

New Jersey Institute of Technology

FACULTY ACHIEVEMENT CELEBRATION

*Wednesday, September 28, 2022
3 p.m. Campus Center Atrium*

Program

MODERATOR

Atam Dhawan

Interim Provost and Senior Executive Vice President

STATE OF THE UNIVERSITY ADDRESS

Teik C. Lim

President

FACULTY AWARD ANNOUNCEMENTS

RECOGNITION OF NEWLY PROMOTED/TENURED FACULTY

Robert C. Cohen '83, '84, '87

Chair, NJIT Board of Trustees

Award Recipients

Excellence in Teaching Awards

EXCELLENCE IN LOWER DIVISION UNDERGRADUATE
INSTRUCTION BY TENURED/TENURE TRACK FACULTY:

Daniel Bunker
Biological Sciences

EXCELLENCE IN UPPER DIVISION UNDERGRADUATE
INSTRUCTION BY TENURED/TENURE TRACK FACULTY:

Kathleen McEnnis
Chemical and Materials Engineering

EXCELLENCE IN GRADUATE INSTRUCTION BY
TENURED/TENURE TRACK FACULTY:

Eric Fortune
Biological Sciences

EXCELLENCE IN LOWER DIVISION INSTRUCTION
BY A UNIVERSITY LECTURER, SENIOR UNIVERSITY
LECTURER AND/OR PROGRAM DIRECTOR

Jaskirat Sodhi
School of Applied Engineering and Technology

EXCELLENCE IN UPPER DIVISION INSTRUCTION
BY A UNIVERSITY LECTURER, SENIOR UNIVERSITY
LECTURER AND/OR PROGRAM DIRECTOR

Padma Natarajan
Mathematical Sciences

EXCELLENCE IN INSTRUCTION
BY AN ADJUNCT FACULTY:

John Vito D'Antonio-Bertagnolli
Biomedical Engineering

EXCELLENCE IN INSTRUCTION
BY TEACHING ASSISTANTS:

Ludvik Alkhoury
Electrical and Computer Engineering

OUTSTANDING CONTRIBUTION TO TEACHING AT NJIT
BY NON-INSTRUCTIONAL STAFF

Stephen George
Civil and Environmental Engineering

SPECIAL COMMENDATION FOR EXCELLENCE
IN TEACHING:

Methi Wecharatana
Civil and Environmental Engineering

Excellence in Research Awards from Schools and Colleges

Jing Li
Ying Wu College of Computing

David Rothenberg
College of Science and Liberal Arts

Raja Roy
Martin Tuchman School of Management

Murat Guvendiren
Newark College of Engineering

Overseers Excellence in Research Lifetime Achievement Award

Denis Blackmore (posthumous)
Mathematical Sciences

Overseers Excellence in Research Prize and Medal

Michel Boufadel
Civil and Environmental Engineering

Overseers Excellence in Service Award

Nancy Steffen-Fluhr
Murray Center for Women in Technology

Master Teachers Awards

Sanchoy Das
Newark College of Engineering

Junmin Shi
Martin Tuchman School of Management

Constance A. Murray Diversity Award

Lisa Axe
Chemical and Materials Engineering

Newly Promoted/Tenured Faculty

Promotion to Distinguished Professor

Tara Alvarez
Biomedical Engineering

Julie Ancis
Informatics

Kevin Belfield
Chemistry and Environmental Science

Guiling Wang
Computer Science

Promotion to Professor

Ji Meng Loh
Mathematical Sciences

Darius Sollohub
Hillier College of Architecture and Design

Promotion to Associate Professor with Tenure

Matthew Adams
Civil and Environmental Engineering

Matthew Bandelt
Civil and Environmental Engineering

Gennady Gor
Chemical and Materials Engineering

Murat Guvendiren
Chemical and Materials Engineering

Vivek Kumar
Biomedical Engineering

Samuel Lieber
School of Applied Engineering and Technology

Qing Liu
Electrical and Computer Engineering

Calista McRae
Humanities and Social Sciences

Benjamin Thomas
Physics

Promotion to Senior University Lecturer

Catherine Siemann
Humanities and Social Sciences

Excellence in Teaching Awards

EXCELLENCE IN LOWER DIVISION UNDERGRADUATE INSTRUCTION BY TENURED/TENURE TRACK FACULTY

Daniel Bunker

Biological Sciences

Since joining NJIT in 2008, Dr. Daniel Bunker has become an essential member of the Department of Biological Sciences, teaching required classes that provide the department's undergraduates with the disciplinary foundation they need to succeed in their chosen major. But Dr. Bunker's lecture courses and labs dealing with evolution and ecology offer students far more than core knowledge. To use Dr. Bunker's own terms, his courses empower students, from the very beginning of their time at NJIT, to activate their own education in order to grasp biological processes rather than memorize scientific facts. A proponent of direct research and analysis, Dr. Bunker is so committed to this type of "authentic" experience that he substantially revised the lab curriculum during the pandemic, innovating a digital equivalent of a traditional hands-on-in-the-lab-pedagogy. His support for his students is also evident in the academic and professional mentoring and advising he provides outside of the classroom and lab and in the thoughtful way that he responds to student feedback. He receives consistently high scores in his student evaluations and the commentary is studded with superlatives—not only about his excellence, but also about his fairness, his rigor and his caring attitude. Dr. Bunker also works to ensure that his students understand biology not only as a scientific discipline, but as a cultural lens for comprehending the contemporary world and this century's global challenges. Working with three other colleagues, he has established the Urban Ecology Lab to focus on sustainability and environmental justice as it trains the next generation of leaders in the biological sciences. For all of these reasons, Dr. Dan Bunker is truly deserving of this year's Excellence in Lower Division Undergraduate Instruction.

