

FALL 2022

# NJIT

MAGAZINE



## AN ENGINEER TAKES FLIGHT

**NANOMATERIALS HOLD BIG PROMISE  
CREATIVE STUDENTS LEAD THE WAY  
FEMME PROGRAM BUILDS LOVE OF STEM**



## ENGINEERING THE FUTURE

It is an honor to write to you for the first time in *NJIT Magazine* as the president of this great polytechnic university. When I made the decision to come to NJIT, it was the people who drew me to this university, because our students, alumni, faculty, staff and supporters are truly extraordinary. They are talented and creative, hard-working and entrepreneurial, diverse and passionate about what they do. That inspires me, and this publication serves to both chronicle their achievements and keep them connected to one another and NJIT.

In this issue of *NJIT Magazine*, we shine a spotlight on women in engineering and the impact they have made on both our university and the world. Our cover story shares the incredible journey of Norma Clayton '81, who came to NJIT as a student in the Educational Opportunity Program, later became a senior executive at Boeing and was most recently inducted into the National Academy of Engineering. Norma is a remarkable person, and we are proud that our university's learning center — the Norma J. Clayton '81 Learning Center — bares her name. The second feature introduces an emerging leader among the next generation of women engineers. Kerri-lee Chintersingh recently joined the NJIT faculty, and serves as an assistant professor of chemical engineering and is a member of the Diversity, Equity and Inclusion Committee in the Otto H. York Department of Chemical and Materials Engineering. Feature three introduces Vishva Rana, an undergraduate in mechanical engineering and a Goldwater Scholar, as well as Class of 2022 graduate Jehan Shalabi, who is now an NSF Ph.D. Scholar at Purdue University in electrical engineering. Finally, our fourth feature focuses on our effort to grow the pipeline of women in engineering through NJIT's Pre-College FEMME Program, sharing the perspectives of program participants, students, graduates and program staff.

The need for more women in the field of engineering cannot be understated, because their perspectives and experiences are not adequately represented at present and that limits the capacity of engineering project teams to maximize creativity and to innovate. The women profiled in this issue of *NJIT Magazine* provide a glimpse into the future, and I am exceptionally proud to note that this fall's first-year class at NJIT has the largest female cohort in university history!

I hope you enjoy reading this issue, and I welcome your feedback. ■

Sincerely,

NJIT President Teik C. Lim

## NJIT MAGAZINE

Fall 2022

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On the Cover: A longtime Boeing executive, Norma Clayton was the U.S. aerospace representative for the International Organization for Standardization (ISO) Aerospace Global Quality System team, tasked with ensuring consistency in quality measurement and standards across the industry.

Cover photo: Courtesy of Boeing



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Photo: Courtesy of Boeing

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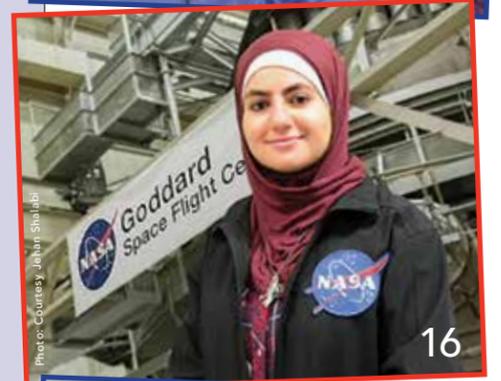


Photo: Courtesy Jehan Shalabi

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## HELPING DIVERSE VOICES DIVE INTO SHARK SCIENCE

**S**hark Week is can't-miss TV for nature lovers, but for NJIT Ph.D. student Amani Webber-Schultz, getting up-close-and-personal with the ocean's most famous apex predators is a year-round occupation — and a vehicle for social change.

Webber-Schultz is co-founder of the nonprofit Minorities in Shark Sciences (MISS), which is driving diversity in the field of marine science and is fully funding hands-on research experiences for gender minorities of color who want to pursue shark research as a career.

"We wanted to make the experience of being a person of color in a marine science field feel more comfortable, because it wasn't always comfortable for us before we started MISS," said Webber-Schultz, MISS

CFO, who's pursuing a Ph.D. in biology as she researches shark biomechanics and scale morphology at NJIT's FluidLoco Lab.

"Getting field experience in the marine sciences is very much pay-to-play, and it's very expensive to get your foot in the door. We're building a community for people, and part of our goal is making these vital experiences accessible by removing financial barriers," she added. "Money shouldn't be the reason someone can't study sharks for a living."

Things took off in 2020 when Webber-Schultz met three other black female marine biologists — Jasmin Graham, Jaida Elcock and Carlee Jackson — and the quartet started a club that quickly became a registered 501(c)(3).



Photo: Field School/Julia Wester

Two years in, MISS has grown to 400-plus members from more than 30 countries, expanding field research opportunities in Tampa, the Bahamas and South Africa and raising some \$265,000 to help aspiring researchers enter shark science. ■



## U.S. NEWS & WORLD REPORT RANKS NJIT IN THE TOP 100 NATIONALLY

**N**ew Jersey Institute of Technology continued its rise in the annual *U.S. News & World Report* rankings of colleges and universities, placing in the Top 100 National Universities for 2023. Now ranked No. 97 in the nation, NJIT has climbed 21 places in the last two years.

NJIT also is No. 42 among Top Public Colleges — rising four spots from last year — and is a top 100 national university for social mobility. In addition, NJIT made lists for Best Undergraduate Engineering Programs, Best Computer Science Programs, Best Business Programs and Best Colleges for Veterans.

*U.S. News* reviewed 1,500 institutions on 17 measures of academic quality and instructional resources, including graduation and retention rates, faculty resources, student selectivity, financial resources and expert opinion.

"Joining the Top 100 in *U.S. News* National Universities rankings and ranking No. 42 among public colleges are significant achievements and follow on the heels of being named the No. 1 public university in New Jersey and No. 28 in the nation by *Forbes*," said NJIT President Teik C. Lim. "What's most important is that the reason for NJIT's rise in the rankings and its reputational growth is the success of our students and alumni in their academic and professional career pursuits."

The Top 100 recognition came after *Money* ranked NJIT No. 14 nationally in its list of Best Colleges for 2022.

*Money* evaluated more than 600 institutions on 24 factors in three categories that surveys show are important to students: quality of education, affordability and alumni outcomes. ■

## ENGINEERING GRAD FINDS PASSION THROUGH PROJECTS

**T**echies call it the hands-on imperative — that the best learning is by doing — and it's something NJIT graduate Mark Pothen knows firsthand.

Pothen, who majored in mechanical engineering, worked part-time during his senior year as a business analyst for health care startup Axuall, which hired him full-time as an associate product manager after graduation in May.

Many engineers grow up as tinkerers, but not so with Pothen. His parents pushed him to study medicine and he planned to rebel by studying law, thinking that a degree in engineering would be a good safety net and patent law might be his niche.

Ultimately, though, he stumbled onto a friend's entrepreneurship lecture at NJIT's VentureLink, which sparked a passion for the logistics of building products.

This was around February of 2020, when Pothen was a sophomore. He and a friend decided to attempt a startup but didn't have an idea until a month later when the COVID-19 pandemic hit.

Instead of a company, though, they led a project to design, build and distribute personal protective equipment for local hospitals. Pothen's role began with supply chain management and morphed into scaling and optimizing operations



Photo: Courtesy of Mark Pothen

for distribution.

Pothen went on to serve as a commercialization project associate for NJIT's Mobile Medical Care Unit and, for his senior project, designed a scaffold-like electric lift to help wheelchair users get in and out of cars. Naturally, he advises Highlanders to build whatever they can. "For me, it was really valuable to get a grasp of what exactly is possible," Pothen said. ■



Photo: Courtesy of Charis Hwang

## 3 INTERNSHIPS AND A CO-OP LEAD TO PwC

**C**haris Hwang packed a lot into her four years studying business at New Jersey Institute of Technology, including three internships and a cooperative educational experience.

Her thick undergraduate resumé may explain why even before completing an accelerated master's program, she landed a job with global consulting firm PwC. In fact, her last internship, during the summer of 2021, was at PwC, where she found a calling.

"I was working on tasks with direct impact for our client and I was constantly communicating with different stakeholders throughout the project," said Hwang, who's from Somerset, N.J.

In early 2023, Hwang will become a technology consulting associate within PwC's Salesforce practice. First, though, she'll complete a master's in management at NJIT's Martin Tuchman School of Management. In an interview, Hwang reflects on her work experiences, mentors and life as a Dorman Honors Scholar.

Here's a brief Q&A that was held with Hwang.

**You had a co-op at a startup in Newark?** Yes, Riskcast Solutions, which sells

construction management software. I was a business development representative, doing market research and generating leads.

**And at Reckitt, you were part of a global corporation?**

I was a finance intern, working on a supply chain team on the hygiene side.

**What did you cherish most about Albert Dorman Honors College?**

I love the community that ADHC has given me.

**What did you learn from MTSM Dean Oya Tukel and Assistant Dean Melodi Guilbault?**

I learned from Dr. G that true leaders inspire and support others while still giving them agency. Dean Tukel taught me how to conduct myself in a room and ensure I am taken seriously as a woman in business. ■

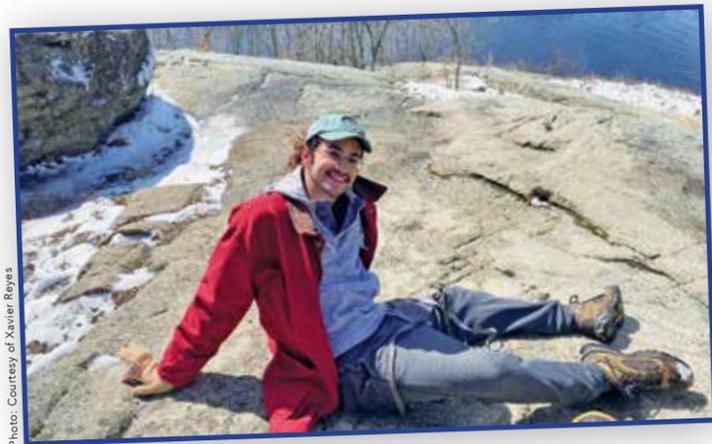


Photo: Courtesy of Xavier Reyes

## BIOLOGY STUDIES SPARK ORGANIC FARMING MISSION

For NJIT biology graduate Xavier Reyes, exchanging a lab coat for overalls to become an organic farmer is the best way he can move the needle on sustainability. Initially, the Albert Dorman Honors Scholar planned to pursue a career in

ecological research to help combat climate change and improve the

relationship between nature and humankind. He conducted research with some of NJIT's most prolific professors, like Phil Barden, studying how the size of an ecosystem affects its ability to hold biodiversity.

