

In Special Recognition

The academic year 2003–2004 saw a number of changes to MIT's senior academic and administrative leadership.

At the end of June 2003, vice president for information systems James D. Bruce retired. A devoted member of the MIT community since his years as a graduate student, Professor Bruce led the development of the Institute's information infrastructure for 20 years, during which time it came to play an increasingly important role in research, teaching, and administration. In November, alumnus Jerrold M. Grochow joined MIT as vice president for information services and technology, bringing to the position 30 years of experience in technology management for government, industry, and nonprofit organizations.

In September, William J. Mitchell completed his service as dean of the School of Architecture and Planning, which was marked by vigorous engagement with new technologies and renovation of the School's facilities at 77 Massachusetts Avenue. Professor Mitchell continues to serve as head of the Program in Media Arts and Sciences. Associate dean Terry W. Knight served as interim dean until the arrival in February of the School's new dean, Adèle Naudé Santos, a distinguished architect and educator who came to the Institute from the University of California, Berkeley.

Paul Osterman was named deputy dean of the Sloan School of Management. New academic department or program leaders whose service began during the year included Wesley L. Harris, head, Department of Aeronautics and Astronautics; Bengt Holmstrom, head, Department of Economics; Ian H. Hutchinson, head, Department of Nuclear Engineering; Douglas Lauffenberger and Peter Dedon, director and associate director, respectively, Biological Engineering Division; and Maria T. Zuber, head, Department of Earth, Atmospheric, and Planetary Sciences. Thomas J. Allen and David Simchi-Levi were appointed codirectors of the Leaders for Manufacturing and Systems Design Management programs, while David M. Geltner was appointed director of the MIT Center for Real Estate, and Dava J. Newman, director of the Technology and Policy Program. Alexander Slocum was named director of the Experimental Study Group.

At the beginning of the academic year, the Laboratory for Computer Science and the Artificial Intelligence Laboratory merged to form the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL), building an even stronger platform for innovative research in these areas. Rodney A. Brooks was named director, and Victor W. Zue codirector, of the combined laboratory.

November saw the formal establishment of the new Eli and Edthye L. Broad Institute, a research collaboration of MIT, Harvard University and affiliated hospitals, and the Whitehead Institute for Biomedical Research, under the leadership of Eric Lander as founding director. Successor to the Whitehead Institute/MIT Center for Genome Research, also led by Professor Lander, the Broad Institute seeks to realize the promise of genomics research for medicine.

Changes in the administrative leadership of the Institute included the appointments of Stephen D. Immerman, senior associate dean for student life and executive director of enterprise services; Keith Glavash, assistant director for administration, MIT Libraries; Arthur L. Jones, director, MIT News Office; and Robert D. Scott, director of development research and systems.

Honors and Awards

The awards received each year by MIT faculty, students, and staff testify to the distinction of the Institute's programs and its people. Here we note only a few of the many honors and recognition earned by members of the MIT community during AY2004.

In June 2004, Timothy J. Berners-Lee, a senior research scientist who holds the 3Com Founders chair in the Computer Science and Artificial Intelligence Laboratory, was awarded the inaugural Millennium Technology Prize in recognition of his creation of the World Wide Web. Administered by the Finnish Technology Award Foundation, the prize honors "an innovation that directly promotes people's quality of life, is based on humane values and encourages sustainable economic development." Earlier in the academic year, Buckingham Palace had announced that Mr. Berners-Lee, a native of Great Britain, was to be made a Knight Commander, Order of the British Empire.

The National Academy of Engineering awarded Butler W. Lampson, an adjunct professor of computer science and electrical engineering, the Charles Stark Draper Prize, which recognizes innovative engineering achievement for a body of work extending over a period of years, with a proven contribution to human welfare. Dr. Lampson shared this prize with three colleagues, with whom he developed the networked personal computer at Xerox's Palo Alto Research Center in the early 1970s.

