Dean, School of Science

In academic year 2022, community members within the MIT School of Science continued to experience the constraints posed by the Covid-19 pandemic, especially during the omicron variant wave at the beginning of 2022. Despite ongoing challenges, researchers and scientists within the MIT School of Science made their mark, most notably as part of MIT's response to the global climate crisis.

In May 2021, the Institute issued "Fast Forward: MIT's Climate Action Plan for the Decade," a plan that outlines new and expanded initiatives across campus. In September 2021 Noelle Selin, professor in the Institute for Data, Systems, and Society (IDSS) and the Department of Earth, Atmospheric and Planetary Sciences (EAPS), and Anne White, Distinguished Professor of Engineering and head of the Department of Nuclear Science and Engineering, were named co-chairs of the MIT Climate Nucleus, which has broad responsibility for the management and implementation of the Fast Forward plan across its five areas of action: sparking innovation, educating future generations, informing and leveraging government action, reducing MIT's own climate impact, and uniting and coordinating all of MIT's climate efforts.

In February 2022, an MIT committee co-chaired by Rob van der Hilst, Schlumberger Professor of Earth and Planetary Sciences and EAPS department head; Mircea Dincă, professor in the Department of Chemistry; Professor Jesse Kroll of the School of Engineering; and Professor Chris Zegras of the School of Architecture and Planning selected the developers of 27 projects among more than 100 research proposals to create white papers as part of the MIT Climate Grand Challenges, the newest Institute-wide initiative in climate science and part of Fast Forward.

Among these 27, five flagship projects, two of which are spearheaded by science faculty, were announced in April 2022. These projects—"Preparing for a New World of Weather and Climate Extremes" and "Bringing Computation to the Climate Challenge"—are led by science faculty whose primary departmental affiliation is EAPS: Professors Kerry Emanuel, Raffaele Ferrari, Paul O'Gorman, and Noelle Selin, all prominent researchers in climate science research and modeling.

The other three Climate Grand Challenges flagship projects have representation from science researchers including Biology Professors Mary Gehring and Jing-Ke Weng, Chemistry Professors Yogesh Surendranath and Timothy Swager, and Mathematics Professor Alan Edelman, as well as an impressive cadre of science faculty and research staff from MIT's Center for Global Change Science and EAPS.

In national climate science news, a large high-temperature superconducting electromagnet was ramped up to a field strength of 20 tesla, the most powerful magnetic field of its kind. With the magnet technology successfully demonstrated, the collaboration between MIT's Plasma Science and Fusion Center and startup company Commonwealth Fusion Systems is on track to build the world's first fusion device that can create and confine a plasma that produces more energy than it consumes. That demonstration device, called SPARC, is targeted for completion in 2025. The advance

paves the way for the long-sought creation of practical, inexpensive, and carbon-free power plants.

In life sciences, Professor Emeritus Paul Schimmel PhD ’66 and his family committed $50 million to support the life sciences at MIT. They provided an initial gift of $25 million to establish the Schimmel Family Program for Life Sciences. This gift matches $25 million secured from other sources in support of the Department of Biology. The remaining $25 million from the Schimmel family supports the Schimmel Family Program in the form of matching funds as other gifts are secured over the next five years. Schimmel, who is the John D. and Catherine T. MacArthur Professor of Biochemistry and Biophysics Emeritus, is a lifelong supporter of the Institute in teaching, research, and philanthropy.

In international science news, David Julius ’77, a professor at the University of California at San Francisco, shared the 2021 Nobel Prize in Physiology or Medicine with Ardem Patapoutian, a professor at the Scripps Research Institute. Julius and Patapoutian won the prize for their discoveries in how the body senses touch and temperature with studies that identified a receptor in the nerve endings of skin that responds to heat.