"If Phil Barden can't get you interested in research, then no one can. And that's when I realized it might not be for me," said Reyes, '21.

Reyes then explored, as he participated in an internship in Tennessee's Great Smoky Mountains with the nonprofit Discover Life in America. It was this

internship, ironically facilitated by Barden, where he experienced nature through constant immersion, and it was transformative.

"It was like a coming-of-age movie: Big city kid living in New York goes to Tennessee, finds nature, becomes amateur naturalist," joked Reyes.

With dirt under his fingernails, Reyes concluded that a life outside was for him. However, it wasn't until he took Maria Stanko's special topics class, "Food for a Hot Planet," that he realized that farming could bridge his studies with his passion for ecological symbiosis. Today he works at small-scale operation that fits his style: the 19-acre Cherry Grove Organic Farm in Princeton, N.J. ■



Photo: Courtesy of Pradnya Desai

## MICROSOFT HIRES GRAD PASSIONATE ABOUT SOCIAL DEVELOPMENT

At NJIT, computer science major Pradnya Desai earned awards and funding for work that combined technological invention with a desire to fuel social development.

All that hard work paid off after graduation in May with a job as a software engineer at Microsoft, working on network virtualization technologies.

Desai's undergraduate startup idea, Ad-Connect, won the Audience Choice Award at the 2022 TIE-NJ University Pitch Competition after earning a grant from the National Science Foundation's Innovation Corps program (I-Corps).

Ad-Connect aims to help children with ADHD develop social skills through a virtual reality application. Essentially, it's a multiplayer game for groups of two to three

who work as a team using easy-to-follow instructions. By engaging them in something they enjoy, Desai hopes to enhance their social development.

Based on her research, Desai shifted from using augmented reality to VR, as it blocks out external distractions — the bane of people with ADHD who have challenges with concentration and focus.

The shift allowed her concept to quickly progress as she explored practical applications while continuing to interview ADHD coaches, psychologists and parents who acted as advisors.

Early volunteer work with ADHD children inspired the Albert Dorman Honors Scholar to explore how to bring her idea

to life in a tech startup class taught by Senior University Lecturer Suresh Kumar at Ying Wu College of Computing. Kumar also encouraged her to apply for the I-Corps grant.

"Her intellectual curiosity and passion for positively affecting the real world have left an indelible mark for success with us," Kumar said. "You really cannot ask for more from a student." ■



Photo: NJIT Athletics

## NEW ASSISTANT COACH BRINGS 'BOUNDLESS ENTHUSIASM'

The latest addition to the NJIT women's basketball coaching staff, Assistant Coach Colleen Moriarty, hails from Saint Anselm College, where she spent six years in the same role.

During that period, the Manchester, N.H. college appeared five times in the Northeast-10 Conference Tournament, including twice in the NCAA Division II Women's Basketball Championship. The 2018-19 season culminated with the program's first-ever NCAA Division II East Region title and a trip to the Elite Eight.

At NJIT, Moriarty is one of three assistant coaches under Head Coach Mike Lane.

"Colleen has proven that she can recruit to an academic environment like the one here at NJIT, can bring the best out of her players and can prepare teams to compete every night," said Lane, now in his

fifth season at the helm. "Her boundless enthusiasm is what really sets her apart. It is so genuine."

Moriarty holds a bachelor's in marketing from UMass Dartmouth and a master of science in sport management from Southern New Hampshire University.

As a four-year member of the women's basketball team at UMass Dartmouth, Moriarty amassed 1,219 points and was named LEC Player of the Year in 2013 — the first in program history. After UMass, she played for the Brockton Lady Thunder, a semi-professional basketball team in Massachusetts.

As for NJIT, Moriarty said: "I am so honored and grateful to work with such a competitive and driven group of student-athletes and will continue to build on what they've started." ■

## MEN'S SOCCER RECRUITS GLOBALLY AND LOCALLY

NJIT men's soccer Head Coach Fernando Barboto welcomed 13 new players to the squad this fall.

The Highlanders come from as far away as Portugal, Spain, Italy and Canada and include seven from NJIT's home state of New Jersey. Here's a closer look at the international recruits.

- Andrea Campoli, a defender from Rome, attended Liceo Santa Rosa and played for the U.S. Viterbese, capturing the Primavera 3 Championship. He plans to major in business.
- Anthony Cruz, a center back from Montreal, attended Montverde Academy and played for Eture Sports. He plans to major in chemical engineering.
- Sergio Martinez Cubel, a midfielder from Sedavi, Spain, played for Valencia CF Academy, served as a team

captain of the u19 team in Spain and was named an Elite Athlete. He graduated with honors from Colegio Nuestra Señora del Socorro High School and intends to major in industrial engineering.

- Jose Del Valle, a forward from Madrid, Spain, transferred from Northwestern to pursue a master's in management. As a four-year member of the Northwestern men's soccer program, he appeared in 49 career matches, including 34 starts.
- Hugo Tavares, a midfielder from Porto, Portugal, came off a successful summer with the Canadian u20 team in the CONCACAF qualifiers. He played for FC Pacos de Ferreira, which placed fourth in the u15 National First Division. At NJIT, he intends to major in mechanical engineering. ■



Anthony Cruz



Sergio Martinez Cubel

Photos: NJIT Athletics



Photo: Courtesy of Ava Heuer's family



## AVA SIMONS HEUER '72, '74 A LEGACY BEYOND THE CLASSROOM

### AVA SIMONS HEUER '72, '74 DID NOT EXPECT TO FALL IN LOVE WITH TEACHING.

Being at the front of a university classroom was not what she envisioned when Ava enrolled in the Newark College of Engineering in 1968 to study engineering science. Having received both her bachelor's and master's degrees from NJIT, Ava spent over two decades as a successful project manager at AT&T Bell Laboratories, before realizing she might have another professional calling. That calling led her back to the NJIT campus in the early 2000s to serve as an instructor and adjunct faculty member in the engineering management program.

Ava served with distinction in this capacity at NJIT for nearly 20 years, teaching and mentoring countless graduate students. Sadly, Professor Heuer passed away in December 2021 following an extended illness. One of Ava's former students at NJIT recalled her with great respect: "[She] was an outstanding professor ... a prime example of how project management should be taught."

To commemorate Ava's dedication to NJIT's students, her family has established two endowed scholarships at the university through a generous gift from Ava's estate. The Ava Simons Heuer Scholarship in Mathematics will benefit undergraduate students pursuing degrees in mathematical sciences, and the Ava Simons Heuer Fellowship in Engineering Management will provide support for students pursuing master's degrees in engineering management. These two scholarship funds will serve as a lasting tribute to Ava's generous spirit and her decades of service to NJIT's engineering students.

**To learn more about Ava and the legacy she has created at NJIT, please visit "Donor Stories" at [njit.giftplans.org](http://njit.giftplans.org).**

**For further information on the 1881 Society or about how to include NJIT in your estate plans, please contact:**

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**Your legacy begins today.**



# RANKINGS AND RECOGNITION

**#14 NATIONALLY —  
BEST COLLEGES**

- Money

**R1 RESEARCH UNIVERSITY  
CARNEGIE CLASSIFICATION®**

**TOP 100 NATIONAL UNIVERSITY**

- U.S. News & World Report

**#11 BEST CAREER  
PLACEMENT AMONG PUBLIC  
COLLEGES AND UNIVERSITIES**

- The Princeton Review

**TOP 2% IN  
RETURN ON INVESTMENT**

- Payscale.com

**#1 IN NEW JERSEY,  
#14 NATIONALLY —  
EARLY-CAREER SALARIES,  
PUBLIC UNIVERSITIES**

- Forbes

**TOP 100 UNIVERSITIES  
NATIONALLY FOR  
MID-CAREER EARNINGS**

- Payscale.com

**TOP 100 PERFORMER  
ON SOCIAL MOBILITY**

- U.S. News & World Report

**BEST 388  
COLLEGES**

- The Princeton Review

**#33 BEST VALUE COLLEGE**

- The Princeton Review

**#90 USA  
UNIVERSITY RANKINGS**

- Quacquarelli Symonds



# An Engineer Takes Flight

BY  
TRACEY L.  
REGAN

As a child growing up in New Jersey, Norma Clayton '81 rode her bike from Orange to Newark Airport to watch large aircraft take off and land. She went on to become an executive in the aerospace industry, who helped develop and improve not only the commercial jets that had mesmerized her, but military aircraft, satellites, ground and weapons systems, avionics and cybersecurity systems.

This fall, she was inducted into the National Academy of Engineering for her successes in optimizing manufacturing processes, systems, tools and supply chains throughout the industry. She gives generously to her alma mater via scholarships, support for the Educational Opportunity Program and the Learning Center, recently renamed in her honor, to advance others' engineering ambitions.

## Your mother was a talent manager who assessed her children's strengths and assigned them individual roles within the home. What was your role?

I grew up in a single parent home where we learned to be very ingenious about solving problems. There were seven of us and everybody had a role. One sister and I were handy with tools. So, our job was to fix anything that broke. We did everything from basic plumbing to mechanical and electrical work and gardening. Those jobs for many of us turned into careers. For example, one sister's job was to read *The New York Times*, the Sunday *Star-Ledger* and the *Daily News*, and share what she learned. She became a journalist. Another sister was responsible for budgeting, shopping and paying bills. She became an accountant. These basic skills enabled me to solve complex problems. As an engineer, one of the greatest gifts you can achieve is learning how to solve problems through curiosity and intuition.

## How did NJIT guide your career?

I've always been a problem-solver, but I'm also a people person. My challenge was figuring out how to combine the two. Initially, I majored in architecture, but quickly realized I liked the challenge of engineering more. My mother encouraged me to acquire some business skills, believing firmly that you could not be a great engineer without them. She was right. NJIT was one of a few schools in the country that offered an industrial administration program, combining industrial engineering with business. This program gave me a strong foundation to launch my career and the building blocks which would lead me to increasing roles and responsibilities.

*Clayton was inducted into National Academy of Engineering in 2022 for her contributions to aerospace and manufacturing operations.*

Photo: Courtesy of Norma Clayton



## How did you gravitate toward aerospace?

I started my career in the automotive industry. GM hired me right out of college as a time-study analyst, studying how people work — specifically, to figure out how to increase productivity, improve product quality and reduce safety injuries. I was bored out of my mind. In those days, factory work was labor intensive and very repetitive. If your job was installing lighters, you did that job for eight hours a day. I then went to work for Pyrotronics: A Security Systems Company, designing and manufacturing commercial and residential security systems. Here too, the work was not very challenging. I wanted to work on something that would significantly impact society and my profession. Two years later, I got a call from a recruiter to interview with RCA Aerospace. The interview began with a video of a space shuttle. By the time it ended, I was ready to leave my job. I was blown away by what I saw. I said yes on the spot.

