the workplace. One participant told of having to report to a supervisor who is well known (by other whites as well as blacks) as being a racist. The participant reported the supervisor's actions to the department director, but the director's method of dealing with the situation was to have the black employee report directly to the director rather than to discipline the supervisor. In so doing, the director, whether intentionally or not, communicated that the complaining black employee is the problem, rather than the discriminating supervisor.

Participants indicated that the decentralization of the Affirmative Action and personnel management offices further limits the advocacy and grievance options available to many minority administrators and staff. Some suggested that often the personnel administrator in a department serves the additional function of Affirmative Action Officer and, in such instances, the confidentiality and effectiveness of the process might be in question. In the absence of advocacy or grievance procedures deemed equitable many minority administrators seemed to suggest that it was best "not to make waves."

Even more distressing, a great number of minority administrators indicated that they did not know that there was a person in their department who was responsible for the Affirmative Action duties. Some participants expressed shock to learn of this, stating that they were "never told" that anyone in their department served that function. Obviously, where participants are unaware of the existence of a possible advocacy and/or grievance option, that option cannot be exercised.

4 The consultants' analysis of the administrators' concerns about the Institute's advocacy and grievance procedures is based upon the focus group sessions. The survey did not ask questions specifically directed to this issue.

2.5 Summary of Findings

We, the project team, describe our role in this process as being the conduit of issues identified by MIT minority administrators. Nevertheless, as a result of our observations and experience in the fields of diversity training, intercultural relations and organizational management, we have also included in this section summary observations which are based on our familiarity with diversity issues as they relate to corporate and organizational culture.

While many of the respondents to the survey and participants in the focus group sessions identified issues which caused them concern or discomfort as MIT employees, it should be clarified that, on the whole, most minority administrators seemed committed to remaining at MIT and working to make the environment more conducive to their growth, as well as to the professional growth and development of their non-minority counterparts. It is interesting to note, however, that when asked on the survey to rank the factors necessary for career advancement at MIT, four of the five responses - access to professional networks, mentoring, increased visibility, and skill development - are areas which most of the participants in the focus group sessions observed were not consistently available to minority administrators at MIT.

While most minority administrators pointed to specific negative experiences or issues which have arisen during their employment at MIT, few characterized their professional experience at MIT as wholly negative.

Additionally, although the scope of this project was the career development of minority administrators at MIT, we would suggest that the issues raised by the participants in the process may be equally applicable to all MIT employees. Feelings of isolation and professional stagnation or insecurity may be shared by other minority employees in the support staff ranks whose numbers are also proportionally low. Any future studies and initiatives should include minority employees at the Institute.

An analysis of the survey results proved surprisingly more positive than the comments at the focus group sessions would have suggested. We can arrive at several plausible explanations for this occurrence. It is a safe assumption that many of the focus group participants also completed survey questionnaires, in most instances prior to attending a focus group session. The opportunity to mull over responses or rethink their experiences at MIT may have resulted in a refocusing on their more negative experiences. The isolation factor evidenced during the focus group sessions may have had the consequence of prompting some minority administrators and staff to assess their experience at MIT within narrow parameters. The opportunity to hear the experiences of others may have given context and credence to their own more negative experiences. Several participants suggested that they often felt the need to "do a reality check" to make sure their responses to negative experiences were valid. In many instances the focus group sessions may have provided such a reality check. Moreover, many focus group participants indicated that they were wary of recording written survey responses because of confidentiality concerns. This fear may have contributed to their being less than candid with the survey responses which were returned.

3.0 RECOMMENDATIONS

Throughout the focus groups, and in their responses to the individual survey questionnaires, many administrators made concrete suggestions which, if implemented, could considerably alter the working environment at the Institute, and serve to foster the increased career development of all employees, including people of color. These recommendations by the administrators follow naturally from our report, and are therefore, self-explanatory; the consultant team's recommendations follow thereafter.

3.1 Minority Administrators' Recommendations:

The minority administrators were not asked to rank order their recommendations either on the survey or in focus group sessions. However, we have presented their recommendations based on the frequency with which certain recommendations were made, or an observed intensity of feeling regarding issues related to these recommendations, as evidenced by focus group and survey comments. It should be noted, though, that many of these recommendations are interrelated and to implement some without others will diminish the level of accomplishment in achieving stated goals related to minority professional advancement at MIT.

- Demonstrate institutional commitment to valuing diversity through policy reformation:

There should be a clear articulation of MIT's commitment to achieving the objectives relative to managing a culturally and ethnically diverse workplace. Critical to this stated commitment must be a statement of the specific diversity goals for the institution which include specific targets and timelines for the professional mobility of all existing and new minority administrators, the identification of expected measurable outcomes, and the identification of appropriate resources to effect the necessary growth and change in the MIT environment.

These goals related to valuing diversity in the MIT work force must be communicated by the President and his chief senior administrators in order to demonstrate senior-level support and specific mechanisms for accountability at all management levels for the Institute-wide accomplishment of these goals. Specifically, annual performance reviews of all management must include an assessment of individual and departmental initiatives to increase the number of minority employees at the middle and upper-level management ranks.

- Promote and hire more minorities into top management positions:

The absence of minority role models at the senior levels of the academic administration contributes to a lack of efficacy for many minority professionals at MIT. Indeed, this phenomenon reverberates down to student ranks and impacts overall minority student performance as well. However valid the perception of a "glass ceiling" at MIT, the absence of senior-level minority administrators in positions with line and budgetary management authority reinforces the notion that success and accomplishment is unattainable for minority professionals in academia. Whatever other practices and procedures are in place, a commitment to the career advancement of minority administrators must be evidenced by the actual hiring and promotion of these people into positions of authority within the Institute.