Erik Demaine, an assistant professor of electrical engineering and computer science, became one of the youngest people ever to receive a MacArthur Fellowship, more commonly known as the "genius" grant. The John D. and Catherine T. MacArthur Foundation awards the grants in order "to enable recipients to exercise their own creative instincts for the benefit of society at large." Although Professor Demaine's studies are theoretical in nature, centering around abstract geometry problems related to folding and bending, they have practical applications in fields as diverse as manufacturing and biology.

Institute Professor Isadore M. Singer shared the 2004 Abel Prize for the discovery and proof of a theorem that is deemed one of the great landmarks of 20th century mathematics. This award, presented by King Harald of Norway to Professor Singer and Sir Michael Francis Atiyah of the University of Edinburgh, acknowledges "their discovery and proof of the index theorem, bringing together topology, geometry and analysis, and their outstanding role in building new bridges between mathematics and theoretical physics". The Atiyah-Singer index theorem demonstrates the impossibility of M. C. Escher's famous paradoxical etching "Ascending and Descending" and has been broadly applied not only in mathematics but also in theoretical physics.

The Peter Gruber Foundation awarded the 2004 Cosmology Prize to Alan Guth, the Weisskopf professor of physics, and Andrei Linde, a professor of physics at Stanford University. The two were recognized for their development of fundamental ideas of cosmic inflation, which has been one of the dominant themes of cosmology for more than two decades. The theory of cosmic inflation, which contends that all matter in the universe was created during a period of inflation as the universe expanded rapidly, has led to a revolution in our approach to studying cosmology and to understanding the history of the universe.

Professor of biology Robert A. Weinberg, a founding member of the Whitehead Institute for Biomedical Research, shared the 2004 Wolf Prize in Medicine with Roger Yonchien Tsien of the Howard Hughes Medical Institute and the University of California, San Diego. Professor Weinberg was cited for his discovery that cancer cells, including human tumor cells, carry somatically mutated genes—oncogenes that serve to drive their malignant proliferation.

Robert Langer, the Germeshausen professor of chemical and biomedical engineering, received two major awards this year: the Heinz Award for Technology, the Economy and Employment, granted by the Heinz Family Foundation, and the Harvey Prize, awarded by the Technion-Israel Institute of Technology. Normally two Harvey Prizes are given each year, but this year's selection committee made the decision to award only one prize because Professor Langer's innovations—in biomaterials, biomedical technology, controlled drug delivery, and tissue engineering—qualified him in both areas in which the award was to be given, "science and technology" and "human health."

Election to the United States' national academies—the National Academies of Engineering and of Science and the Institute of Medicine—is one of the highest honors in their respective fields. This year, the National Academy of Engineering elected to membership three MIT faculty members: professors Rodney A. Brooks and Victor W. Zue of the Department of Electrical Engineering and Computer Science and Frank T. Leighton of Mathematics—all of whom are associated with CSAIL.

Two members of the faculty were elected to the Institute of Medicine: Nobel laureate H. Robert Horvitz of the Department of Biology and the McGovern Institute for Brain Research, and Leona Samson of the Biological Engineering Division, director of the Center for Environmental Health Sciences.

MIT's new members of the National Academy of Sciences are Professors Shafrira Goldwasser and Ronald L. Rivest of Electrical Engineering and Computer Science, Nancy Hopkins of Biology, and Maria T. Zuber, head of Earth, Atmospheric and Planetary Sciences.

Twelve MIT faculty members were elected to fellowship in the American Academy of Arts and Sciences: Professors Tania A. Baker of Biology, a Howard Hughes Medical Institute (HHMI) investigator; Abhijit V. Banerjee of Economics; Mounsi G. Bawendi of

Chemistry; Mark F. Bear of Brain and Cognitive Sciences, also an HHMI investigator; Mary C. Boyce of Mechanical Engineering; Claude R. Canizares of Physics, associate provost; Leonard Guarente of Biology; Subra Suresh of Materials Science and Engineering; Gang Tian of Mathematics; Graham Walker of Biology; and Maria T. Zuber. Also elected to fellowship was Alexander W. Dreyfoos, Jr., a life member of the MIT Corporation and head of the Dreyfoos Group/Photo Electronics Corporation.