EXCELLENCE IN UPPER DIVISION UNDERGRADUATE INSTRUCTION BY TENURED/TENURE TRACK FACULTY

Kathleen McEnnis

Chemical and Materials Engineering

Dr. Kathleen McEnnis is relatively new to the NJIT community having served as an assistant professor in the Otto H. York Department of Chemical and Materials Engineering for five years. In that short time, Dr. McEnnis has developed into an outstanding teacher and we are pleased to acknowledge her excellence in upper division undergraduate instruction. Dr. McEnnis' accomplishments with respect to teaching are significant and include developing a mentoring program that matches students with faculty mentors, working with undergraduate students on research projects with special attention toward underrepresented groups in STEM disciplines, integrating active learning into her courses, and adapting courses for distance delivery. Dr. McEnnis emphasizes active learning methods in her classes so that her students experience the value and thrill of discovery, which is critical for success in STEM careers. Her colleagues note her love of teaching and her collaborative approach to course and curriculum design. These sentiments are echoed by her students, who appreciate Dr. McEnnis' use of innovative instructional methods in her courses, her commitment to their success and her dedication to teaching. In a short time, through her expertise and enthusiasm, Dr. McEnnis has made a significant impact on the NJIT community, and we are delighted to recognize her accomplishments as a teacher and mentor.

EXCELLENCE IN GRADUATE INSTRUCTION BY TENURED/TENURE TRACK FACULTY

Eric Fortune

Biological Sciences

Dr. Eric Fortune joined NJIT in 2012 as an associate professor of biological sciences. He has taught a wide range of undergraduate and graduate courses, and mentored many graduate students. Since 2018, he has been teaching Critical Thinking for Research in the Life Sciences (Biology 630), a core graduate course in Biological Sciences Ph.D. program. Dr. Fortune has crafted this course to help students better understand and communicate the context, importance and logic behind their own research interests. In this teaching philosophy, Dr. Fortune states that “My hope is that this course will help students to better express how elucidating truths in their corner of the biological world fits into our shared goal of better understanding the human experience.”

Dr. Fortune has continuously received excellent student evaluation scores with an overall average of 3.58/4.00 for his teaching effectiveness. His teaching strategies and humor are highly praised by his students and colleagues. Dr. Fortune is described as “an enthusiastic, creative and committed educator,” “a versatile instructor with ability to teach all biological topics” and “one of the most engaging teachers.” One of his students who is now a Ph.D. candidate at Cornell University writes: “Dr. Eric Fortune is the reason I am pursuing a Ph.D. in neuroscience. His enthusiasm for science, passion for mentoring, willingness to spend time teaching the basics, curiosity, and down to earth, yet authoritative personality all combine to create a wonderful mentor and teacher.” NJIT is pleased to recognize Dr. Fortune’s significant contributions to the Department of Biological Sciences and to NJIT with its 2022 award for Excellence in Teaching.

EXCELLENCE IN LOWER DIVISION UNDERGRADUATE INSTRUCTION BY A UNIVERSITY LECTURER, SENIOR UNIVERSITY LECTURER AND/OR PROGRAM DIRECTOR

Jaskirat Sodhi

School of Applied Engineering and Technology

Dr. Jaskirat Sodhi is being honored today for his remarkable teaching contribution to the Newark College of Engineering at NJIT, and in particular for his dedication to increasing the retention of incoming NCE first-year students. Dr. Sodhi graduated from NJIT with a Ph.D. degree in Mechanical Engineering in 2011. During his time as a student at our university, he received both an Outstanding Graduate Student Award from NCE and the highly selective Presidential Leadership Award. He then went on to work as an Assistant Professor in Mechanical Engineering at Lake Superior State University, Mich., before rejoining NJIT as a University Lecturer in 2014. Since 2020, he is a Senior University Lecturer in NCE.