In interplanetary science news, Richard Binzel, professor of planetary sciences in EAPS with a joint appointment in the Department of Aeronautics and Astronautics; Cathy Olkin ’88, PhD ’96; and others at the National Aeronautics and Space Administration (NASA) are leading a 12-year, 4-billion-mile mission to explore Jupiter’s Trojan asteroid belt. Named after the famous *Australopithecus* fossil “Lucy,” the NASA spacecraft will give scientists the first close-up view of the asteroids’ topography and chemical composition, which could offer insights into the chemistry of the early solar system, how the planets formed, and the origin of the organic molecules that enable life.

Diversity, Equity, and Inclusion

In September 2020 John Dozier, Institute community and equity officer (ICEO), and Tim Jamison, former associate provost and the Robert R. Taylor Professor of Chemistry, announced the development of an MIT-wide strategic action plan for diversity, equity, and inclusion (DEI) that provides both a baseline for measuring and assessing progress and a mechanism for accountability. Dozier, Jamison, and deputy ICEO Maryanne Kirkbride released the first draft of the DEI plan in March 2021. An updated version of the Institute-wide DEI action plan is scheduled to be released in August 2022.

In July 2021, Kuheli Dutt joined the school as the new assistant dean for DEI, one of six new assistant dean positions created across the Institute. In addition, in August 2021, Dean Nergis Mavalvala appointed two associate deans in the MIT School of Science—Jaqueline Lees and Rebecca Saxe—to work closely with Dutt.

In January 2022, Dutt issued the School of Science’s DEI action items report, which provides an overarching framework for DEI activities and initiatives across the school. Outlining more than 40 action items under 12 broad categories, this report lists new initiatives such as DEI grants for departmental leadership; DEI service fellowships; DEI quality of life grants for staff, students, and faculty; revisions of faculty search processes; and other initiatives. The action items report is consistent with the Institute-

level priorities of composition, belonging, and achievement and will serve as the school's blueprint for DEI for the next few years.

Computing Infrastructure

As the computing and data needs of MIT's research community continue to grow—both in their quantity and complexity—the Institute is launching a new effort to ensure that researchers have access to the advanced computing resources and data management services they need to do their best work.

At the core of this effort is the creation of the new Office of Research Computing and Data, to be led by Professor Peter Fisher, who will step down as head of the Department of Physics to serve as the office's inaugural director. The office, which formally opens in September 2022, will build on and replace the MIT Research Computing Project, an initiative supported by the Office of the Vice President for Research that contributed in recent years to improving the computing resources available to MIT researchers.

Life Sciences Centers

Anesthetic drugs act on the brain, but the field has barely explored the innovations that could come from integrating neuroscience into anesthesiology practice. A neuroscientific approach could reduce side effects, make drug delivery more precise, manage post-operative pain better, and usher in new treatments for sleep or methods for coma recovery. Emery N. Brown, Edward Hood Taplin Professor of Medical Engineering and Computational Neuroscience, performs neuroscience and statistical research in the Picower Institute for Learning and Memory and the Institute for Medical Engineering and Science and puts it into practice as an anesthesiologist at Massachusetts General Hospital (MGH). Now he is working on the development of a new research center focused on the study of anesthesiology.

The newly established K. Lisa Yang Center for Bionics will push forward the development and deployment of enabling technologies that communicate directly with the nervous system to mitigate a broad range of disabilities. The center's scientists, clinicians, and engineers will work together to create, test, and disseminate bionic technologies that integrate with the body and mind. The center will be led by Hugh Herr, professor of media arts and sciences at the MIT Media Lab, and Ed Boyden, Y. Eva Tan Professor of Neurotechnology, professor of biological engineering, professor of brain and cognitive sciences, professor of media arts and sciences, and an investigator at the McGovern Institute for Brain Research and the Howard Hughes Medical Institute. The center is funded by a $24 million gift to the McGovern Institute from philanthropist Lisa Yang, a former investment banker committed to advocacy for individuals with visible and invisible disabilities.

With an additional $24 million donation, Yang also established the K. Lisa Yang Integrative Computational Neuroscience Center to create advanced mathematical models and computational tools to synthesize the deluge of data across scales and advance our understanding of the brain and mental health. The center, led by Ila Fiete, professor of brain and cognitive sciences and associate investigator at the McGovern Institute, takes a collaborative approach to computational neuroscience, integrating

cutting-edge modeling techniques and data from MIT labs to explain brain function at every level, from the molecular to the behavioral.