## Can you take us back to what you call your first "pivotal learning moment" at RCA?

My first really big assignment was to manufacture the first closed-circuit television cameras for the space shuttle Columbia. These cameras would provide NASA the first color photos from space. My job was to get them built, tested and delivered to the Kennedy Space Center for test flights. Twenty-four hours before I'd promised to deliver the first one, we took the camera out of the test chamber to clean it in a vapor bath filled with highly corrosive chemicals. I then received a phone call, which diverted my attention. When I returned, the entire camera (less the lenses) had disintegrated. I called my mom, bawling. She instructed me to own my mistake: "Tell the truth!" I did. I thought my boss would explode, but he didn't. He asked me if I could accelerate one of the other cameras in production, and when I said yes, he told me bluntly to get out

of his office, get back to work and get that camera to the Space Center. I worked the entire night and delivered on schedule. The photos were beautiful. When my boss asked me what I'd learned from this experience, I said, "I need to stay focused on what I'm doing and always have a Plan B," which I did in this case. He had no idea I had a second camera in the wings. As I turned to leave, he said, "By the way, Norma, great job."

## What was it like joining the aerospace industry at a time of massive restructuring?

Frankly, it was a great time to be in the aerospace industry. When I moved into management, RCA had just merged with GE. GE spun-off its satellite business to Martin Marietta. Martin Marietta then merged with Lockheed. I was involved in all of it. I found that the most complicated part of any merger is the supply chain. Each company has different procurement strategies, logistics, pricing, quality standards, contract terms and processes, and you have to bring these (systems) together so that the company and its customer win. Supply chains are where the majority of a company's money is spent; it can be upwards of 60 percent of every dollar of revenue generated. Managing supply chains, I had to understand the needs of each customer, then develop supply chain strategies — leveraging economies of scale, standardized test requirements, long-term contracting, discounts, etc. — to meet them.

## What was your mission as the U.S. aerospace representative for the International Organization for Standardization (ISO) Aerospace Global Quality System team?

The purpose of the Aerospace Quality Standard (AQS) was to ensure consistency

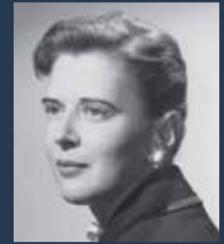
in quality measurement and standards across the industry. Thus, companies around the world are governed by a standard set of processes and standards proven to increase productivity, reduce risk and improve business performance, whether you are manufacturing foreign, domestic, commercial aviation or defense products. When McDonnell Douglas and Boeing merged, for example, each company had its own set of design, test and quality standards for the same parts, such as sensors. Adding complexity, they are often the same parts for both defense and commercial aviation products lines. However, the environments these components are exposed to are quite different, which causes them to have different price points and/or test requirements which can really drive cost.

## What was the five-year process like?

Working with global regulators was challenging, both tedious and enjoyable at the same time. We had to overcome many obstacles: differences in product design and test parameters, manufacturing processes, cultural differences and language barriers. In the end, we all wanted the same thing. Getting there took a lot of negotiating, and compromise on both sides.

## When asked by Boeing to optimize its workforce and how they develop talent, what was your approach?

Engineers are trained to approach problems from a systems perspective. In terms of human capital, I started by assessing the company's current versus future skills needs. Once I understood the needs and the gaps, the next step was to develop a strategy, framework and roadmap to address the problem. My team examined best practices from our competitors, academia and Fortune 500 companies like GE and Procter & Gamble that are known for having strong



## BEATRICE HICKS, member of the National Inventors Hall of Fame

Born in 1919, Beatrice Hicks '39 knew by the age of 13 that she wanted to be an engineer. She went on to become a pioneer in the field of environmental sensing devices, a business leader and an urgent advocate for women in engineering. At the helm of the New Jersey-based Newark Controls Inc., she designed and manufactured gas density monitors, called switches, to detect potentially dangerous leakages around electronic equipment in missiles, jets and Air Force instruments. Her sensors could anticipate equipment failures, locate them and gather information to correct them. Sturdy enough to withstand vibrations, shocks and extreme temperature variations, they were used in the ignition systems on the Saturn V rockets that launched the Apollo moon missions, on Boeing 707 aircraft in antenna couplers involved in long-range communications, and for monitoring nuclear weapons in storage, among other applications. She patented a molecular-density scanner and developed an industry model for quality control procedures. Hicks also broke barriers for women in engineering. She was the first woman engineer employed by Western Electric who went on to run her own company and design sensors that made long-range air flight and space travel safer. She was the founding president of the Society for Women Engineers in 1950 and the chair of the First International Conference of Women Engineers and Scientists in 1964. Of women in the field, she said, "Women having a high level of engineering ability must be recruited today if we are to avoid a tacit acceptance of lower and lower scientific and engineering standards tomorrow."



**VIRGINIA SULZBERGER,**  
member of the National  
Academy of Engineering

Virginia Sulzberger '62, '66 was the longtime director of engineering for the North American Electric Reliability Council (NERC), where she was instrumental in developing the first comprehensive planning standards for the high-voltage electric power transmission systems in North America, collectively known as the electrical grid. Based in Princeton, N.J., NERC, a not-for-profit international regulatory authority, is responsible for developing, adopting and enforcing reliability standards under U.S. law and assessing the reliability of the bulk power system, among other tasks. It was formed in the wake of the northeast blackout of 1965, which left more than 30 million people without power. Sulzberger was touted by NERC for working "tirelessly" with industry representatives on the development and eventual approval in 1997 of the first official planning standards, which replaced the organization's planning guides. The organization evolved over the years to adapt to new market conditions, such as the introduction of competition by non-utility generators and marketers and the threat of cyberattacks, among others. Prior to her work at NERC, she held engineering and planning positions at major corporations including Exxon Enterprises and PSE&G. In 2015, she was the first woman in the U.S. elected by the National Academy of Engineering into its Electric Power and Energy Systems Engineering section. She is also a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), and in 2014 received the IEEE Power & Energy Society's Lifetime Achievement Award.

talent and leadership. Given the complexity of the aerospace industry and our focus on innovation, it was clear we needed a culture of continuous learning for all employees, career development plans that provided continuous education, cross-functional development assignments and an orientation to global markets. Today, Boeing is a leader in the area of workforce development and well positioned to meet the needs of an ever-changing, technological world.

**Looking back, what were some peak experiences at NJIT?**

Joining the National Association of Black Engineers was a big thing for me, because I engaged with upperclassmen who were African American, and students from other countries. They had corporate relationships and internships with top companies like

Exxon-Mobil, Procter & Gamble, Johnson & Johnson and General Motors. They brought in great speakers, giving me a glimpse into what my life would be like when I entered industry, as well as a network to apply for internships. On the finance side, the Society for the Advancement of Management brought me a lot of professional friends on the business side, people who worked in accounting and budgeting, business operations and strategy. I also joined the drama club. My mom thought I was getting too technical (left brain). She often said, "You have no sense of humor; join the drama club." She encouraged me to develop my creative side (right brain). I found I really liked theater. I also wrote and edited stories for *The Vector*, which really rounded me out.

**What was it like to be one of the few women in**

**engineering in the 1980s?**

Honestly, I didn't give it much thought. I knew I was different — a minority and a female. I saw it as a badge of honor more so than an obstacle. What was really important to me was figuring out how to work with the men in my classes, specifically, finding out who they knew, what they knew and how to partner and learn from them. Because there were so few women in the college, my professors would often address the class as "gentlemen." I would always add, "and lady." Inclusion is still important for me in every aspect of life.

**What motivates you to give back to NJIT?**

It's the right thing to do. No one achieves success on their own. It's through the generosity of others that we are able to achieve our goals. When I entered NJIT, I

had several learning gaps. My high school didn't offer algebra 2 or trigonometry, which are pre-requisites for any engineering program. As an Educational Opportunity Program student, I was offered substantial resources and a nurturing environment. My counselor assigned me to one of the best math professors, Dr. Martin Katzen, whose deep knowledge of mathematics and creative teaching style allowed me to master algebra 2/trig and calculus at the same time. By the end of the semester, I was on my way. I promised him that if I ever had the chance to help another student, I would without hesitation. So that's what drives me. My hope is that others will do the same. ■



**ELLEN M. PAWLIKOWSKI,**  
four-star general in the  
U.S. Air Force

General Ellen M. Pawlikowski '78, was promoted in 2016 to the rank of four-star general in the U.S. Air Force, just the third woman in the branch's history to receive a fourth star. Shortly after, she took over the 80,000-person Air Force Materiel Command, whose stated mission was to "deliver and support agile war-winning capabilities." In addition to managing city-sized military bases, she directed the Air Force's investment in weaponry technologies: hypersonics — the ability to travel at extremely fast speeds of Mach 5 or 6; and directed energy — lasers and high-powered microwaves that allow the military to "get power on a target from a very long distance." She also worked on automated devices that can not only operate on their own and think, but also interact as a human wingman would in a plane. As she puts it, "We make sure everybody has food, but we're also deciding on the look of the jet my granddaughter's going to fly when she's 25 years old." During an earlier stint in the Office of the Secretary of Defense, she was responsible for chemical and biological counter proliferation during Desert Storm, "trying to figure out what we needed to do to protect against biological agents." As to being one of the few women in the field, she said, "For the most part, even though we like to say engineering is a male-dominated field, I can tell you that I've met very few engineers who cared whether you were a man or a woman. They just cared about your capabilities."

Norma J. Clayton '81, in red, cuts the ribbon on the learning center named in her honor.



Chintersingh in the lab at the Otto H. York Center for Environmental Engineering and Science.

# NANOMATERIALS HOLD BIG PROMISE

## New Engineering Professor Explores “Extreme” Materials

By Theta Pavis

**G**rowing up in rural Jamaica, Kerri-lee Chintersingh understood early on how access to resources and energy can impact society, but she didn't get interested in science until high school. Experiments with biofuels ended up changing the course of her life and led her to become the first person in her family to earn a Ph.D.

After a stellar career as a Ph.D. student at NJIT and post doctoral work at the Hopkins Extreme Materials Institute (Johns Hopkins University), Chintersingh is back at NJIT as an assistant professor of chemical and materials engineering. Her work explores

what happens when metal powders such as boron and aluminum are burned as fuel additives, potentially for use in rockets and explosives. She also designs new materials for energy and catalytic applications by exposing metals and metal alloys to high temperatures

and pressures. “If we understand how materials behave under extreme conditions then we can design new and better materials that can withstand these conditions,” she said.