The American Association for the Advancement of Science named three members of the MIT faculty to fellowship: Professors Sylvia T. Ceyer of Chemistry; Edwin L. Thomas of Materials Science and Engineering, director of the Institute for Soldier Nanotechnologies; and J. Kim Vandiver of Ocean Engineering, dean for undergraduate research.

The Institute's long tradition of national service continued during AY2004. Professor Maria Zuber was appointed to the Presidential Commission on the Implementation of United States Space Exploration Policy, while President Charles M. Vest was named a member of the Commission on the Intelligence Capabilities of the United States regarding Weapons of Mass Destruction.

His MIT colleagues honored Wolfgang Ketterle, the John D. MacArthur professor of physics, with the James R. Killian, Jr., Faculty Achievement Award, which recognizes extraordinary professional accomplishment by a member of the faculty. In 2001, Professor Ketterle shared the Nobel Prize in physics with two MIT alumni for their achievement in 1995 of Bose-Einstein condensate, a form of matter previously known only in theory; he is also known as an exceptional teacher and lecturer.

This year, five faculty members were named MacVicar Faculty Fellows in honor of their accomplishments and innovative methods in undergraduate education: Professors David Darmofal of Aeronautics and Astronautics, Jean Jackson of Anthropology, David Jerison of Mathematics, Steven B. Leeb of Electrical Engineering and Computer Science, and Anne McCants of History.

The 2004 Harold E. Edgerton Faculty Achievement Award was shared by assistant professors Catherine Drennan of Chemistry and Muriel Medard of Electrical Engineering and Computer Science. This award recognizes junior faculty for achievements in teaching, research and service to the MIT community.

This year the Institute presented the Gordon Y Billard Award, recognizing special services of outstanding merit to MIT, to two members of the staff: chief facilities officer Victoria V. Sirianni and Karen Nilsson, director of housing.

In Memoriam

Inevitably, death takes from among us each year men and women who have contributed to the intellectual vitality and service to the wider world that mark MIT as a community. The memory of their accomplishments urges us to our own best efforts.

Professor emeritus Judson R. Baron, a pioneer in the field of computational fluid dynamics, died of cardiac arrest at his home in Lexington, MA, on October 6, 2003. He was 79 years old. He was born in 1924 in Brooklyn, NY, and was raised in Queens. During World War II, he served with the 80th Infantry Division of the Third Army, receiving the Bronze Star for heroism. After the war, he returned to New York University and completed his bachelor's degree in engineering by 1947. In 1948 he enrolled at MIT, earning an SM in aeronautics and astronautics, and subsequently joined the research staff at MIT's Naval Supersonic Wind Tunnel. Dr. Baron joined the MIT faculty in 1956 after receiving the ScD degree and subsequently served as director of the Aerophysics Laboratory and the Wright Brothers Memorial Wind Tunnel. A leader in the analysis of the heat and mass transfer that accompanies high-speed flight, particularly during reentry into the Earth's atmosphere, he received the Air Force Exceptional Civilian Service Medal in 1988. He remained active within his field after his retirement in 1989: not long before his death, he provided technical assistance to the *Columbia* Accident Investigation Board.

Holography pioneer Stephen A. Benton, the E. Rudge ('48) and Nancy Allen professor of media arts and sciences and director of the Center for Advanced Visual Studies, died of brain cancer at Massachusetts General Hospital on November 9, 2003, at the age of 61. Born in San Francisco, he studied with Dr. Harold Edgerton and participated in Edwin Land's vision research laboratory at the Polaroid Corporation while pursuing his undergraduate degree in electrical engineering from MIT (Class of 1963). He proceeded to take both MS (1964) and PhD (1968) degrees at Harvard University. Dr. Benton returned to MIT in 1980 as a visiting scientist in the Laser Research Center. In 1982, he founded the Spatial Imaging Group and in 1984 became a founding faculty member of the MIT Media Laboratory. An enthusiast for all things optical, Professor Benton was perhaps most celebrated as the inventor of rainbow holography—which makes a hologram visible using common white light—but also made great contributions to medical imaging and fine-arts holography. He held fourteen patents in optical physics, photography, and holography. As one commentator noted following his death, he was known “for his love of sushi, his pride in being a nerd, his love of life, and the challenging twinkle in his eye.”