In addition, a $38 million donation will fund the K. Lisa Yang Brain-Body Center. The center will be directed by Polina Anikeeva, professor of materials science and engineering and brain and cognitive sciences and associate investigator at the McGovern Institute. The center will focus on complex conditions and diseases affecting both the body and brain, with a goal of unearthing knowledge of biological mechanisms that will lead to promising therapeutic options.

Education

The School of Science has continued to expand educational and training opportunities for graduate students, collaborating with other schools and centers within the Institute to create innovative graduate programs in fields in which MIT shows great strength. These programs exemplify the Institute-wide goal of reducing boundaries between disciplines and allow MIT to attract the most talented students in their respective fields. The programs—including biophysics, computational and system biology, microbiology, molecular and cellular neuroscience, and statistics and data science—integrate educational resources across participating departments, build connections among faculty with shared interests, and create an educational and research community for training students.

In fall 2021, Whitehead Institute member and MIT professor Richard Young and Facundo Batista, associate director of the Ragon Institute of MGH, MIT, and Harvard and a resident expert on immunology and infectious disease, again offered the course 7.00 COVID-19, SARS-CoV-2 and the Pandemic with guest lecturers including Anthony Fauci, the longtime director of the National Institute of Allergy and Infectious Disease, and Rochelle Walensky, the director of the Centers for Disease Control. This course was first offered in fall 2020.

Education Awards

This year, Assistant Professor Kerstin Perez received the MIT Office of Graduate Education's Committed to Caring Award for dedicated advocacy and support to graduate students. Professor Angelika Amon was posthumously awarded the honor among the 15 recipients.

The Office of the Vice Chancellor and the Registrar's Office announced the 2022 Margaret MacVicar Faculty Fellows, including W. David McGee of EAPS and Matthew Shoulders of Chemistry, both associate professors in the School of Science. For nearly three decades, the MacVicar Faculty Fellows Program has recognized exemplary and sustained contributions to undergraduate education at MIT. The program was named after Margaret MacVicar, the first dean for undergraduate education and founder of the Undergraduate Research Opportunities Program.

Open Learning

Effective August 2021, Krishna Rajagopal, the William A.M. Burden Professor of Physics, stepped down as dean for digital learning, a position with oversight of Residential Education, MITx (edX now affiliated with 2U Inc.), the Digital Learning Lab, and MIT OpenCourseWare (OCW).

In April 2022, after serving millions of learners around the world for the last 20 years, MIT OCW launched "NextGen OCW"—its next-generation platform to allow for flexible growth, experimentation, and evolution in open learning.

Research

Molecular and Cellular Biology

For the first time, MIT researchers—including lead author graduate student Sarah Nyquist; former postdoctoral researcher Brittany Goods; Bonnie Berger, Simons Professor of Mathematics; and Alex K. Shalek, associate professor of chemistry—have performed a large-scale, high-resolution study of the cells in breast milk, allowing them to track how these cells change over time in nursing mothers. Such studies could eventually yield new ways to boost mothers' milk production or to improve the composition of infant formula.

Carly Schissel PhD '22, lead author on a recent *Nature Chemistry* paper; Brad Pentelute, professor of chemistry; and others at the MIT Schwarzman College of Computing have combined experimental chemistry with artificial intelligence to discover nontoxic, highly active peptides that can attach to a molecule that permeates the cell nucleus in order to modify the dystrophin gene. This allows for production of a key protein that is normally missing in people with Duchenne muscular dystrophy, a rare genetic disease usually diagnosed in boys.

MIT chemists led by Professor Mei Hong have discovered the structure of a protein believed to help bacteria become resistant to multiple antibiotics. Knowledge of this detailed structure may make it possible to design drugs that could block these transport proteins and help resensitize drug-resistant bacteria to existing antibiotics.