Dr. Sodhi is described by his colleagues as an excellent instructor with extremely strong teaching credentials. He is also praised by his students who consistently rank his classes well above the college and university averages, which is particularly impressive considering that Dr. Sodhi teaches primarily introductory-level courses which usually tend to attract lower evaluation scores. Dr. Sodhi’s teaching effectiveness has been noticed on multiple occasions already, as he received the NCE Saul K. Fenster Innovation in Engineering Education Award in 2018 and the NCE Excellence in Teaching Award in 2021. Most importantly, Dr. Sodhi is an educator dedicated to improving the learning experience for his students. He is an active fellow of the Institute for Teaching Excellence at NJIT and has published several teaching-related articles describing and quantifying his effort to improve engineering student performance in first-year mathematics courses. Difficulties in first-year mathematics are the single most important reason for students to drop from NCE or have their graduation from NCE delayed by more than a year. Under the leadership of Dr. Sodhi during the last six years, new teaching principles were implemented in the engineering curriculum that led to a significant increase in first-year student performance and retention in NCE. This and his multiple other contributions as an adviser, mentor and administrator, set Dr. Sodhi as an example to follow for all educators at NJIT, and we are delighted to recognize his exceptional achievements through this Excellence in Teaching Award.

EXCELLENCE IN UPPER DIVISION INSTRUCTION BY A UNIVERSITY LECTURER,
SENIOR UNIVERSITY LECTURER AND/OR PROGRAM DIRECTOR

Padma Natarajan

Mathematical Sciences

Professor Natarajan has been working at NJIT for over a decade. During her time at our institution, she has shown amazing dedication to her teaching in upper division undergraduate and graduate classes. Professor Natarajan has exclusively taught the undergraduate course Math 333 Probability and Statistics and graduate course Math 661, Applied Statistics Math. She has taught 25 sections of these courses over the past five years, with an average enrollment of over 35 students per section. She has received sustained high student ratings, which indicate her great record of excellence in teaching as a Senior University Lecturer. The numbers speak for themselves. Professor Natarajan has received an overall average of 3.85 for her overall teaching effectiveness, including two sections with perfect scores of 4.0.

Her teaching philosophy, aside from communication ability, enthusiasm for teaching and ability to promote student participation, includes emphasizing statistical literacy and employing technology. Professor Natarajan takes a great lead in incorporating a good number of technology tools into her teaching, including Minitab, Mentimeter, Answergarden, Formative, Responseware, Plickers, Insight 360, Confusion Barometer and Socrative. She employs activities such as exit tickets and minute paper to obtain real-time assessment of student understanding and receive feedback, which has impressed her students. To note a few of their many great comments: “She continuously solicits anonymous feedback from students and does her best to accommodate each student so that they can succeed in the course.” “An amazing professor who genuinely cares about her students ... She goes above and beyond in every aspect. If every teacher was like her at NJIT our faculty would be deemed the best in the nation.” Another student said, “She is extremely proactive at spurring student participation and encourages all students to engage with the course content. She has been one of the most patient, caring and dedicated professors I have ever had in my undergraduate and graduate collegiate career.”

Professor Natarajan’s contributions to the University include quite a few teaching-related presentations, mainly through NJIT’s Institute for Teaching Excellence. She is an active member of the group and continuously presents her best practices in mathematics education and education in general. We are very pleased to recognize Professor Natarajan’s exceptional contributions with this Excellence in Teaching Award.

EXCELLENCE IN INSTRUCTION BY AN ADJUNCT FACULTY

John Vito D'Antonio-Bertagnolli

Biomedical Engineering

John Vito d'Antonio-Bertagnolli has been teaching as an Adjunct Instructor in the Department of Biomedical Engineering since Spring 2019. During this time, he has become one of the most appreciated educators in this department for his demonstrated excellence and passion for teaching, his advising of his students, his collaboration with other faculty for the development of a new curriculum for the department and his service to the department. Mr. d'Antonio-Bertagnolli has taught FED101 and BME210—a course which he designed with other colleagues for biomedical engineering students and which successfully investigates introductory computer science topics through the lens of biomedically-focused signal processing programming problems. In addition to being an adjunct professor in the BME department, Mr. d'Antonio-Bertagnolli is also a working professional. His teaching style has evolved to incorporate his experiences in industry. To do this, he brings in stories and data showing students what real-world applications of the course content look like and how to best get prepared for these experiences. Beyond his success in the classroom, Mr. d'Antonio-Bertagnolli also makes time to advise students. Many of them have attested that he is one of the best instructors that they have had at NJIT, and they continue to seek him out for advice and feedback. As one of his students comments: “Although I am only a first-year student at NJIT, Prof. Vito is one of the few professors that have made a profound impact on my academic career ... Professor Vito was able to make the class engaging by challenging us to think like future engineers every week ... Prof. Vito pushed us to think outside of the box ... However, the one quality of Prof. Vito's teaching that stood out is his sincere care for each one of his students.” For all these reasons, we are pleased to recognize John Vito d'Antonio-Bertagnolli with a 2022 award for Excellence in Teaching.

EXCELLENCE IN INSTRUCTION BY TEACHING ASSISTANTS

Ludvik Alkhoury

Electrical and Computer Engineering

Ludvik Alkhoury arrived at NJIT in 2018 to pursue a Ph.D. in Electrical Engineering. Ever since his arrival he has demonstrated a passion for teaching. He is being recognized this year for excellence in instruction as a Teaching Assistant.