Wilbur B. Davenport, Jr. of Medford, OR, professor emeritus of electrical engineering and former department head, died on August 28, 2003, at age 83. He came to MIT in 1941 as an instructor in electrical engineering and went on to receive the SM and PhD in 1943 and 1950, respectively, and to serve as an assistant professor from 1949 to 1953. During that time, he joined MIT Lincoln Laboratory as the leader of the Communications Technology Group. He became associate head of the lab's Communications and Components Division in 1955 and head of its newly created Information Processing Division in 1958. Dr. Davenport returned to MIT as full professor in 1960 and served as associate director of the Research Laboratory of Electronics from 1961 to 1963, when he was named assistant director of Lincoln Laboratory. He held that post until 1965. He rejoined the faculty in 1968 and served as associate department head from 1968 through 1971 and as department head of electrical engineering and computer science from 1974 to 1978. In 1972, Professor Davenport was appointed professor of engineering and education in the School of Science and named

director of the Center for Advanced Engineering Study. He retired in 1982. His books included the oft-referenced “bible,” *An Introduction to the Theory of Random Signal and Noise* (1958).

Luis Alberto Ferré, governor of Puerto Rico from 1969 to 1973 and a life member emeritus of the MIT Corporation, died in a San Juan hospital following surgery on October 21, 2003, at the age of 99. Governor Ferré was born in Ponce, Puerto Rico, the grandson of a French engineer who had helped to construct the Panama Canal prior to moving to Cuba. Governor Ferré’s father, Antonio, settled in Puerto Rico and married Maria Aguayo Casals, a cousin of the great cellist Pablo Casals. Luis Ferré earned two degrees in mechanical engineering from MIT (SB, 1924; SM, 1925). An accomplished classical pianist, he also studied at the New England Conservatory of Music. He then returned to Puerto Rico and built his father’s business into a major industrial enterprise. As leader of the New Progressive Party, his ultimate political goal was statehood for his native island. Not only a political leader and industrialist, Governor Ferré was also a great supporter of the arts and in 1965 founded the Museo de Arte de Ponce. In 1984, Governor Ferré was awarded the Presidential Medal of Freedom, the highest civil distinction awarded by the President of the United States. He was elected to membership in the MIT Corporation in 1962 and life membership in 1975. He became a life member emeritus in 1979. In the early 1960s, Luis Ferré and his brother Herman organized funding for the construction of La Sala de Puerto Rico in the Stratton Student Center.

Robert Charles Gunness, life member emeritus of the MIT Corporation, died on January 28, 2004, at his home in Fullerton, CA. He was 92 years old. Born in Fargo, ND, Robert Gunness moved to Amherst, MA, when his father joined the faculty of the Massachusetts Agricultural College, now the University of Massachusetts, where he received his SB in chemistry in 1932. He continued his education in chemical engineering at MIT, receiving the SM in 1934 and the ScD in 1936, and then joined the faculty as an assistant professor. In 1938, he returned to the Midwest to join the research department of the Standard Oil Company of Indiana, where he spent 37 years. A specialist in distillation and heat transfer, he was prominent in the development and design of new processes for the refining of petroleum. In 1951, Dr. Gunness took a leave of absence from Standard Oil to serve as vice-chairman of the Research and Development Board at the Department of Defense in Washington, DC. He returned to Standard Oil the following year to become a director of the company and served in that capacity until his retirement in 1975. Dr. Gunness’ involvement with the MIT Corporation began with his election in 1958 as an alumnus nominee; he was elected to life membership five years later. In 1975 he served on the Sponsoring Committee for the chemical engineering building named in honor of Ralph Landau, and he was a member of the Steering Committee and of the National Business Committee in support of the MIT Leadership Campaign in the late 1970s and early 1980s. He became a life member emeritus of the Corporation in 1986.