Last summer, at the Department of Energy Argonne National Laboratory Advanced Photon Source, she explored methods to characterize what happens internally and externally as metal particle composites burn at temperatures exceeding 2000 Kelvin (over 3000 degrees Fahrenheit) using a customized optical system and synchrotron x-rays.

A first-generation college student, Chintersingh's research in nanomaterials and powder technology has the potential to improve aerospace propulsion, help minimize air pollution, create new hydrogen fuel sources and even fight chemical and

biological weapons of mass destruction.

She is also exploring machine learning to help mine the research data collected from experiments. “There are opportunities in machine learning to extract, understand and establish structure-function-property relationships in materials. You can bridge the gap across theoretical and computational models and experimental data and optimize materials for combustion, biomedical and structural applications ... it could even take me to designing new materials for cleaner energy opportunities.”

Her path to cutting-edge research was not always clear. The second of four daughters, Chintersingh recalls her early school days in Jamaica where teachers had to design lab experiments without much equipment; she

did not get her own laptop until she came to NJIT. She entered high school with vague ideas about medical school, but felt “defeated” after failing her first biology exam. While her teacher told her she probably shouldn't bother studying science, she ended up earning the third highest grade in the entire Caribbean for human and social biology.

In college, she started working on converting castor oil into a biodiesel as part of a science expo competition and became totally absorbed. She led her team to first place for her region and was recognized as the top presenter. “I was like, OK, it may not be med school at all. It may be trying to solve these large-scale, worldwide problems. And that's what brought me to chemical engineering,” she said.

At the University of Technology in Jamaica, she also did research on wastewater algae as a possible biodiesel source when she met Professor Norm Loney from NJIT. Loney was in Jamaica as an external examiner reviewing the university's curriculum when he saw Chintersingh working on her project late one night in the lab. A seed was planted when he asked her if she'd ever considered pursuing a Ph.D. After graduation, Chintersingh worked as a process control engineer for Alcoa Minerals of Jamaica, but by then she and Loney had begun corresponding and he succeeded in recruiting her to NJIT.

As a doctoral student, Chintersingh did research beyond her thesis while also serving as a mentor to other students. Edward Dreizen, a distinguished professor of chemical and materials engineering, and Chintersingh's Ph.D. adviser and mentor, said, “She was the default person and she helped train people, and she did it in a very good way. She's just a very impressive person.”

Chintersingh, who said she is guided by her faith, has a history of volunteering. For several years she has also been a teacher and mentor at the Church of the Oranges where she helped launch a mentorship program for girls 10-19 years old. She's volunteered to help the homeless and at the Food Bank of New Jersey. In addition, she's a member of the Diversity, Equity and Inclusion Committee in the Otto H. York Department of Chemical and Materials Engineering.

“I have a vested interest particularly for the future generations,” she said. “There is a large attrition rate for Black females in engineering — you might have two in undergrad, or five, but by grad school there may be only one and she'll likely go into industry and not academia — so the numbers are not that encouraging. We need to increase the numbers from the beginning. I think NJIT is on the path towards bridging this gap but there is still work to be done.”

While she acknowledges that being the “stand-alone Black female” at conferences and other spaces can be intimidating, Chintersingh says the support and mentors she has had over the years have made all the difference. “NJIT stands behind making higher education in STEM-related fields affordable for low-income minorities and the larger international community, and I am a proud product of this.” ■

# Creative Students LEAD THE WAY

By Tracey L. Regan & Nayib Moran

NJIT's student researchers never lack for inspiration or enterprise.

From complex issues close to home, to the challenges of outer space, there is seemingly no problem too intractable for students to tackle. Many do so with new thinking, imagination and creative analysis. Stirred by the frustrations of environmental justice activists, senior

Vishva Rana is developing a real-time air quality monitoring system for the Ironbound neighborhood of Newark. Eager to unveil distant planets, Jehan Shalabi, a recent alum and first-year Ph.D. student at Purdue University, is working on autonomous robots that will navigate dark, unmapped terrains. What connects them is the understanding that applied

research is the bridge from thinking to acting and the drive to find the mentors and labs on campus to make it happen.

## TRACKING AND TACKLING NEWARK AIR POLLUTION

As a first-year college student in a new city, Vishva Rana '23 quickly became attuned to the world outside her classroom walls. Then a paper on urban sustainability for a first-year English class led her to environmental justice campaigns waged by residents of Newark's Ironbound neighborhood. Their ire was trained on pollution spewed by a city incinerator and the continual stream of diesel trucks slicing through the heart of their community. "The problems were so obvious and large-scale, but people seemed powerless to change them. Many of their mitigation proposals were shot down," recounts Rana.

By sophomore year, the mechanical engineering major had joined the fight, winning a \$2,000 "Moonshot" award from the Albert Dorman Honors College for her proposal to develop a real-time air quality monitoring system for the neighborhood. The system consists of sensors, connected to small computers with Wi-Fi capability, that capture and transmit data to an online database and then display it on a heat map, which uses color coding to indicate real-time levels of pollution at different locations in the neighborhood.

After taking a year to develop research skills in Professor Jay Meegoda's environmental engineering lab, Rana

spent this past summer working on a prototype with William Lutz, director of commercialization and co-director of VentureLink@NJIT. Her goal is to give residents and policymakers access to clear, precise air quality information anywhere in the community.

Her sensors monitor what is known in regulatory language as particulate matter 2.5. (PM2.5), tiny particles of soot emitted by combustion engines that are two and a half microns or less in width. The devices can be powered by any building service and connected to a web app or phone app interface displaying the heat map, thus accessible to the public.

"I focus on PM2.5 because it's the most abundant pollutant in the city and bad for lung health in particular. A quarter of children in Newark develop asthma at a young age and many studies suggest they are linked," notes Rana, a mechanical engineering major who is minoring in innovation and entrepreneurship.

The state Department of Environmental Protection currently monitors PM2.5, among other pollutants, in the city, but from a single monitor.

"Without constant field testing from dispersed monitors, it's hard to pinpoint the particular spots where you have high levels

of air pollution, determine the sources and then develop specific solutions," she notes. "All of this technology is so intertwined with policy and I've become really interested in that side of it. In the Ironbound, it is essential to give organizers, who are often women and people of color, the power to monitor and design their own communities."

Monitors placed on heavily trafficked roads would measure the amount of pollution emitted by diesel trucks, for example, allowing the community to see which routes are most polluted and divert some traffic away from them. Knowing exactly how much pollution the county trash incinerator is discharging near homes and schools would strengthen arguments for better emission controls.

"Going forward, we should design truck routes, for example, that won't adversely affect residential areas, that accommodate the existing infrastructure," she argues.

Rana presented her prototype at the 2022 Summer Research and Innovation Symposium, hosted by NJIT's Undergraduate Research and Innovation Program, but so far has only conducted beta tests around different parts of campus and in her own neighborhood in Nutley, N.J. She has, however, presented the idea to people in the Ironbound in brief interactions on the street.

Vishva Rana presents her air quality monitoring system at the summer Highlander Foundry Program.

Photo: Deric Raymond



“She took the customer engagement piece so seriously,” said Lutz, an adviser, along with Vatsal Shah, ’08, ’09, ’15, an adjunct professor of civil and environmental engineering and the current president of the NJIT Alumni Association. “She went down to a coffee shop in the Ironbound and was handing out flyers asking people for feedback about what they think about air quality and her technology, engaging the people who she would most like to help.”

The next step is to build and implement more sensors and design enclosures for them, with input from residents and other stakeholders. She’s hoping to work this year with the Ironbound Community Corporation, a nonprofit organization advocating for community justice in the

Newark neighborhood, to locate places to install her monitors.

“I can’t just stick them up. I’ll need to find private businesses that are willing to host sensors,” she explains.

Rana, who is a Goldwater Scholar, is exploring ways to scale up and commercialize her technology for use in other industrial neighborhoods lacking access to precise air quality information, as well as to polluters themselves. She began by presenting the system in the Highlander Foundry Program at VentureLink@NJIT, a 12-week startup incubator.

“I spoke to people in logistics and transportation, including the owner of a shipping startup at the port, and found that companies are interested in tracking their

own emissions,” she recounts.

“I think there is a sense that more regulations are coming, and so private companies want to know how much pollution they’re emitting. They could place a sensor on their trucks, for example, or along their travel routes.”

The current president of the student Entrepreneurs Society, her career goal is to obtain a Ph.D. in mechanical engineering and conduct research on urban sustainability and smart cities.

“I definitely see myself working in sustainability as a researcher, or building systems and improving upon previous systems to create these sustainable environments.” ■

## NAVIGATING THE UNKNOWN

An aspiring astronaut, Jehan Shalabi ’22, hopes to one day illuminate dark worlds in deep space, unlocking the riddles of mysterious features and perhaps lifeforms on distant planets for Earth dwellers back home.

“I’m just really curious about what’s out there and want to use my electrical engineering background to advance space missions to find out,” says Shalabi, a first-year Ph.D. student in Purdue University’s electrodynamics group who is supported by a National Science Foundation graduate research fellowship. She enthuses about the current Dragonfly mission to Titan in search of what NASA calls “the building blocks of life” in the moon’s dense, organic atmosphere and hydrocarbon lakes.

“This mission may give us insights into how the earth was formed. How chemistry can then become biology in particular circumstances,” she says. “I also want to do something big, to make a major impact.”

At 20, she’s the youngest member of a Purdue team designing thermal sensors that will help autonomous robots navigate unmapped terrains, delving into craters, maneuvering around rocks and through dust, in total darkness. They work by detecting an object’s heat in infrared wavelengths and use that data to create an image. In a project funded by DARPA, her team is trying to improve upon the technology by solving thermal imaging’s “ghosting” effect, its tendency to hide surface detail and texture under a spectral glow. “It’s going to involve fundamental physics and applied optics,” she notes.

“Their use would not be limited to space exploration,” she adds. “Cameras that use visible light would not help a robot navigate in a dark forest either. My goal is to create sensors for a variety of applications operating at night.”

Shalabi’s journey to space exploration is

itself an impressive mission that began with an early fascination with aeronautics. By 17, she had already interned at NASA’s Goddard Space Flight Center, where she helped engineers assess the risk of using existing component parts, including propulsion systems and solar array drive assemblies, in new designs and upcoming missions.