Mr. Alkhoury has taught a large number of courses, including ECE321, MATH111 and FED101-GEN for which he was the primary lab instructor. He has also served as a course instructor for FED101-HS1: Fundamentals of Engineering Design for Pre-College Students. As an integral member of the teaching cohort, he has contributed to refinements and development of course content. This is best demonstrated in FED101-GEN where he has helped develop lectures, projects and exercises that, as expressed by one of his students, “most importantly, taught us how engineers think.” Students consistently praised his ability to communicate challenging concepts and tasks in a “humble” manner. This is demonstrated in the excellent outcomes his students were able to produce. Students state this is largely due to the way in which Mr. Alkhoury “creates a comfortable learning environment.” His classroom is “incredibly warm and welcoming.” This characteristic, coupled with the overwhelming enthusiasm he brings to the classroom, allowed for his students to feel comfortable and consequently excel in their work. In addition, his students praised him for his availability outside of the classroom despite having to keep up with his own studies. This is best described by his faculty colleagues: “He consistently went above and beyond the normal expectations of a TA and excelled in every aspect of the job. All the students, instructional staff and undergraduate graders unanimously praised his sincerity and dedication to the duties and also the care and passion he showed to help students succeed.”

His dedication and contributions to teaching continues beyond the classroom and lab. Mr. Alkhoury would collect and analyze data about teaching methods and their outcomes. This resulted in the publication of a series of education-related papers with his faculty colleagues. As noted by Professor and Dean of NCE Moshe Kam, “Mr. Alkhoury’s teaching experience was also translated into contributions to engineering education literature.”

In his time as a Teaching Assistant, he has provided his students with an excellent educational experience that extends well beyond the classroom. The university is pleased to recognize him for these achievements with its 2022 award for Excellence in Teaching.

OUTSTANDING CONTRIBUTION TO TEACHING AT NJIT BY NON-INSTRUCTIONAL STAFF

Stephen George

Civil and Environmental Engineering

Stephen George, associate director of undergraduate programs and academic advisor in the Department of Civil and Environmental Engineering, is being honored this year for providing “critical support” to the department’s academic infrastructure. An NJIT alumnus holding B.S. and M.S. degrees in civil engineering, Mr. George began his career in 2016 as CEE Director of Labs for Education where he installed and calibrated new laboratory equipment; instructed and assisted faculty, staff, and students in its proper use; and developed safety procedures. During the COVID-19 pandemic, he developed new laboratory safety protocols and created and filmed laboratory experiment videos for all CEE labs, allowing staff, faculty and students to work both safely and remotely. In addition, throughout his career, Mr. George has advised CEE student clubs, helping them in competitions and other projects.

In his new role as CEE Associate Director of Undergraduate Programs and Academic Advisor, Mr. George now oversees both undergraduate academic and career-related advisement; coordinates the undergraduate five-year co-op program; and coordinates the undergraduate research program—as well as assisting with student recruitment and outreach.

Students praise Mr. George, calling him “inspiring” and “caring” and “willing to go above and beyond” to help. “[He] was able to make NJIT feel like my second home,” says one student. He cares about both “our development as engineers and [as] young adults,” says another. He earns high praise from his colleagues as well: “Mr. George exemplifies the true spirit of a technological university: a passionate staff member with excellent contributions to our teaching and learning mission.”

In all these ways and many more, Stephen George has made significant contributions to the Department of Civil and Environmental Engineering and to NJIT as a whole—an achievement that the university is pleased to recognize with this 2022 award for Outstanding Contribution to Teaching.

SPECIAL COMMENDATION FOR EXCELLENCE IN TEACHING

Methi Wecharatana

Civil and Environmental Engineering

Dr. Methi Wecharatana has been a member of the NJIT faculty in the Department of Civil and Environmental Engineering for 40 years. During that time he has demonstrated excellence in teaching, course and program development, and mentorship that is punctuated by a lifelong commitment to his students and their intellectual and professional development. Dr. Wecharatana's accomplishments and awards include the Chi Epsilon's James Roban Award for teaching excellence in 1984, an NJIT Excellence in Teaching Award for upper division undergraduate instruction in 2006, NJIT Master Teacher Designation in 2008, and the Robert W. Van Houten Teaching Excellence Award from the NJIT Alumni Association in 2010. We are delighted to add this Special Commendation for Excellence in Teaching and Teaching-Related Activities to this list of impressive accomplishments.

The secret to Dr. Wecharatana's continued excellence in teaching can be found in his teaching philosophy which emphasizes a commitment to students that goes beyond transmission of knowledge to inspiring them to be successful engineers and productive citizens. By defining his success as a teacher in terms of his students' accomplishments, Dr. Wecharatana demonstrates a selfless, altruistic approach to teaching that captures the essence of the profession. One need only to review comments by his students to see his commitment to them and to their future success. Students value his encouragement, patience and ability to get them engaged in projects by preparing them for the challenge of learning new things. His colleagues note that Dr. Wecharatana exemplifies the spirit of NJIT as a researcher, practitioner and educator who makes a difference in the lives of others, and this award recognizes Dr. Wecharatana's contributions to teaching and to the university.