Imre Halasz, an internationally renowned architect, urban planner, and educator, died at his home in Belmont, MA, on July 3, 2003, after a long illness, at the age of 77. A native of Budapest, Professor Halasz studied at that city’s College of Fine and Applied

Art and its Technical University, taking his diploma in 1950. Following postgraduate study in Paris and Leiden, he returned to teach at the Polytechnic University of Budapest until 1956. Professor Halasz was on the faculty in MIT's Department of Architecture from 1957 to 1963 and again from 1969 until his retirement in 1991. At the time of his death he was a senior lecturer in the department. His teaching career had also taken him to universities in Canada, Chile, Israel, Italy, and Japan. In partnership with his brother, Anthony, he conducted an active practice in architecture and urban design.

Charles P. Kindleberger, an economic historian and authority on international monetary affairs who was a leading architect of the Marshall Plan after World War II, died on July 7, 2003, of a stroke at Mount Auburn Hospital in Cambridge. He was 92. Ford International professor emeritus of economics, he had retired in 1976 after a third of a century at MIT. A native of New York City, he had graduated from the University of Pennsylvania and received his master's and doctoral degrees from Columbia University. During the war, he served in the Office of Strategic Services and the 12th Army Group. Afterwards, he oversaw the preparation of cost estimates for the European Recovery Program and became a key advisor on German reparations. Professor Kindleberger joined the Institute faculty as an associate professor in 1948, becoming full professor three years later. A prolific author, he wrote with authority not only on foreign exchange but also on international trade, multinational corporations, and economic and business history. He was widely sought after as an adviser to government and central bankers, but also worked to help historically black colleges strengthen their educational offerings in economics. Professor Kindleberger remembered staying up all night, night after night, during the development and implementation of the Marshall Plan, and he remained intellectually active until his death.

Longtime trustee Ralph Landau passed away on April 6, 2004, at the age of 87. As a high school student in his native Philadelphia during the Great Depression, he was fascinated by a newspaper article about the emerging field of chemical engineering. He attended the University of Pennsylvania on a scholarship and received a bachelor's degree in the field in 1937 before coming to MIT, where he received the ScD in 1941. He then joined the M. W. Kellogg Company, specializing in design and development for the refining and chemical industries. During World War II, he was responsible for designing the equipment necessary to produce fluorine, essential to the production of uranium 235 for the Manhattan Project. After the war, companies he founded were responsible for major innovations in petrochemical production processes, and in 1985 he received the National Medal of Technology. During the last two decades of life, Dr. Landau embarked on a second career in the study of the relationships between policy, economics, and technological innovation, becoming consulting professor of economics at Stanford University and a senior fellow at the Stanford Institute for Economic Policy Research. Dr. Landau was elected to the MIT Corporation in 1972 and to life membership in 1976—the same year that the new home of the Department of Chemical Engineering was named the Ralph Landau Building in his honor. Ralph Landau became a life member emeritus of the Corporation in 1991.

Professor emeritus William “Ted” Martin led MIT's Department of Mathematics for more than two decades, from 1947 to 1968, and oversaw its development from a small

service department into one of the world's great centers of both pure and applied mathematics. Professor Martin, who died on May 30, 2004, at the age of 92, was a native of Arkansas who graduated from the University of Arkansas and proceeded to earn MA and PhD degrees from the University of Illinois at Urbana-Champaign. He came to the Institute as an instructor in 1938 and joined the faculty two years later. He remained at MIT until his retirement, except for three years as head of the math department at Syracuse University from 1943 to 1946. One of Professor Martin's great accomplishments as head of his department came in his first year, when he proposed the establishment of a program of postdoctoral instructorships, still flourishing as the C. L. E. Moore Instructorship Program. After stepping down as department head, Professor Martin served as chair of the Faculty (1969–1971); he chaired the Education Division Steering Committee (1972–1973) and then served as the division's director (1973–1975). After retiring to Block Island, RI, Professor Martin led an effort to develop affordable housing for year-round residents of the popular vacation destination, and the resulting development was named in his honor.