The next year, she took part in NASA’s L’SPACE Mission Concept Academy Summer Program, where the group’s conceptual task was to land a rover on the surface of the Northeast Syrtis region of Mars to explore the composition of diverse, water-containing minerals. Understanding them, it was proposed, could provide evidence about the minerals’ formation and environmental chemical changes on the planet, while also helping to prepare explorers for long-duration missions on Mars by giving them the ability to utilize the planet’s resources.

Last summer and extending into the fall, she was an intern at the MIT Summer Research Program, where she worked in the Robust Robotics Group on an autonomous vehicle path-planning system that coordinated data-sharing between a drone and a ground vehicle to extend the ground robot’s sensing range and determine the shortest routes in unmapped terrains, avoiding dead ends.

“Autonomous navigation is so complex. Moving a robot from one place to another involves algorithms and machine learning. At times, I felt a little over my head, but I stayed in the lab until one in the morning and soaked up so much knowledge, also just by listening.”

As a Ronald E. McNair Scholar at NJIT, she worked her senior year with Nirwan Ansari, a distinguished professor of electrical engineering, on drone-assisted mobile networking, in which drones act as flying base stations and carry small cellular antennas to improve mobile network performance.

“This was my first major research project and led to my interest in robotics,” she said, adding “Dr. (Durga) Misra, (chair of the Department of Electrical and Computer

Engineering), also gave me a lot of emotional support that year and Dr. Lorna Ronald at the Honors College really helped me improve my writing in session after session of writing applications.”

With her eyes on space, Shalabi is now also focused on a vehicle closer to home — her own Toyota RAV4. Her team is currently outfitting it with technology for autonomous navigation: a PANDA controller under the steering wheel to operate it remotely from a laptop and thermal sensing cameras to help it detect obstacles. While Zubin Jacob, the Elmore Associate Professor of Electrical and Computer Engineering at Purdue and head of her lab, is in the process of purchasing a car for the project, “I offered mine in the interim. I didn’t want to wait,” she notes, adding that it’s already taken a quick spin on campus.

Aiding her academic success, Shalabi brings a driving thirst for knowledge and fearlessness to all her endeavors. At Passaic County Community College, where she enrolled as a freshman at 16, she was the only woman in her class majoring in electrical engineering. “It didn’t make a difference to me, but it might to other young women. If you’re the only one like you in class, it might be difficult to put your opinion out there,” she notes. That said, she prides herself on mentoring other women, taking part in panels on STEM and open houses at NJIT to encourage women to take up electrical engineering and other scientific pursuits.

“A lot of women think electrical engineers are people who fix power lines or make circuit boards. But if they could be made aware of how much you can do with the field, it would change minds. I think it’s important to introduce it to girls at a young age,” she said. “It’s also good to see representation. I chose electrical engineering after attending an open house at NJIT, where a woman — a Muslim woman — spoke.”

The sixth of 11 children in a Palestinian-American family, Shalabi notes, “I’m proud to be a role model for others, especially in my community.” ■



Jehan Shalabi interned at NASA’s Goddard Space Flight Center.

Photo: Courtesy of Jehan Shalabi



# FEMME

## Program Builds Love of

# STEM

By  
Tracey L.  
Regan

“I saw a video of turtles getting stuck in plastic six-pack tops, so I thought — save the turtles, save the environment,” the young inventor said of her creation, which was on display this past August in Faculty Memorial Hall as part of NJIT’s pre-college FEMME program.

The four-week summer program immerses girls in grades four through 10 in a range of hands-on engineering projects that teach principles, design and everyday applications, while also boosting their math, communications and computer science skills. Each cohort focuses on a separate area of the field, such as environmental, biomedical and chemical engineering, coding and robotics, to name a few. The girls get to look inside research labs on campus to see science in the making.

At FEMME’s founding in 1981, the goal was to increase the number of women in engineering by piquing their interest and bolstering their confidence before high school, when many girls’ interest in technical fields began to drop off.

“But following that, the thinking was that ninth grade is too late, so the program added a fourth-grade cohort. And then, to prevent losing girls in the interim, we added the grades in between,” explained Suzanne Berliner-Heyman, the former director of program operations and outreach at NJIT’s Center for Pre-College Programs.

This past summer, 112 girls from dozens of towns and cities, including Newark, Short Hills and East Brunswick, took part in the program.

“We want students from all demographics

to have real, live STEM experiences,” said Jacqueline Cusack, the center’s executive director.

In the universe of summer experiences for girls, the FEMME program is so singular and well-regarded that many participants return year after year.

“We really go into depth with these topics and learn a lot of other skills, like math and communication, that will allow you to use engineering in a real situation,” said Mia Garcia, a rising ninth-grader who, despite moving to Atlanta, returned this past summer for the program. “In our biomedical unit this past year, we didn’t just watch a video about blood circulating, but dissected a sheep’s heart and built a prosthetic hand. All of this really helps you absorb information.”

She added, “The other kids are really into the topic like you are. In school classes, maybe one or two are, but a lot of the others are doing the minimum. Everybody here is putting in their all — it’s easy to learn when you’re surrounded by people like that.”

In distinguishing them from FEMME, her mother, Alejandra Amador Garcia, noted that while STEM programs naturally focus on science and math, they often leave “a weakness in written and spoken communications. It’s a sad gap that leaves the students struggling to frame their ideas and share their work with others.”

Many of the summer teaching assistants are themselves alumni of NJIT’s pre-college programs. Ashley Talwar, a freshman at Duke University who studied mechanical engineering as a sixth-grader in the Pre-Engineering Program, said she was excited

back then to delve into STEM areas outside of what was taught in school.

“I was always really interested in science and math as a kid, and I wanted hands-on experiences that summer. I was eager to step back into those shoes as a TA and bond with the fourth grade FEMME girls, who viewed me as an older sister, and see their eyes light up in joy as they realized that they can grasp any concept, if they put their mind to it,” she said.

“It was incredible to see the girls bond with one another and push each other to explore new ideas, but also to see their individual personalities shine through and grow. Also, while there has been a lot of progress in closing the gender gap in STEM areas, we need to keep emphasizing it and ensuring more young girls are not being deterred by stereotypes and thus cultivate their interests in discovery and innovation in STEM.” ■

Adwoa Asa-Awuku was in the audience as her daughter, eighth-grader Afua Anyadike, talked about the history of meals.



**As a rising fifth-grader, Caroline Olson designed a drink holder with far-reaching ambitions. Composed of foil and cardboard, her device uses existing materials that are inexpensive, close-to-hand and recyclable. It’s also turtle-friendly.**

Top Left photos: Fourth-graders present projects that focus on the environment, including Caroline Olson’s turtle-friendly drink holder.

Top Right photos: Eighth-graders Mia Garcia (left), Lilith Roman (middle) and Mofoluwa Olagadeyo (right) present their biomedical engineering project on the last day of the FEMME program. From left: Roman, Garcia and Olagadeyo after their presentation.

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## 1970s

**CHARLES M. FORMAN '72** serves as president of the New Jersey Bankruptcy Lawyers Foundation. The foundation received the William J. Brennan, Jr. Citation for Justice from Legal Services of New Jersey (LSNJ) for providing emergency funds that support LSNJ's clients through challenging times. He is a member of the Board of Overseers.

**CHARLES E. LARSEN '73** board member of Femasys Inc. since 2015 has been appointed to the role of non-executive chair. Femasys is a biomedical company focused on women's health through next generation advancements, including minimally invasive technologies for reproductive health. Larsen serves as the managing director of Accuitive Medical Ventures LLC and vice chairman of The Innovation Factory. He is an angel investor.

**STEVEN E. FORSHAY '76** is semi-retired. He was most recently the senior vice president, Advanced Technology Group at Dolby Laboratories.

**JAMES M. KOCIS '77** founder of Hudson Street Ventures, has received investment from Bipsync, a leading financial technology provider of research management software. Hudson Street Ventures is a private investment firm deploying long-term, permanent capital. He is also the founder and chief executive officer of Burgiss, a financial technologies and data provider to the private capital industry.

**GEN. ELLEN M. PAWLIKOWSKI (U.S. AIR FORCE, RETIRED) '78, '13 HON** joined the board of directors of RPM International Inc. RPM International owns subsidiaries that are world leaders in specialty coatings, sealants, building materials and related services. Pawlikowski was also appointed to the board of directors at Velo3D Inc., a leading metal additive manufacturing technology company for mission-critical parts.

## 1980s

**JEFFREY J. MILANAİK '80** was featured on the ROI-Influencers Real Estate list (2022). He is the principal, Bridge Industrial LLC.

**NORMA J. CLAYTON '81** was elected as a new member by the National Academy of Engineering (NAE). She is part of a cohort of national and international members, and co-vice chair of the NJIT Board of Trustees.

**GERARD P. FITAMANT '82** was promoted to senior associate at Langan Engineering & Environmental Services.

**STEPHEN C. BETTS '83, M.S. '86** was one of four William Paterson University business professors who received the prestigious Bright Idea Award, sponsored by the Stillman School of Business at Seton Hall University. The large-scale social entrepreneurship model proposed by the professors may lead to innovation in addressing global water resource sustainability. Betts is professor of management, marketing and professional sales.

**ROBERT C. COHEN '83, M.S. '84, M.S. '87** was featured on the ROI-Influencers Executives: New Jersey list (2022). He is the president, Digital, Robotics and Enabling Technologies at Stryker, and chair of the NJIT Board of Trustees.

**DARRYL P. RILEY '83** was appointed to the newly created position of chief sustainability officer at Hostess Brands Inc. In his new role, he will expand the company's capabilities to develop and execute strategies to drive its environmental, social and governance objectives and initiatives. He most recently served as senior vice president, Quality, Food Safety and R&D.

**JOHN F. LARKIN '84** head of impact investments at Avenue Capital Group, was selected as the designated appointee to the board of directors of Silver Sustainable Solutions Corp.

**PAUL SOMLO '85** is enjoying his 20th year of retirement after a career at Hewlett-Packard in Loveland, Colo.

**GOWTON T. ACHAIBAR '86** was appointed president and chief executive officer for ADS-TEC Energy. ADS-TEC is a global leader in battery-buffered, ultrafast charging technology.

**YING WU M.S. '88, '16 HON** was appointed independent director of BEST Inc. BEST is a leading integrated smart supply chain solutions and logistics services provider in China.

**ALBERT ROQUE '89** was one of four finalists for the police chief position for the city of Walla Walla, Wash. He has worked in law enforcement since 2003 and is currently the chief deputy for the Washington County Sheriff's Office in Hillsboro, Ore.

## 1990s

**DAVID A. CLARK '90** was promoted to vice president at CP Engineers. He is a licensed professional who leads the company's Commercial and Industrial Services Group. CP Engineers is a multi-discipline engineering firm based in Sparta, N.J.