Gloria Choi, Mark Hyman Jr. Career Development Associate Professor in the Picower Institute and the Department of Brain and Cognitive Sciences (BCS), led a study in mice where changes to a mother's microbiome after infection and the consequent immune response involving the molecule IL-17a can both lead to autism-like behavioral symptoms in her offspring and can postnatally impact a newborn's immune system, potentially leading to an inflammatory response to infection later in life.

Using computer simulations, Yifeng Qi PhD '22 and Bin Zhang, Pfizer-Laubach Career Development Associate Professor of Chemistry and an associate member of the Broad Institute of Harvard and MIT, have discovered how nuclear bodies called nucleoli interact with chromosomes in the nucleus and how those interactions help the nucleoli exist as stable droplets within the nucleus.

Neurosciences

By studying how mice interpret ambiguous sensory cues, MIT scientists led by Associate Professor Michael Halassa found neurons that stop the brain from using unreliable information. The findings, funded by grants from the National Institute of Mental Health and published in *Nature*, could help researchers develop treatments for schizophrenia and related conditions whose symptoms may be at least partly due to affected individuals' inability to effectively gauge uncertainty.

Using an integrative modeling technique, MIT researchers compared dozens of machine learning algorithms to brain scans as part of an effort to better understand how the brain processes language, offering evidence that the human brain may use next-word prediction to drive language processing. The senior authors of the study are Nancy Kanwisher, Walter A. Rosenblith Professor of Cognitive Neuroscience and a member of the McGovern Institute and the Center for Brains, Minds, and Machines (CBMM); Joshua Tenenbaum, professor of computational cognitive science, a member of CBMM, and a member of the MIT Computer Science and Artificial Intelligence Laboratory; and Evelina Fedorenko, Frederick A. and Carole J. Middleton Career Development Associate Professor of Neuroscience and a member of the McGovern Institute.

A new study in the lab of Ann Graybiel, an MIT Institute Professor and member of the McGovern Institute, revealed a group of neurons in the brain's striatum that encodes information about the potential outcomes of different decisions. These cells become particularly active when a behavior leads to a different outcome than what was expected, which the researchers believe helps the brain adapt to changing circumstances.

Lead author Heather Kosakowski PhD '22 and Nancy Kanwisher have found regions of the infant visual cortex that show strong preferences for either faces, bodies, or scenes, just as they do in adults. These data in babies ranging in age from two to nine months push the picture of development, making babies' brains look more similar to adults in more ways and earlier than was understood, according to Rebecca Saxe, John W. Jarve Professor of Brain and Cognitive Sciences and member of the McGovern Institute.

Aging Brain

The Aging Brain Initiative was established in 2015 to support interdisciplinary research on Alzheimer's disease and other diseases of the aging brain. The initiative is spearheaded by Li-Huei Tsai, director of the Picower Institute, and Michael Sipser, former dean of science.

Li-Huei Tsai, Scarlett Barker PhD '21, and Ravikiran Raju, postdoctoral fellow and Boston Children's Hospital physician, have discovered a gene linked to cognitive resilience in the elderly. They discovered that environmental enrichment appears to activate the MEF2 protein, which controls a genetic program in the brain that promotes resilience to Alzheimer-related and age-related dementia declines.

In Down syndrome, the third copy of chromosome 21 causes a reorganization of the 3D configuration of the entire genome in a key cell type of the developing brain. The resulting disruptions of gene transcription and cell function are so similar to those seen

in cellular aging, or senescence, that scientists found they could use anti-senescence drugs to correct them in cell cultures. Led by Hiruy Meharena, a former senior Alana Fellow in the Alana Down Syndrome Center, the study establishes senescence as a potentially targetable mechanism for future treatment of Down syndrome.

In a *Proceedings of the National Academy of Sciences* (*PNAS*) study of mice, MIT researchers led by Guoping Feng—the James W. and Patricia T. Poitras Professor in Brain and Cognitive Sciences, a member of the Broad Institute of Harvard and MIT, and the associate director of the McGovern Institute—have identified a circuit in the anterior thalamus that is necessary for remembering how to navigate a maze. The researchers also found that this circuit is weakened in older mice, but enhancing its activity greatly improves their ability to run the maze correctly.