Satoru Masamune, retired professor of organic chemistry, died at Newton-Wellesley Hospital on November 9, 2003, of complications from cardiac arrest. He was 75 years old. A native of Fukuoka, Japan, Professor Masamune received his bachelor's degree in chemistry from Tohoku University in Sendai, Japan, and then attended the University of California, Berkeley as a Fulbright fellow, earning a PhD in organic chemistry in 1957. Professor Masamune served on the faculty of the University of Alberta in Edmonton, Canada, from 1964 until 1978, when he joined the MIT faculty. For his major research contributions in the synthesis of natural products and the chemistry of small ring systems, he was elected to fellowship of the Royal Society of Canada and the American Academy of Arts and Sciences, named the Centenary Scholar of the Chemical Society of London in 1980, and received the prestigious Fujihara Award in Japan in 1997. In 1987 the American Chemical Society presented him with its A. C. Cope Scholar Award—named in honor of the eminent chemist who led the MIT Department of Chemistry from 1945 to 1965—and from 1991 until his retirement in 2000, Professor Masamune held the Institute's own Arthur C. Cope professorship of organic chemistry.

Institute Professor emeritus Franco Modigliani, winner of the Nobel Prize in economics in 1985—and the man his MIT colleague Paul Samuelson called “the greatest living macroeconomist”—died in his sleep at home in Cambridge on September 25, 2003, at the age of 85. Like so many of America's greatest minds in the decades after World War II, he had been a refugee from fascism. As a Jew growing up in Italy, he watched the rise of Mussolini, and participated in antifascist activism while a law student at the University of Rome. After the passage of the racial laws of 1938 he fled to France and then the US, eventually earning a doctorate in economics at the Graduate Faculty of Political and Social Science of the New School for Social Research in New York City. He held numerous teaching positions before joining the faculty of Pittsburgh's Carnegie Institute of Technology in 1952. He first came to MIT as a visiting professor in 1960 and was appointed to a tenured position two years later; he was named Institute Professor in 1970 and received the James R. Killian, Jr., Faculty Achievement Award in 1985, the same year that the Nobel Prize recognized his influential explanations of how people

save and of the role of debt in determining the value of corporations. Professor Modigliani continued to teach each spring in the years following his retirement in 1988.

Professor emeritus Norman C. Rasmussen, a pioneer in assessing the risks of nuclear power generation, died in Concord, MA, from complications of Parkinson's disease on July 18, 2004, at the age of 75. Professor Rasmussen was a native of Harrisburg, Pennsylvania, and received his bachelor's degree from Gettysburg College following service in the US Navy. He received a PhD from MIT in 1956 and was a member of the faculty from 1958 to 1994, serving as head of the Department of Nuclear Engineering from 1975 to 1981. He was best known as the author of a 1975 study that applied the probabilistic approach to risk assessment to the nuclear industry for the first time. Although scientific and public concerns over the dangers of nuclear power ensured that the report would be debated, it established the methodological framework for subsequent risk assessment not only in nuclear power but also in other industries. A member of the National Academies of Engineering and of Science, Professor Rasmussen was a frequent consultant and adviser to government and industry. He was also a woodworker and avid bird-watcher who loved to spend family time at a summer cottage he had built himself on Sand Pond in Marlow, NH.

Emeritus trustee George W. Thorn, a trailblazer in the fields of endocrinology and organ transplant, died at an assisted living center in Beverly, MA, on June 26, 2004, at age 98. A native of Buffalo, NY, George Thorn attended the College of Wooster in Ohio and received his medical degree in 1929 from the University of Buffalo, where he paid for much of his tuition by playing the banjo. In 1942, after teaching and clinical work at Buffalo, The Ohio State University, Massachusetts General Hospital, and Johns Hopkins Hospital, Dr. Thorn began 30 years' service as physician-in-chief at Boston's Peter Bent Brigham Hospital, predecessor to today's Brigham and Women's Hospital. He pioneered the treatment of Addison's disease—first developing tests to measure adrenal function and then laying the basis for the modern use of synthetic cortisone to treat the disorder. His research led to advancements in the treatment of hypertension, rheumatoid arthritis, and diabetes as well, and he was credited with bringing the first dialysis machine to the United States and organizing the team that performed the first successful human kidney transplant in 1954. Dr. Thorn played pivotal roles in the development of two of the country's most important medical and scientific philanthropies—the Howard Hughes Medical Institute and the Whitaker Foundation. At Harvard Medical School, he was known as an exceptional teacher. Dr. Thorn was elected a member of the Corporation in 1965, life member in 1975, and life member emeritus in 1981. At the time of his death, he was the oldest member of the Institute's governing body.