Overseers Excellence in Research Lifetime Achievement Award

Denis Blackmore (posthumous)

Mathematical Sciences

Admired as a “renaissance mathematician,” Dr. Denis Blackmore, professor of mathematical sciences, taught for a remarkable 50 years and was a founding member of NJIT’s Center for Applied Mathematics and Statistics. He passed away in April of this year.

He was a leading expert in dynamical systems, which use mathematics to measure and model the changes within a system over time. These models can be used in economic forecasting, medical diagnosis, environmental modeling, industrial equipment analysis and other applications.

Dr. Blackmore also played a significant role in helping the Department of Mathematical Sciences become one of the best-recognized applied mathematics departments in the U.S.

Blackmore’s work in both pure and applied mathematics, and his exploration of the boundary between them, was known both nationally and internationally. Colleagues noted his refusal to restrict himself to a single field. While his focus was in dynamical systems, he also made significant contributions to a number of other fields, including differential equations, differential geometry and topology, as well as more applied areas including fluid dynamics and granular media.

In his work “A perspective on vibration-induced size segregation of granular materials,” published in *Chemical Engineering Science* in 2002, Blackmore and his collaborators provided one of the first clearly formulated, quantitative explanations of the role that vibrations have on size segregation and compaction of granular matter. This type of work with granular materials can be useful in any industry that needs to pack objects into containers, such as the pharmaceutical, food and agricultural industries. The paper was an excellent example of interdisciplinary research between Blackmore and his engineering colleagues, illustrating the importance of mathematical approaches in understanding an applied problem of widespread, real-world significance.

His first-author work from 1997, “The sweep-envelope differential algorithm and its applications to NC machining verification,” published in *CAD Computer Aided Design*, is still widely cited and extensively used by researchers in the field.

Dr. Blackmore’s high research productivity is a good reflection of his diversity of projects: he authored or co-authored 134 peer-reviewed journal articles and more than 68 refereed conference papers, in addition to writing six books and 10 book chapters. His scholarship included editorial activities for numerous journals, including *Regular & Chaotic Dynamics*, *Mechanics Research Communications*, and the *Journal of Nonlinear Mathematical Physics*, among many others. He helped organize an extraordinary number of conferences and symposia.

His works are still widely read and used, sometimes two or more decades after their publication, illustrating the value and longevity of his research impact. Blackmore’s scholarship was well funded over the years by many federal research and training grants, which helped to support 16 students who carried out their Ph.D. research under his supervision. At NJIT, he was also a member of the Center for Manufacturing Systems and a member of the Particle Technology Center.

Dr. Blackmore contributed significantly to the overall success of NJIT. A popular instructor, he was recognized as a Master Teacher in 2017 and served NJIT in numerous capacities—most recently as president of the Faculty Senate.

Overseers Excellence in Research Prize and Medal

Michel Boufadel

Civil and Environmental Engineering

Dr. Michel Boufadel, a distinguished professor of civil and environmental engineering who specializes in environmental fluid mechanics and hydrology, is one of the world's chief experts on oil dispersion in the wake of major spills and a frequent consultant on clean-ups. These disasters include releases from the Exxon Valdez, a tanker that ran aground in Prince William Sound, the Deepwater Horizon, a burst well in the Gulf of Mexico, and the Enbridge pipeline in Michigan in 2010, which spewed more than a million gallons in the Kalamazoo River.

Through experimentation and modeling, his research tackles unanswered questions about the mechanics of spills and the effectiveness of remedial methods.

In a 600-ft.-long saltwater wave tank on the coast of New Jersey, he and a team of NJIT researchers conducted, for example, the largest-ever simulation of the Deepwater Horizon spill to determine more precisely where hundreds of thousands of gallons of oil dispersed following the drilling rig's explosion in the Gulf of Mexico in 2010. The initial phase of the experiment involved releasing several thousand gallons of oil from a one-inch pipe dragged along the bottom of the tank in order to reproduce ocean current conditions.

His team determined that the use of dispersants had a substantial impact on air quality in the region of the spill by reducing the amount of toxic compounds such as benzene that reached the surface of the ocean, thus protecting emergency workers on the scene from the full brunt of the pollution. Their study was published in the journal *Proceedings of the National Academy of Sciences (PNAS)*.

Over the past decade, Dr. Boufadel, director of NJIT's Center for Natural Resources, has served on six National Academy of Sciences committees on oil spills, as well as a committee of the Royal Society of Canada. He was recruited by the government of Ecuador to address oil spills in the Amazon forest in its litigation against Chevron. A paper that he and a colleague published in *NATURE Geoscience* in 2010 explained the reasons behind the persistence of the Exxon Valdez, and was relied upon in the U.S. Department of Justice case against Exxon Mobil. He has obtained \$13 million in funding from national and international agencies to pursue his research.

He is currently investigating the transport of dispersed droplets and sediment particles in rivers and their interaction, which leads to the formation of oil particle aggregates, as well as the impact of waves on oil spread.

His interest in fluid mechanics is not restricted to spills. In the early days of the COVID-19 pandemic, he and a team of environmental engineers and modelers studied the virus's pathways inside supermarkets. He and colleagues at NJIT, Princeton and Duke later developed a model that predicts where the disease will spread from an outbreak, in what patterns and how quickly. That paper was also published in *PNAS*.