A study from MIT chemists led by Professor Mei Hong revealed how two types of tau proteins, known as 3R and 4R tau, mix together to form tangles. The researchers found that the tangles can recruit any tau protein in the brain in a nearly random way, and this feature may contribute to the prevalence of Alzheimer's disease.

Climate Science and Sustainability

Research led by Noelle Selin shows that global cancer risk from burning organic matter comes from unregulated chemicals created when polycyclic aromatic hydrocarbons (PAHs)—a class of pollutants known to cause lung cancer—react in the atmosphere. The researchers hope scientists and regulators will consider a broader class of compounds in evaluating cancer risk due to PAH exposure.

A new study by Kerry Emanuel, the Cecil and Ida Green Professor of Atmospheric Science, showed that North Atlantic hurricanes are increasing in frequency and intensity. Rather than relying on historical observations, which may have gaps, he performed climate modeling to reconstruct a continuous record of hurricane activity over the past 150 years from which to gauge trends.

MIT scientists working with Andrew Babbin, Cecil and Ida Green Career Development Professor in EAPS, have generated the most detailed, three-dimensional atlas of the world's largest oxygen-deficient zones (ODZs). Though they make up less than one percent of the ocean's total volume, ODZs are a significant source of nitrous oxide, a potent greenhouse gas. Their boundaries can also limit the extent of fisheries and marine ecosystems. The new atlas provides high-resolution maps of the two major, oxygen-starved bodies of water in the tropical Pacific Ocean.

Prochlorococcus are the smallest and most abundant photosynthesizing organisms on the planet, responsible for a large fraction of the world's oxygen production as they turn sunlight into energy. A study in *PNAS* led by Stephanie Dutkiewicz, senior research scientist in EAPS, and Christopher Follett showed that where *Prochlorococcus* live is not determined primarily by temperature, as previously thought, but in relationship to bacteria and a shared predator. These findings may help researchers hone predictions for where phytoplankton will migrate with climate change.

Atmospheric chemists led by Susan Solomon, Lee and Geraldine Martin Professor of Environmental Studies, have found that smoke from Australian wildfires set off chemical reactions in the stratosphere that contributed to the destruction of ozone, which shields the Earth from incoming ultraviolet radiation. The team's study appeared in *PNAS* and is the first to establish a chemical link between wildfire smoke and ozone depletion.

A new study by Jennifer Morris and researchers at the MIT Joint Program on the Science and Policy of Global Change and the Shell Scenarios Team indicates that without a globally coordinated mitigation effort to reduce greenhouse gas emissions, the planet's average surface temperature is projected to reach 2.8º C, much higher than the "well below 2º C" level to which the Paris Agreement aspires, but a lot lower than what many widely used "business-as-usual" scenarios project.

Awards and Honors

Faculty Awards and Honors

Renowned mathematician and quantum computing pioneer Peter W. Shor PhD '85 was the recipient of MIT's 2022–2023 James R. Killian Jr. Faculty Achievement Award, the highest honor the Institute faculty can bestow upon one of its members each academic year.

Despite increasing representation at MIT, female science and engineering faculty found biotech startups at a disproportionately lower rate than their male colleagues—according to research led by the MIT Future Founders Initiative: Professor Sangeeta Bhatia, President Emerita Susan Hockfield, and Professor Emerita Nancy Hopkins. Nine researchers were selected as 2021 finalists, including Polina Anikeeva, Laurie Boyer, Kristin Knouse, and Elly Nedivi.

Yilin Wang and Hong Wang PhD '19 were named winners of the 2022 Maryam Mirzakhani New Frontiers Prize, recognizing outstanding early-career women in mathematics.

Taylor Perron, professor of geology and associate department head for education in EAPS, was named a recipient of a 2021 MacArthur Fellowship.