Arthur Robert von Hippel, a professor emeritus of electrical engineering who became a leader in the field of materials research, died of complications from flu on the last day of 2003, at the age of 105. Born in Rostock, Germany, he earned his PhD in physics at the University of Göttingen in 1924 and proceeded to teach at the universities of Istanbul and Copenhagen, where he worked with Nobelist Niels Bohr. His late wife, Dagmar, to whom he was married for more than 40 years, was the daughter of another Nobelist, James Franck. After fleeing Nazi Germany, Professor von Hippel came to MIT in 1936 at

the invitation of President Karl Taylor Compton. In 1940 he founded the Laboratory for Insulation Research, which was associated with MIT's Radiation Lab in the development of radar technology for the Allies during World War II, and in 1948 he received the country's second-highest civilian honor, the President's Certificate of Merit, for his development of the techniques and instrumentation necessary to make the measurements contained in his Table of Dielectric Materials, still the standard today. He became professor of astrophysics in 1947 and was named an Institute professor in 1962. He offered his students a personal view of life at the highest levels of intellectual achievement, enlivening his lectures with anecdotes, and sometimes casual snapshots, of the great figures in modern science. Professor von Hippel officially retired from MIT in 1964, but continued to teach and research. The von Hippel Award of the Materials Research Society, the highest international award in his field, has been presented annually in his honor since 1976; he was the first recipient. His son Eric von Hippel is a member of the faculty in the Sloan School of Management and represents the fifth generation in his family to teach at the university level.

Dr. George W. Whitehead, Jr., of Winchester, MA, died on April 12, 2004, aged 85. Professor emeritus in the Department of Mathematics, he had served on the MIT faculty from 1949 to 1985. Born in Bloomington, IL, Professor Whitehead received SB, SM, and PhD degrees from the University of Chicago. He taught at Brown, Princeton, and Purdue universities before coming to MIT in 1949. His doctoral dissertation laid the foundation for his research, which mixed geometric and algebraic methods to obtain important results in homotopy theory. (Homotopy is a continuous transformation from one mapping to another in a topological space.) He was among the first to master the technology of spectral sequences and use it to initiate a systematic calculation of the homotopy groups of spheres—one of the most important milestones in the postwar development of the field. He was elected a fellow of the American Academy of Arts and Sciences in 1954 and promoted to full professor at MIT three years later. He was elected a member of the National Academy of Sciences in 1972.

Professor of nutritional biochemistry Vernon Young, who revolutionized the scientific understanding of how the human body processes nutrients into protein, died of complications from renal cancer on March 30, 2004, aged 66. A native of Wales, he received his doctorate from the University of California, Davis, in 1965 and immediately began an association with MIT that lasted for the rest of his life. He was made full professor in 1977. Professor Young's research studies focused primarily on understanding how the body metabolizes the amino acids obtained from the consumption of protein, and he developed a formula to determine the appropriate mixture of amino acids necessary to make proteins for optimal health. The results of his research were far-reaching, directly impacting people's daily nutritional intake in developing nations as well as the industrialized world. A prolific writer, he authored more than 600 publications during his lifetime. Outside the Institute, he also lectured and conducted research at Harvard Medical School, Massachusetts General Hospital, and Tufts University. He served as director of research at the Shriners Burns Institute in Boston from 1988 to 1990 and became director of the mass spectrometry laboratory at Shriners Burns Hospital in 1991. Dr. Young was elected to the National Academy of Sciences in 1990 and to the Institute of Medicine in 1993.