**SCOTT A. SACCAL '90, M.S. '91** joined Cambrex Corporation as vice president, head of Information Technology. Based in East Rutherford, N.J., Cambrex is a leading global contract development and manufacturing organization that provides drug substance, drug product and analytical services across the entire drug lifecycle. Previously, he was executive director, Global Franchise Marketing IT at Merck.

**VIVIANNE J. ARENCIBIA '91** will speak at the 2022 International Society for Pharmaceutical Engineering's (ISPE) session, Building a Quality Organization.

## PROFILE

## JENNIFER HENSLEY '15

## Strategic Planning for Immunotherapy



Photo: Courtesy of Jennifer Hensley

Jennifer Hensley, who majored in chemical engineering at NJIT and now works for Merck helping determine long-term strategies for cancer immunotherapy drugs, knows how important it is to give back. As the keynote speaker at NJIT's fall convocation, she urged students to consider the world around them.

"You are becoming part of the Newark community. It's important to leave a positive impact on the surrounding communities by taking advantage of volunteer opportunities and prioritizing diversity and inclusion, whether it's through on-campus efforts or supporting local organizations. Find an organization you are passionate about and make a difference during your time here," she added.

Hensley was a star defender on the women's soccer team at NJIT — among the best who ever played for NJIT. She started all 76 games the team played in her four-year career and was selected as "Defensive Player of the Year" among the D1 Independents. She was also nominated as the NCAA "Woman of the Year" for the Independents and was NJIT's recipient of the New Jersey Association of Intercollegiate Athletics for Women "Woman of the Year" award.

Off the field she took her studies and

volunteer work equally seriously. Hensley was an active member of the American Institute of Chemical Engineers (AIChE), the Society of Women Engineers and the Albert Dorman Honors College, and volunteered with organizations such as the Children's Heart Foundation and Bubbles for Autism. Through participation at the NJIT career fair and AIChE, she connected with L'Oréal and Merck for summer internships. While at L'Oréal, her internship focused on lean manufacturing of cosmetics at the Franklin, N.J. plant. The following summer, she completed an internship at Merck in pharmaceutical commercialization, modeling solid dosage tablet properties at the West Point site in Pennsylvania.

After graduation, Hensley accepted a position in Merck's Leadership Development Program, completing three one-year assignments within the manufacturing division. These roles encompassed different technical operations in vaccines, biologics and women's health manufacturing in both U.S.-based and international positions. Following the leadership program, she supported the technical transfer of biologic manufacturing processes and new drug filing applications with both the Food and Drug Administration and international

regulatory bodies. While working at Merck, she completed an MBA in strategy and leadership at Indiana University's Kelley School of Business in 2022.

Hensley currently works as a product manager at Merck in the value chain management organization. Her responsibilities include 3-10-year strategic planning for KEYTRUDA®, a \$17.2 billion selling immunotherapy cancer treatment approved for 19 different types of cancer. She leads an integrated team of colleagues across a global manufacturing network in the U.S., Europe and Asia, and executes supply chain design and optimization, risk management and end-to-end product oversight. Aside from her day-to-day responsibilities, she has taken part in the NJIT Chemical and Materials Engineering mentoring program and the women's soccer team, and has led recruiting at NJIT for Merck.

"While the curricula may be demanding, being at NJIT means you will be supported wholeheartedly by the professors, advisors and staff who are here to help you get the most out of your time at NJIT," she said at convocation. "They want you to succeed and are here to help you prepare for the future, whether that is working in industry or continuing your education after graduation." ■

Arencibia is vice president of Global Quality Systems and Compliance at Moderna Therapeutics Inc. Prior to joining Moderna, Arencibia led her own consulting company, and has held a variety of leadership positions at Novartis AG, most recently as global head of External Engagement for Group Quality.

**ROBERT M. DILLON '91** is a serial entrepreneur who plans to open a whiskey distillery called Dismal Harmony in Morristown, N.J. He serves as senior vice president, Connected Radio, Xperi Holding Corp. He received his MBA degree from Columbia University and has several patents.

**ANTHONY RUSSO '91** was featured on the ROI-Influencers Associations & Organizations list (2022). He is the president of the Commerce and Industry Association of N.J.

**MONEESH ARORA '92** is the new chief executive officer at UniFocus, a leading workforce management platform. Recently, he served as chief executive officer at Med-Legal LLC and was the chief service (operating) officer at Paycor (NASDAQ: PYCR).

**FRANCISCO A. RUELA '92** joined InfoTran Engineers & Architects, P.C. as a senior vice president/principal architect in July 2022. He formerly served as president at SYSTRA A+E.

**SEN. PAUL A. SARLO '92, M.S. '95** was featured on the ROI-Influencers Elected & Appointed Government Officials list (2022).

**JOSHUA J. BENNETT '93** was promoted to vice president, Offshore Wind at Dominion Energy.

**NIMISH J. AMIN '94H** announced his candidacy for the Bernards Township Board of Education (N.J.) election taking place in November 2022. He is an assistant

general counsel at Johnson & Johnson.

**JAY R. FENNIMORE '94** has turned his love of video games into starting J2Games.com LLC, a video game company with three New Jersey locations.

**VENKATANARAYANA KRISHNAMOORTHY '94** is one of two new board members on ACORD, a global standards-setting body for the insurance industry. Krishnamoorthy is the chief technology officer at Hamilton Insurance Group.

**MICHAEL F. EDWARDS M.S. '95, MMBA '01** was appointed chief executive officer of MedMinder Systems Inc. Based in Needham, Mass. MedMinder is the leading end-to-end pharmacy, medication adherence and connected care solution for elderly and polypharmacy patients. Before joining MedMinder, Edwards was chief commercial officer at Truveris and held several executive roles at Optum that included president, commercial markets at OptumRx.

**SIEGFRIED G. MUELLER M.S. '95** is chief executive officer at Analytical Science and Technologies Group Inc., which purchased the former *New Jersey Herald* site in Newton, N.J. for \$1.8 million. Analytical Science and Technologies consults and builds equipment for the food and beverage industry, semiconductors manufacturers, medical and pharmaceutical companies, and the military.

**ADNAN M. PASHA M.S. '95** was promoted to senior associate at Langan Engineering & Environmental Services.

**WIWAT KAMOLPORNWIJIT M.S. '96, '00 PH.D.** was one of 120 top-tier artists selected to be part of the Smithsonian Craft Show, an annual event that recognizes the new pursuits of contemporary craft artists in their mastery of innovative design, fabrication and use

of unusual materials. He transforms mixed materials into wearable art.

**DEVENDRA K. MEHTA '96** was recently appointed chief information officer at People First Federal Credit Union. Most recently, he served as chief information officer/chief security officer at Stone Clinical Laboratories and head of information technology at New York eHealth Collaborative.

**ANDREW R. ALICANDRI M.ARCH. '97, M.S. '97** was promoted to principal from project manager at LS3P Associates Ltd.

**KALPESH G. KAPADIA M.S. '97** is chief executive officer and co-founder of Deserve, which is part of a group of angel investors in Zero Hash. Zero Hash is a crypto services startup that recently raised \$105 million. Deserve also recently launched the Deserve Commercial Credit Card Platform, designed to help companies create credit and charge cards for their customers.

**MARTIN PIETRUCHA PH.D., PE, F.ASCE, F.ITE, '97** retired as professor emeritus of civil engineering from the Department of Civil and Environmental Engineering at the Pennsylvania State University after 31 years. While at Penn State, Pietrucha was director of the Science, Technology, and Society Program. He also directed the university's Thomas D. Larson Pennsylvania Transportation Institute.

**PHILLIP SCOTT '98**, the former director of engineering for the City of Newark, was interviewed about his career by *The Vector*.

**ABHISHEK VERMA '98** joined Intercell-Virtual Mentor Network's leadership team as chief marketing officer. He has two decades of industry experience and has led marketing teams at Star TV, Sony Entertainment Television and

## PROFILE

## PETIA MOROZOV '91

### New Design Magazine Launched by NJIT Alumni



New Jersey was built by design. It's a strange and complicated place – flawed and often misunderstood. *DENSE*, a new magazine launched by a group of mostly NJIT alumni, tells the Garden State's story through a critical lens. Design, in the eyes of *DENSE*, is a tool for change in a state that needs plenty of it.

"The project came from a desire to get people curious about what design can do and to activate their inner designers," said Petia Morozov, co-founder of the magazine and a practicing architect, who graduated NJIT in 1991. She is executive director of the magazine's parent nonprofit, DesignShed, which hosts Montclair Design Week. "At the heart of this change-making design are these powerful stories."

*DENSE* is unconventional. As a beautifully designed print product with a digital platform, its subject matter leans into the complexity of the state. Most design publishing tends to focus on the luxury aspect of design and fails to mirror the real-world conversations around designing for environmental equity and social justice.

*DENSE*, on the other hand, is mission-driven, with storytelling at the core. The magazine covers important design topics impacting places like N.J. Such was the case for the first issue, published in late 2021,

which centered on the New Jersey Turnpike, a vital transit corridor that historically has been at the heart of countless and ongoing political conflict.

"N.J. gets short shrift. It's one of America's punching bags," said Gretchen Von Koenig, an editor of *DENSE*, industrial design historian and fellow NJIT alumna, '15. "We're glad to be a punching bag, but we have unique design considerations as a center for industry and manufacturing. What do you want your built environment to look like? Who built it? For whom?"

"There are these extreme 'mosts' in N.J.," said Morozov. "We have the most superfund sites, and the highest mortality among African American mothers. The density is not just dense demographically, but dense in a lot of conditions. We are interested in pulling people in to sit with that complexity."

Contributors represent a wide range of disciplines, including Gabrielle Esperdy, interim dean of NJIT's Hillier College of Architecture and Design (HCAD) and professor of architectural theory and history, former faculty member Brian McGrath, who taught at the school until 1990, and Dalal Elsheikh, vehicle designer at Ford and graduate of Hillier College's Industrial Design program.

That many of the editors and contributors to *DENSE* are current or former students and faculty of NJIT's HCAD is no coincidence. The school is at the center of N.J.'s architecture and design community.

"NJIT students bring a lot of willingness and energy to understand design and to find their place in it," said Morozov. "Having one of the more equitable demographics for a design school has made for a much more street smart and curious designer. I continue to root for that kind of designer. It just so happens to be my alma mater, but I feel there's a real energy that I think we have that's unique to the N.Y./N.J. school system at large."