More recently, Dr. Boufadel is developing a "Community Intrinsic Resilience Index" to evaluate a municipality or county's ability to prepare for, respond to and recover following disruptive events at various levels of severity. It looks at impacts on transportation, energy, health and socio-economics.

Overseers Excellence in Service Award

Nancy Steffen-Fluhr

Director, Murray Center for Women in Technology

The Board of Overseers has established an award that acknowledges a long record of extraordinary service to the university and the community. This honor is presented in recognition of an exceptional contribution that has had a lasting impact on the university and enhances the mission of NJIT. One award was given for 2022:

For her contributions to the university, the NJIT Board of Overseers is pleased to recognize Nancy Steffen-Fluhr, Director, Murray Center for Women in Technology.

Master Teachers Awards

Sanchoy Das

Newark College of Engineering

Junmin Shi

Martin Tuchman School of Management

The designation of Master Teacher is given both in recognition of past accomplishments as well as in anticipation of further contributions of Master Teachers to programs promoting teaching excellence within the NJIT community. A Master Teacher is expected to not only have a strong record of teaching students individually and in groups but also to be a leader in pedagogy, a mentor to faculty and a “teacher of teachers.”

For his contributions to the university, NJIT is pleased to recognize Professor Sanchoy Das, Mechanical and Industrial Engineering, Newark College of Engineering.

Also for his contributions to the university, NJIT is pleased to recognize Associate Professor Junmin Shi, Martin Tuchman School of Management.

Constance A. Murray Diversity Award

Lisa Axe

Chemical and Materials Engineering

Dr. Lisa Axe, this year's recipient of the Constance A. Murray Diversity Award, is an expert in making water safe from contaminants and a strong advocate for underrepresented students and faculty in engineering.

After earning a Ph.D. in environmental engineering from Illinois Institute of Technology in 1995, she joined NJIT as an assistant professor the same year, became a full professor in 2006 and was voted department chair of Chemical and Materials Engineering in 2017. She has a joint appointment with Civil and Environmental Engineering.

On the research front, she and her laboratory team develop treatment processes to convert traditional water filters and adsorbents into biologically-active filters that are rich in contaminant-degrading microbes. These processes involve adding microbial films to conventional filters in municipal water treatment plants. Axe's group collaborated with Mengyan Li, associate professor of chemistry and environmental science, to isolate which bacteria are responsible for degrading the unhealthy compounds.

Some of her primary targets are contaminants of emerging concern (CECs), pollutants that are being observed by, but are not yet regulated by, the U.S. Environmental Protection Agency.

"Wastewater treatment plants are not generally designed to treat CECs," says Dr. Axe. "We have taken granular activated carbon normally used for polishing water or removing organic matter in the treatment plant, and we've designed a cost-effective, natural and sustainable biologically active filter that effectively removes CECs derived from antibiotics, steroids, beta blockers and even pesticides like DEET."

Dr. Axe is concerned with more than just the safety of chemicals in our water—she gives equal effort to the safety and diversity of the entire NJIT community and the chemical engineering community at large. For many years, she has been a strong advocate for women and underrepresented minority students, faculty and staff, and has created initiatives to enhance institutional diversity and inclusion.

She has been a staunch supporter of best practices to enhance diversity in hiring and has overseen substantial increases in diversity hiring within her department. As department chair, she created a new diversity, equity and inclusion committee, where she established a student advisory board and an annual Newark College of Engineering DEI colloquium.

She led development of efforts to retain minority students, including an industrial advisory board mentor-mentee program led by Assistant Professor Kathleen McEnnis. She has also been proactive in mentoring women and underrepresented minority doctoral students, helping them secure responsible positions in industry, academia and government.

Dr. Axe served as co-principal investigator on the university's initial National Science Foundation-funded Advance Institutional Transformation grant to support and advance female faculty in science, technology, engineering and mathematical fields. She helped lead NJIT's work with Engage Engineering, a nationwide initiative that introduced classroom strategies to increase retention of undergraduate engineering students, particularly women. She was also active in the Project to Assess Climate in Engineering, a multi-site research effort to increase persistence and retention in engineering programs.

History of NJIT



The New Jersey Institute of Technology that we know today has a rich history with its beginnings developing from the industrial age. Like many of the port cities around the world, the Newark of the late 19th century was a thriving industrial center. Its factories churned out thread, metals, paints and leather goods. In Newark, Thomas Edison set the stage at his Ward Street factory for his later achievements, and Edison rival Edward Weston established the first factory in the United States for commercial production of dynamo electric machines.

On March 24, 1880, the Essex County assemblyman in the state legislature introduced “An Act to Provide for the Establishment of Schools of Industrial Education.” The Newark Board of Trade sponsored the bill. The act established three schools of industrial education: one in Newark, one in Trenton and one in Hoboken. The first Board of Trustees met July 1, 1884. The Newark Technical School opened Monday, February 9, 1885, with 88 students who attended despite a terrible snowstorm.