- Promote more minorities from support to administrative positions:

This recommendation is directly tied to the two preceding recommendations.

Establish a formal mentoring program for minority administrators:

It is clear that an effective mentoring relationship is directly correlated with professional mobility at MIT for minority and non-minority administrators alike. In the case of minority administrators, mentoring relationships are informal and available to a select few. A formal mentoring program should be developed and made available to all minority administrators. The mentoring program should be a formalized element in professional development programs available at MIT.

- Centralize Affirmative Action office:

Many minority administrators and staff perceive the decentralized Affirmative Action procedures as ineffective. The need for a centralized Affirmative Action effort with presidential

mandate seems clear. Above all, the Affirmative Action component should operate and function separately from (yet in concert with) personnel management at MIT.

- Standardize written job descriptions:

Minority administrators at MIT have described the non-delineation of job descriptions, with vague expectations for performance, as a debilitating feature which impacts every employee at the Institute. Internal job descriptions should be standardized and readily available to employees.

- Standardize regular performance evaluations: The absence of Total Quality Management at MIT leads to perceptions of "back room promotions" and exclusive "old boy" networks that allocate promotions and merit raises. A program of standardized, regular written performance evaluations should be instituted immediately. The program should include a standardized schedule for evaluations and provide mandatory opportunities for written comment on the evaluation by the employee. In addition, performance evaluations should be interactive, providing an opportunity for both administrator and supervisor to give one another feedback. Promotions, merit and performance recognition, and salary increases should be based on these written evaluations, rather than on the subjective perceptions of competence and performance in the informal review process which is currently in place.

- Institute cultural diversity training in order to sensitize managers to ethnic, economic and gender differences which occur in the work environment:

Training workshops on intercultural relations and managing diversity should be instituted across all departments and offices to further assure the accomplishment of specific goals related to valuing diversity.

3.2 Consultant Team's Recommendations:

Based upon its study of the focus group and survey results and the consultants' related experience at other institutions, the consultant team makes the following recommendations in priority order:

1. Appoint a minority administrator to a newly created senior-level management position:

It is clear that the absence of a senior-level minority administrator in MIT's management structure has contributed to a perception by minority administrators of a lack of support and devaluation of the minority presence throughout the campus. We suggest that the feelings of a lack of advocacy, upward professional mobility, and efficacy expressed by minority administrators are in part attributable to the absence of senior minority authority figures.

Specifically, we recommend that a senior-level position with scope and authority at a vice presidential level be created and filled by a minority professional with commensurate qualification and experience. The newly-created senior management position should report directly to the President and include line budgetary authority with reporting authority for several departments and functions. While a minority professional in such a vice presidential line authority position could interface with a centralized Affirmative Action effort (see minority administrators' recommendation), the position should not be limited to such a focus. Ghettoization at any level diminishes the efficacy and valuation of minority professionals and students.

2. Promote minority administrators into middle management and director level positions: Many minority administrators expressed frustration that their professional development opportunities were limited. In particular, they perceived that they were rarely considered for mid-level management or director level positions in

the organizational hierarchy. In line with these perceptions the consultant team noted that an overwhelming majority of minority administrators had supervisory responsibilities limited to support staff.

We would recommend that serious efforts be made to identify and promote minority administrators who have demonstrated competence and management abilities.

3. Establish diversity valuation as a high-priority policy for the entire Institute:

A majority of institutions and organizations have focused on the need to value and better manage diversity. However, in many instances this focus is a response to concerns raised by minority employees and institutional concerns regarding the demographic

projections of Workforce 2000. If the management and valuing of diversity is to be effective, it must be viewed as a community-wide concern and not simply the concern of minority constituents. The consultant team recommends the establishment of diversity valuation as an inclusive, institute-wide policy which incorporates the concerns of, and values the contributions of, all Institute employees, including both those of minority and majority background. The design and establishment of future committees and program initiatives on the subject of diversity should include members from all constituencies in the Institute community in order to prompt a more universal investment in the definition and identification of these problems and the implementation of the solutions.

4. Establish a presidential oversight committee on managing diversity

and minority career development:

A presidential oversight committee should be established and charged with the following tasks:

- survey all MIT departments to identify and ensure the implementation of exemplary models of employee performance review and minority professional advancement;
- coordinate the development of a Minority Job Bank, mentoring program and related skill enhancement and career counseling components;
- monitor the effectiveness of newly-established and existing career development programs for minority administrators and staff at MIT;
- design and conduct exit interviews for all minority administrators and staff

who elect to leave the MIT work force or are otherwise terminated from employment; and

- design and coordinate an evaluation plan which incorporates a rigorous model to assess measurable outcomes as related to stated institutional goals on managing diversity and career advancement for minority administrators and staff.

5. Develop Minority Job Bank: Participants expressed a need for the development of uniform procedures for advertising positions that become available within the Institute. Minority administrators observed that, under the current system, job announcements are available in the Personnel Office and are published in the *Tech Talk* campus newspaper. This system was not deemed to be effective for or accessible to minority employees. Some sug-

gested that the publishing of available jobs is only a formality and that successful candidates have been identified long before positions are posted.

The establishment of a Minority Job Bank would serve the dual function of maintaining a current file of resumes of minority employees seeking career advancement and providing another opportunity for minority employees to identify available internal positions. Within the framework of such a support mechanism, the Institute could begin career counseling for minority administrators seeking upwardly mobile professional development. Additionally, the Institute could offer career development seminars and specialized skill enhancement training programs under the auspices of the Minority Job Bank program.