"NJIT was the locus of my curiosity training," said Von Koenig, who studied industrial design and theater arts while an undergraduate at NJIT. She also taught at NJIT for five years. "It fostered in me an approach to understand design through critical lenses. I consider NJIT my intellectual home." ■

- Rory Pasquariello

From left: Lune Ames, Gretchen Von Koenig, Andrew Harrison, Petia Morozov

Discovery Channel. Intercell is an ed-tech startup changing the way students experience professional mentoring services. The company is backed by marquee investors, including actor Sonu Sood.

#### MICHAEL E. STALHAMER

**M.S. '99** was appointed president of Pleco Therapeutics. Pleco Therapeutics is a specialty biopharmaceutical company developing novel treatments designed to detoxify the cancer promoting cellular micro-environment. Previously, he was vice president, Regulatory Affairs & Product Development at STI Pharma.

#### VERONICA M. VANTERPOOL

**M.S. '99** was appointed deputy administrator of the Federal Transit Administration. She has served as senior advisor in the FTA Office of the Administrator since August 2021.

#### KIM V. VIERHEILIG '99H, M.S. '00

was appointed president of Buildings and Facilities at STV, a leader in engineering, architectural, planning and programming, and construction management services. She is also a member of the NJIT Board of Overseers.

#### 2000s

#### LEROY J. JONES M.S. '00

was featured on the ROI-Influencers Consultant list (2022). He is the principal founder, 1868 Public Affairs.

#### SAMUEL J. LAMONTANARO '00

was named director of engineering at Aufgang Architects LLC.

**NASEED GIFTED '01** recently launched a Kickstarter fundraiser, "Bringing Wakanda to Newark," which will help expand the STEAM programs as part of Khem Fest. Founded by Gifted, Khem Fest is an annual gathering that seeks to put the spotlight on Black comic

book creators. Gifted is the vice principal at Science Park High School in Newark.

**PUNEET TANDON M.S. '01** is the co-founder and chief operating officer at Artivatic.AI, a global risk and decision-making platform that automates human decisions in insurance and healthcare sectors, empowering them through artificial intelligence. The company is based in Bengaluru, India and Rehoboth Beach, Del.

#### SATISH CHAMYVELUMANI

**M.S. '02** was named as chief executive officer of the Compostable Division at Yash Pakka. He brings more than 20 years of experience in the product, packaging and food industry. Based in India, Yash Pakka aims to contribute toward a cleaner planet by providing compostable packaging solutions.

#### TIMOTHY W. MAY '02, M.S. '05

wrote an article for enterprisetalk.com on "Five Ways to Harness Technology for Optimal Project Efficiency." He is the chief technology officer and co-founder at Sitetracker.

**JOSEPH MELE '03** has joined MidAtlantic Engineering Partners as part of the company's growth initiative for northern New Jersey and an expansion of services in New York. He will be opening and managing a new office.

#### BHARATH "RAM" RAMAMOORTHY

**M.ARCH '03, MSCE '04** was elected as the 2022 president of the American Institute of Architects - Central New Jersey Section. He is a registered architect in New Jersey with over 20 years of experience. He is currently an associate vice president and senior program manager at AECOM.

**HIRAL R. SHAH '03** was interviewed for westfaironline.com on "Blending Family and Finance." He is a private client adviser at J.P. Morgan Wealth

Management in Mount Kisco, N.Y.

**SWATEE SINGH '03H** was a panelist on a new conference hosted by *CDO Magazine* by EDM Council. She is the managing director of the CIO enterprise data platforms at Barclays.

#### CHRISTIAN G. HOOVER PH.D.,

**'04H, M.S. '07**, an assistant professor in the School of Sustainable Engineering and the Built Environment in the Ira A. Fulton Schools of Engineering at Arizona State University, will expand his research into glassy metallic organic frameworks in the next five years with funding from a National Science Foundation CAREER Award.

#### ALAN W. LOTHIAN M.S. '04

was promoted to associate at Langan Engineering & Environmental Services.

#### EDWARD J. MUSA '04, M.S. '06

started a new position as account manager, Strategic ISVs at Amazon Web Services. Prior to his new role, he served as Senior Customer Solutions Manager at AWS.

#### NEXUS U. SEA '04H

joined O'Melveny & Myers LLP's product liability and mass torts practice group in New York. He was previously a partner at McDermott Will & Emery LLP.

#### KELLI C. GLASGOW M.ARCH '05

was appointed an associate at DIGroup Architecture. She joined the company in 2014 and has developed a diversified body of work, leading projects in the academic, civic and corporate market sectors. DIGroupArchitecture is a minority-owned business specializing in architecture, interior design and environmental graphics.

#### DOLORES I. MARTINEZ-WOODEN

**'05, M.S. '07** was appointed acting director of engineering for the City of Newark. She previously spent 12 years at Turner Construction Company, where she was recently a project engineer.

## PROFILE

## STAVROS ZERVOUDAKIS '91, M.S. '92

## Driven By Data

Vice President of Artificial Intelligence at Mutual of America Financial Group  
Adjunct Assistant Professor at New York University



Photo: Courtesy of Janet Zheng

**Q: How did a process engineer become an expert in data analytics and AI?**

**A:** As an intern for ADP during my master's program at NJIT, I led a team that created tools to automate time-consuming quality assurance processes. This allowed us to minimize the ineffective use of resources on repetitive tasks. My graduate research focused on neural networks, the underlying technology of Deep Learning, a subset of AI. Process (re)engineering, automation and AI, where applicable, share a goal: making it simpler and easier to get things done. Over the past 10+ years, I've led data and AI-related initiatives aimed at improving processes related to company restructuring, financial services, process reengineering, fraud detection and natural language processing for startups and large organizations. Currently, I'm building the AI practice for a financial services firm.

**Q: Why are businesses turning to AI?**

**A:** AI is used extensively for predictive and prescriptive analytics. With the proliferation of no-cost, open-source software, developers are able to rapidly develop and deploy new applications. There are, for example, over 355,000 free Python language packages. Scikit-Learn, TensorFlow, PyTorch and spaCy are used extensively for AI applications.

Such resources are used to build custom solutions and integrate them into their environments. These include models that extract useful information from conversations with clients, and then use those insights with data from historical interactions and social media to create deep learning graph models that give a 360-view of customers, while improving personalization and service satisfaction.

**Q: What's new in AI? What are the pitfalls?**

**A:** I expect business processes to be more data driven. AI-enabled decision-making will be more prevalent in the near future. In the healthcare industry, for example, advances in image understanding, the science of identifying diseases and the ability to predict the outcomes of experimental drugs will take off. However, per Gartner (the technology research company), 85% of AI projects fail. Why? Project leaders have little management experience, fail to include experts with domain knowledge and rush delivery of models. Data, the fuel of AI, is often limited, incomplete and invalid. A focus on coding that fails to appreciate problem-solving and soft skills drives good resources away.

**Q: What do your students at NYU learn about AI in your data analytics course?**

**A:** My two-semester course starts with basic statistics, probability and visualizations, and moves to advanced concepts in big data, machine learning, deep learning, graph computing and autoML, which automates data science and model deployments. We also touch on the ethical aspects of AI, such as how to deal with ethical bias which may be hidden in the data used to train a model.

**Q: How do you think the AI landscape will change over the next few years?**

**A:** Operationalization of AI platforms through consolidation of tools and automation of techniques, as well as cloud-based AI services, will enable further reach for smaller businesses. Improvements in augmented reality using AI will improve personalization for consumers and efficiency in research and business applications. Edge AI, used on devices and smart homes, will transform society in ways unimaginable just five years ago, adding to the battle of privacy versus convenience and enriching the conversation on ethical AI. ■

*This interview represents the views of Stavros Zervoudakis and not his employer.*

- Tracey L. Regan

**MARJORIE A. PERRY MBA '05**

was featured on the ROI-Influencers Executives: New Jersey list (2022). She is the chief executive officer at MZM Construction. Perry is chair of the NJIT Board of Overseers.

**MARGARITA RAFALOVSKY**

**M.S. '05** is one of five candidates who are competing for three positions on the Princeton, N.J. Public Schools Board of Education in the Nov. 8 election. She serves as co-founder and board trustee of Princeton Citizens Alliance.

**JESSICA R. HARRIS '06** is founder of Harris Energy Solutions, a woman-owned company headquartered in Austin, Texas specializing in solar design. Harris Energy is partnering with Shoreline Energy Advisors. The Montclair Township Council members awarded a contract to Shoreline Energy Advisors for Phase 2 of the Town Center Distributed Energy Resources Microgrid Design Incentive Program, a clean-energy program.

**ANTHONY R. COSCIA '07 HON**

was featured on the ROI-Influencers Economic Development list (2022). He is a partner at Windels Marx Lane & Mittendorf.

**SCOTT O. GRAHAM M.ARCH '07**

was appointed by the City of Reading Building and Fire Board of Appeals to serve as chairman. He is the president/principal at Muhlenberg Greene Architects.

**DAVID D. RUCHMAN '07, M.S. '09**

was appointed chief executive officer at powersolution.com, a leading New Jersey-based managed IT services provider.

**KEITH C. SILVERMAN '07 PH.D.**

joins Axalta Coating Systems Ltd. as senior vice president and chief operations and supply chain officer. Silverman was most recently an external advisor with

Bain & Company lending expertise to Bain consultants and clients across operations, supply chain, manufacturing, EHS and quality. Axalta is a global leader in the coatings industry.

**STEVEN S. BURGOS '08** joined HOK as regional leader of WorkPlace based in Miami, Fla. He is the immediate past president and current vice president of sponsorship for the International Interior Design Association's (IIDA) South Florida chapter.

**AKSHAR SIDANA '08** is seeking his third term on the Woodbridge Board of Education. He owns Indianica Academy, an Indian dance school in Woodbridge, N.J.

**CHRISTOPHER M. HANNA '09,**

**M.S. '14** is a project manager for T.Y. Lin International in the Rockaway office. Previously, he served as the construction services department manager at Pennoni.

2010s  
**RALPH IZZO '10 HON**

executive chair, president and chief executive officer of PSEG, will retire on December 31, 2022. The PSEG Board of Directors elected Ralph LaRossa as president and chief executive officer effective September 1, 2022. Izzo was recently featured on the ROI-Influencers Top 50 and National/Global Executive lists (2022).

**DANIELLE VILLEGAS M.S. '12**

was invested at the end of April 2022 as director for the Society for Technical Communications board of directors. Previously, she had been president of the Philadelphia Metro Chapter, as well as chair of several committees. In 2021 she received the board's Distinguished Community Service Award. She is the senior knowledge management specialist for Cox Automotive.

**WILLIAM T. BARRY '13H** joined Deloitte as a senior consultant. He was formerly a lead associate at Booz Allen Hamilton.