Seven MIT scientists were named recipients of the National Institutes of Health High-Risk High-Reward research program. Four MIT researchers received New Innovator Awards, which recognize "unusually innovative research from early career investigators." They are Pulin Li, a member of the Whitehead Institute for Biomedical Research and an assistant professor in Biology; Seychelle Vos, Robert A. Swanson (1969) Career Development Professor of Life Sciences; Xiao Wang, Thomas D. and Virginia Cabot Assistant Professor of Chemistry and a member of the Broad Institute of MIT and Harvard; and Alison Wendlandt, Cecil and Ida Green Career Development Assistant Professor of Chemistry. The Transformative Research Award was given to Myriam Heiman, Latham Family Career Development Associate Professor of Neuroscience in the Department of Brain and Cognitive Sciences and an investigator in the Picower Institute, and Manolis Kellis, professor of Computer Science, associate member of the Broad Institute, and a principal investigator with MIT's Computer Science and Artificial Intelligence Laboratory. Polina Anikeeva received a Pioneer Award.

Assistant Professors Lindsay Case in the Department of Biology and Guangyu Robert Yang in BCS were named 2022 Searle Scholars, an award given annually to 15 outstanding US assistant professors who have high potential for ongoing innovative research contributions in medicine, chemistry, or the biological sciences.

In spring 2022, the National Academy of Sciences (NAS) elected three MIT professors as fellows of the academy: Angela Belcher, James Mason Crafts Professor of Biological Engineering and Materials Science and Engineering, member of the Koch Institute for Integrative Cancer Research, and head of the Department of Biological Engineering; Pablo Jarillo-Herrero, Cecil and Ida Green Professor of Physics; and Ronitt Rubinfeld, Edwin Sibley Webster Professor in the Department of Electrical Engineering and Computer Science. Professor Nancy Kanwisher received the 2022 NAS Award in the Neurosciences for her "pioneering research into the functional organization of the human brain."

In fall 2021, two MIT faculty members and four additional MIT affiliates were elected to the National Academy of Medicine.

The American Institute for Medical and Biological Engineering awarded its highest honor, the Pierre Galletti Award, to Professor Emery N. Brown.

Elchanan Mossel, professor of mathematics and member of the IDSS Statistics and Data Science Center, and Rosalind Picard were named fellows of the Association for Computing Machinery.

Five MIT faculty members were elected as fellows of the American Association for the Advancement of Science, including three in science: Mircea Dinca, the W. M. Keck Professor of Energy in the Department of Chemistry; Professor Guoping Feng; and David H. Shoemaker, senior research scientist at the MIT Kavli Institute for Astrophysics and Space Research.

George Lusztig, the Abdun-Nur Professor of Mathematics, was awarded the prestigious 2022 Wolf Prize in Mathematics for his work on geometric representation theory and algebraic groups.

Nobel Prize–winning theoretical physicist and author Frank Wilczek, Herman Feshbach Professor of Physics, has been awarded the 2022 Templeton Prize. This $1.3 million prize is awarded to individuals whose life's work embodies a fusion of science and spirituality.

MIT professors elected to the American Academy of Arts and Sciences were Michale S. Fee, Glen V. and Phyllis F. Dorflinger Professor and head of the Department of Brain and Cognitive Sciences; Ronald T. Raines, Roger and Georges Firmenich Professor of Natural Products Chemistry; and Professor Rebecca R. Saxe.

Wei Zhang, professor of mathematics; Jesse Thaler, professor of physics; and Tracey Slatyer, professor of physics, were named 2022 Simons Investigators in Mathematics, Physics, Astrophysics, and Computer Science.

Student Awards and Honors

Carina Letong Hong from Guangzhou, China, is a winner of the Rhodes Scholarship (China Constituency). As a Rhodes Scholar, she will pursue graduate studies in mathematics at Oxford University. At MIT, Hong is a junior double-majoring in mathematics and physics.

Thirteen MIT undergraduates, graduate students, and alumni were awarded Fulbright fellowships to pursue projects overseas in the 2022–2023 grant year. The Fulbright fellows include science majors Kylie Yui Dan ’22, An Jimenez ’21, Karna Morey ’22, and Daniel Zhang ’22.