The first class, mostly evening students, attended classes in a rented building at 21 West Park Street. Soon the facility became inadequate to house an expanding student body. To meet the needs of the growing school, a second fundraiser—the institution’s first capital campaign—was launched to support the construction of a dedicated building for Newark Technical School. In 1886, under the leadership of the school’s dynamic first director, Dr. Charles A. Colton, the cornerstone was laid at the intersection of High Street and Summit Place for the three-story building later to be named Weston Hall in honor of the institution’s early benefactor. A laboratory building, later to be called Colton Hall, was added to the campus in 1913. Daniel Hodgdon served as the director of Newark Technical School from 1918 to 1920.

Under Dr. Allan R. Cullimore, who led the institution from 1920 to 1949, the modest Newark Technical School was

transformed into the Newark College of Engineering (NCE). Campbell Hall was erected in 1925. During the lean years of the Depression and World War II, only the former Newark Orphan Asylum, now Eberhardt Hall, was purchased and renovated by the college.

The postwar period was one of enormous activity during which President Cullimore—like today’s post-Cold War university presidents—challenged the college to turn “wartime thinking into peacetime thinking.”

In 1946, about 75% of the freshman class had served in the armed forces. Robert W. Van Houten was acting president of NJIT from 1947 until 1950 when the board of trustees named him president. Cullimore Hall was built in 1958 and two years later the old Weston Hall was razed and replaced with the current seven-story structure. Doctoral-level programs were introduced and six years later, in 1966, an 18-acre, four-building expansion was completed. William Hazell succeeded Dr. Van Houten as president of NJIT in 1970.

In 1973, with the addition of the New Jersey School of Architecture, the institution had evolved into a technological university, emphasizing a broad range of graduate and undergraduate degrees and dedication to significant research and public service. A stronger-than-ever Newark College of Engineering remained intact, but a new university name—New Jersey Institute of Technology—signified the institution’s expanded mission.

A broadened mission called for the creation of a residential campus. The opening of NJIT’s first dormitory, Redwood Hall, in 1979 began a period of steady growth that continues today.



Under the leadership of Saul K. Fenster, who served as president of NJIT from 1978 to 2002, four new schools were established at the university: the College of Science and Liberal Arts in 1982; the School of Management in 1988; Albert Dorman Honors College in 1995; and the College of Computing Sciences in 2001. During the administration of Robert A. Altenkirch, New Jersey School of Architecture was reconstituted as the College of Architecture and Design in 2008.

Under the leadership of Joel S. Bloom, NJIT completed the first phase of the Gateway Project in 2013, including the creation of Warren Street Village, a three-acre, mixed-use residential housing complex that added 600 beds to NJIT's existing inventory of residential housing.

The complex includes the Honors College Residence Hall and five duplex homes for NJIT's Greek organizations, as well as dining services, a convenience store and fitness center for the university community.

On April 13, 2017, more than 200 students, alumni, faculty, staff and friends of the university witnessed the official ribbon cutting of the renovated Central King Building, part of a campus transformation designed to enhance the student experience and solidify NJIT's position going forward as one of the nation's leading public polytechnic universities. On November 10, 2017, NJIT cut the ribbon for the 220,000-square-foot Wellness and Events Center.

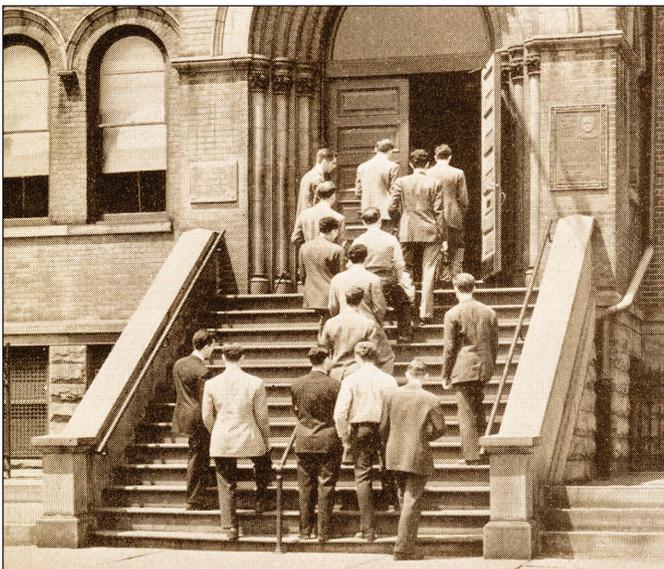
On December 11, 2017, NJIT officially opened its Makerspace, a large, well-equipped space for collaborative design and testing, featuring state-of-the-art machinery, including additive



manufacturing equipment; CNC machines; a water jet; machinery for laser cutting, grinding and milling; and a large assortment of tools, devices, and metrology and precision measurement appliances. The 23,000-square-foot space is used for classes, design projects, team efforts and preparation for national competitions in the area of vehicle and drone design.