For the second time in the history of the annual William Lowell Putnam Mathematical Competition, all five of the top spots in the contest, known as Putnam Fellows, came from MIT’s Department of Mathematics. Putnam Fellows include sophomore Edward Wan, junior Daniel G. Zhuseniors, and seniors Andrew Gu, Michael Ren, and Shengtong Zhang. Junior Dain Kim, who finished in the top 15, received the Elizabeth Lowell Putnam Prize.

Brain and Cognitive Sciences graduate student Fernanda De La Torre; Trang Luu ’18, SM ’20; and senior Syamantak Payra were recipients of the 2022 Paul and Daisy Soros Fellowships for New Americans.

Staff Rewards and Recognition

The School of Science Staff Excellence Awards programs acknowledge the dedication and hard work of our staff.

This year, the Infinite Mile Award winners included Christina Andujar, Physics; Monika Avello, Biology; David Orenstein, Picower Institute; Dennis Porche, Mathematics; Joshua Stone, Biology; Sierra Vallin, Brain and Cognitive Sciences; and Shannon Wagner, Chemistry.

The Infinite Expansion Awards were created in 2012 to highlight the contributions of postdoctoral scholars and research scientists or equivalents. This year’s winners included Héctor de Jesús-Cortés, Picower Institute; Harold Erbin, Laboratory for Nuclear Science; Megan Hill, Chemistry; Kevin Kuns, Kavli Institute; Xingcheng Lin, Chemistry; Alexandra Pike, Biology; Nora Shipp, Kavli Institute; and Jakob Voigts, McGovern Institute and BCS.

Personnel

The following faculty members were promoted to full professor: Joern Dunkel (Mathematics), Matthew Evans (Physics), Anna Frebel (Physics), Liang Fu (Physics), Aram Harrow (Physics), Adam Martin (Biology), and Matthew Shoulders (Chemistry).

The following faculty members were granted tenure: Gloria Choi (BCS), Nikta Fakhri (Physics), Greg Fournier (EAPS), Daniel Harlow (Physics), Gene-Wei Li (Biology), Michael McDonald (Physics), Gabriela Schlau-Cohen (Chemistry), Phiala Shanahan (Physics), and Omer Yilmaz (Biology).

The following faculty members were promoted to associate professor without tenure: Andrew Babbin (EAPS), Timothey Cronin (EAPS), Andrew Lawrie (Mathematics), Daniel Suess (Chemistry), Salvatore Vitale (Physics), and Yufei Zhao (Mathematics).

The following faculty members joined the School of Science as assistant professors: Siniša Hrvatin (Biology and Whitehead Institute), Sara Prescott (Biology), Alison Ringel (Biology and Ragon Institute), Francisco J. Sánchez-Rivera, PhD ’16 (Biology and Koch Institute), Nidhi Seethapathi (BCS and EECS), Hernandez Moura Silva (Biology and Ragon Institute), Yadira Soto-Feliciano, PhD ’16 (Biology and Koch Institute), Daniel Álvarez-Gavela (Mathematics), Soonwon Choi (Physics), Olivia Corradin (Biology), Kristin Knouse (Biology), Jeremy Hahn (Mathematics), Lina Necib, (Physics), Lisa Sauermann (Mathematics), Andrew Care Vanderberg (Physics), and Guangyu Robert Yang (BCS).

The following faculty members joined the School as full professors with tenure: Danna Freedman (Chemistry) and Arlene Fiore (EAPS).

Krishna Rajagopal, William A.M. Burden Professor of Physics, resigned his dean for digital learning position effective August 2021; Professor Cynthia Breazeal assumed this role effective February 2022. Former Broad Institute director Eric Lander resigned his Cabinet-level post as presidential science advisor to US president Joseph R. Biden and director of the White House Office of Science and Technology Policy. David Sabatini, professor of Biology, resigned from MIT. Richard Binzel retired in January 2022 and Kerry Emanuel retired in June 2022.

Nergis Mavalvala
Dean
Curtis and Kathleen Marble Professor of Astrophysics