On November 9, 2018, NJIT launched its newest school, the School of Applied Engineering and Technology (SAET), within the university's Newark College of Engineering. SAET encompasses NCE's engineering technology programs in two divisions (Electrical and Mechanical Engineering Technology Division and the Built Environment Division); the baccalaureate degree General Engineering program; and a division focused on Engineering Education practice and research. SAET serves about 1,000 NJIT students.

On December 5, 2019, NJIT had a ribbon-cutting ceremony for its Microfabrication Innovation Center (MIC). The MIC houses advanced equipment and a cleanroom environment that provides a state-of-the-art facility for the fabrication of micro- and nonoelectronic and microfluidic devices and sensors. These devices and sensors will transform technology across a range of areas and will accelerate work on smart devices. In the area of health care, for example, biomarker sensors may be developed that can communicate with medical information systems to support point-of-care diagnostics and therapeutic intervention. Along with the York Center for Environmental Engineering and the Life Sciences and Engineering Research Center, the MIC is an integral part of NJIT's strategic effort to produce translational research on microchip and microfluidic devices with applications not only in health care, but in environmental technologies and advanced manufacturing.



As New Jersey's public polytechnic university, New Jersey Institute of Technology (NJIT) has earned a reputation as one of the nation's preeminent STEM-focused educational and research institutions. The university consistently is ranked among the highest in the United States for return on investment (ROI) for its graduates and ranks No. 1 nationally for student upward economic mobility, according to *Forbes*. NJIT's economic impact on the State of New Jersey exceeds \$2.8 billion each year, supporting more than 17,370 jobs and generating employment income of \$956 million.

U.S. News & World Report ranks NJIT a Top 100 National University and among the Top 50 Public Universities in the nation in 2022, at number 46. Additionally, NJIT is ranked No. 14 overall in the United States by *Money* on its list of Best Colleges for 2022, and No. 10 for engineering majors.

Teik C. Lim, NJIT's newly installed ninth president, is an engineer, inventor and visionary educator who takes an innovator's approach to pedagogy. His plans to advance the university further include strengthening student success with more experiential, problem-focused academic programming, a heightened emphasis on "power" skills such as communication and collaboration on extended, multidisciplinary projects, and new opportunities to work directly with businesses via co-ops and internships and through the use of shared resources.

NJIT also has earned the distinction of being designated an "R1" research university by the Carnegie Classification®, which indicates the highest level of research activity. NJIT is one of only 146 universities nationally and just three in New Jersey to achieve this recognition.

With six colleges, 50 undergraduate degree programs, 68 graduate degree programs (including 20 programs leading to a Ph.D. degree in a professional discipline), and about 140 specialized laboratories, research centers and institutes, NJIT is home to more than 11,900 students and over 440 full-time and over 400 adjunct faculty members. This past fall, NJIT set records with its largest and most diverse student body ever, with 14% more first-year students than the previous year and the most female students, at 31% and Hispanic students, at 30% of the incoming class. The university maintains a student-to-faculty ratio of 15 to 1.

NJIT is a driving force behind a large number of technology- and innovation-based enterprises, as well as a wide range of business and industry public-private partnerships that have a significant impact on the economies of the state and the region. NJIT's New Jersey Innovation Institute (NJII) was established in 2014 to work directly with business, industry and government for economic development. Now in its eighth year of operation, NJII conducts more than \$80 million in

economic development activities annually. NJIT also is home to VentureLink, a business incubator and accelerator. NJIT currently has 179 unexpired U.S. patents and 34 pending U.S. non-provisional applications, three international applications and 21 provisional applications.

On June 30, 2020, NJIT unveiled its new strategic plan, *Building on a Strong Foundation—NJIT 2025*, which guides NJIT in contributing solutions to the grand challenges of the future and improving the quality of life today through four core tenets.

- **Education** – preparing diverse students for positions of leadership as professionals and as citizens through innovative curricula, committed faculty and expansive learning opportunities.
- **Research** – advancing knowledge to address issues of local and national importance with an emphasis on high-impact basic, applied and transdisciplinary scholarship.
- **Economic Development** – anticipating the needs of business, government and civic organizations to foster growth, innovation and entrepreneurship.
- **Engagement** – applying our expertise to build partnerships, serve our community and benefit society as a whole.

NJIT's commitment to its students ensures that they have a full spectrum of the highest-quality educational, social and infrastructural resources necessary to be successful both in and outside of the classroom. For this reason, the university continues to deliver on its program of faculty renewal and capital investment aimed at meeting the needs of our growing student population and at giving students the edge they need in today's demanding high-tech marketplace.

NJIT also makes significant contributions to the community through initiatives such as its \$1 billion Campus Gateway neighborhood redevelopment plan. Phase 1 was launched on April 25, 2018, which is helping to revitalize a 22-acre area adjacent to the university's campus. In August, the campus celebrated the opening of the eight-story, 167-unit Maple Hall, NJIT's modern, energy-efficient new residence hall.

NJIT also supports the community through its annual Day of Service, Alternative Spring Break and numerous other community engagement service offerings that benefit the City of Newark and the State of New Jersey. In 2020, 3,704 students contributed 67,032 hours at 310 nonprofit agencies, communities and schools.



University Heights • Newark, NJ 07102 • njit.edu