**MANPREET K. KOHLI PH.D.,**

**M.S. '13** is currently a postdoctoral fellow at the American Museum of Natural History where she is pursuing her research in insect systematics, evolution and phylogenetic methodology.

**RUCHIKA TALWAR, M.D. '13H**

was named the 2022-2033 H. Logan Holtgrewe Legislative Fellow. This fellowship is designed to prepare and educate urology residents and fellows in the legislative aspects of health policy. Talwar is a urology surgery resident at the University of Pennsylvania-Penn Medicine Health System in Philadelphia.

**ZHE HE '14 PH.D.**

is the recipient of the 2022 Lois Lunin Award. The award recognizes individuals who have made noteworthy contributions to the practice of Information Science and Technology through leadership, mentoring and innovation. He is an associate professor at the Florida State University School of Information.

**JEFFREY M. SENATORE '14**

joined SV Design as an architect. Previously, he was a project architect at STG Design.

**JOSHUA A. COLLAZO '15**

launched an NFT (non-fungible token) project. He is an angel investor.

**BRIAN P. ERB '15**

joined the College of Charleston as its data coordinator, Academic Advising and Planning Center. Previously, he was a substitute teacher in the Charleston County school system.

**JOHN VITO D'ANTONIO-BERTAGNOLLI '16H, M.S. '17H**

founder and chief executive officer of OculoMotor Technologies, appeared on



PROFILE

MEET THE NEWEST NEWARK MAYOR'S HONORS SCHOLARS

Kaily Peixoto, Oluwanifemi Fuwa, Nyssa Nixon

Oluwanifemi Fuwa fabricated face masks to protect people from COVID-19.

Kaily Peixoto volunteered at a senior center and handed out scarves to homeless individuals at Newark's Penn Station.

Nyssa Nixon volunteered at Isaiah House shelter through Jack and Jill of America and tutored peers as a member of the National Honor Society.

They did it all as high school students in Newark, even while achieving exceptional marks in class. And now each has embarked on her first year at New Jersey Institute of Technology. Meet the 2022 Newark Mayor's Honors Scholars.

Now in its fourth year, the Mayor's Honors Scholars Program awards full scholarships to three students annually based on academic and service accomplishments, particularly those who attend Newark public schools and have financial need. Since it began in 2019, a dozen scholars have earned a full ride to NJIT through the program.

Awardees enter NJIT's Albert Dorman Honors College — home to its top scholars — and participate in its City Leadership and Civic Engagement track, which connects students with opportunities to collaborate with city government through events, meetings, service projects and even internships. Participants are expected to maintain a 3.2 GPA and complete 30 hours

of volunteer service each semester, half of which takes place off campus.

The primary purpose of the Mayor's Honors Scholars is twofold: increase the number of Newark residents attending NJIT and catapult them into careers that raise their economic trajectory.

"It also helps us connect to the city more effectively, as there are lots of opportunities and talent here in Newark and we want to get to know both better," said Burcak Ozludil, associate dean at Albert Dorman Honors College. "In addition, we help develop the next generation of leaders for Newark through the leadership and engagement program."

As with most of their peers, the new Honors Scholars are still determining their majors. That said, Fuwa, who attended Weequahic High School, is interested in biology, Peixoto, of Technology High School, wants to study engineering and Nixon, from Arts High School, is focused on biomedical engineering.

Nixon and Peixoto already know their way around campus, as Nixon received five weeks of college prep from NJIT's Educational Opportunity Program and Peixoto participated in the university's Math Success Initiative. That program brings Newark high school students to NJIT during the summer and academic year to take classes and experience college life. Twenty-nine students participated

in the latest session and nearly all earned admission to NJIT.

The initiative and the Mayor's Honors Scholars are central to NJIT's cultivation of its home city of Newark — one of the core missions of the university. Other programs include the federally funded Forensic Science Initiative and the Paul V. Profeta Foundation Center for Innovation and Entrepreneurship, which offers paid fellowships and a startup studio for Newark residents. Both were unveiled last year.

SCHOLARS THROUGH THE YEARS

**2022**  
Oluwanifemi Fuwa, Nyssa Nixon, Kaily Peixoto

**2021**  
Joshua Dadzie, Oluwaseyi Ikujuni, Yorquiria Maldonado Mejia

**2020**  
Okyere Boateng, Dequan Marshall, Priestly Ogbonna

**2019**  
Samantha Augustin, Samara Augustin, Kiaja Jones

- Andrew McMains

2020s

**MARINA ARRESE '21, M.S. '22** was named as a First-Team selection on the College Sports Information Directors of America (CoSIDA) Academic All-District 2 Women's At-Large Team. She is a two-time CoSIDA Academic All-District First-Team selectee. She was the president of the NJIT Investment Fund and served on the women's fencing team.

**ANUJA BADETI B.S./M.S. '22** has accepted a full-time role at Bloomberg LP as a software engineer. She served as the president of the NJIT Student Senate.

**VICTORIA Q. NGUYEN '21** was accepted to Northwestern University Pritzker School of Law. Currently, she serves as a legal support assistant at Alston & Bird.

**MONICA C. WEGLARZ '21** won the Best Early Stage Startup award at UPitch Competition. Currently, she is a part-time private client paralegal at Hanse Anderson LLP and is studying for the LSAT.

**JAMES V. BRONICO, JR. '22** joined Van Cleef Engineering Associates as a senior survey technician in June 2022. He was a survey intern for the firm from May 2021 to June 2022.

**SREYA DAS '22** joined the cybersecurity team at JPMorgan Chase.

**PRADNYA N. DESAI '22** won the Audience Choice Award for Best Pitch at the 2022 University Pitch Competition of The IndUS Entrepreneurs (TiE-NJ) for her startup idea called Ad-Connect. Ad-Connect aims to help children with ADHD develop social skills. In August of 2022 she became a software engineer at Microsoft in Seattle, Wash.

**SURAJ J. GHUMWALA '22** will be the first cadet from NJIT's ROTC detachment commissioned into the U.S. Space Force.

Fez and Friends, a new podcast hosted by **AWAIS A. QAZI '17**. OculoMotor was recently awarded a \$1 million National Science Foundation Small Business Innovation Research Phase II grant. OculoMotor is creating revolutionary software for optometrists and their patients. D'Antonio-Bertagnolli was named a Next Generation of Leaders by *NJBIZ*.

**DINA AYMAN '17, M.S. '18** was named to the *Forbes* 30 Under 30 list. She is a program manager at Microsoft and an adjunct professor in the Helen and John C. Hartmann Department of Electrical & Computer Engineering at NJIT. This year she also ran for Miss New Jersey.

**BRYAN V. HABERSTROH '17** married Alayna Nicklaus in August 2022. He is the marketing programs manager at PDQ Manufacturing in Lancaster, Pa. He played baseball at NJIT.

**LIEM HO '17H** is the campaign manager at The Trevor Project. He previously served as the digital program manager at Avalon Consulting Group.

**RASHMI B. KETHA '17H, M.S. '18** is the first woman of color and South Asian to co-lead the Women's Association of Verizon Employees, Verizon's largest global employee resource group with more than 12,000 members from 32 countries.

**MIGUEL MOLEDO '18** and **KATHRYN NYBY '18** are engaged. Moledo is a mechanical design engineer at O&S Associates. Nyby is an intelligent process automation senior analyst at Johnson & Johnson Consumer Products.

**TOMISLAV ANTOLJAK '19H** is the founder of Hangoo, a social and networking app that is launching soon and is backed by billionaire activist Bill Ackman. He played tennis at NJIT.

**SYDNE C. NANCE '22H** is an architectural associate at Studio 1200, a Short Hills, N.J. interior design firm. Previously, she served as an intern at the firm. At NJIT, Nance excelled in track and field, winning a bronze medal in the America East Outdoor Championships.

**AMAL S. SHABAZZ '22H** participated in a 10-week summer internship at Pfizer in Andover, Mass. then began the Ph.D. program in bioengineering at the University of Maryland in fall 2022.

Started a new job or got a promotion? Have a special update to share? We want to know! Submit a Class Note and stay in touch.

IN MEMORIAM

Bernard M. Lubetkin '49, M.S. '52  
 Arnold C. Peterson '49  
 Frederick H. Abernathy '51  
 Hans A. Becker '51  
 Concetto P. Italia '51, M.S. '54  
 John E. Steen '52  
 William L. Taetzsch '52  
 Paul G. Kisciras '53  
 John MacInnes '54  
 Michael S. Polashock '54  
 James M. Cameron '55  
 Edward M. Irving '55  
 Robert A. Livermore '55  
 Carl H. Rosner '55  
 Alvin H. Weiss, M.S. '55  
 Edward R. Nolan '56, M.S., M.E. '59  
 Richard F. De Venezia '57  
 Herman O. Rogg '57

Robert L. Bowser '58  
 William E. Behrendt M.S. '59  
 Donald V. Di Massimo '60  
 Thomas G. McBride '60  
 Raymond X. Okonsky '60, M.S. '67  
 Robert A. Pege M.S. '60  
 Warren O. Weilbaeher '60  
 Richard P. Grimm '61  
 George A. Katzenberger '61  
 Otto J. Schultz '61  
 Gene R. O'Brien '62  
 Walter D. Houle '63  
 Edward M. Kelley '64, M.S. '71  
 Paul D. O'Lenick '64, M.S. '69  
 James J. Juliano '65  
 Emil C. Neu, Ph.D. '66  
 Windsor M. Jacques '67  
 Raymond J. Misiewicz '67

Henry G. Koch M.S. '68  
 Michael C. Washeleski '68  
 Edward G. Kinal '70  
 Thomas D. Policastro '70  
 Andrew J. Van Abs '70  
 Edward J. Schmeltz '71  
 Chester Maskiewicz '72  
 John N. Frangakis '73  
 Andrew J. O'Sullivan '74, M.S. '74  
 Karlis V. Kopans '75, M.S. '85  
 John J. Sakowski '75  
 Werner G. Mueller '79, M.S. '99  
 Charles J. Brodowicz M.S. '07  
 Malay J. Patel '18

Professor Emeritus Troy West,  
 J. Robert and Barbara A. Hiller  
 College of Architecture and Design



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Photo: Oscar Masciandro

New Jersey Institute of Technology is a top 10 Best College for Engineering Majors in the U.S., according to *Money*.

The universities in the top 10, which also include MIT, Princeton University and Georgia Institute of Technology, emerged from *Money's* 2022 list of Best Colleges, which ranked NJIT No. 14 nationally. "We then ranked colleges based on the median salaries of recent alumni with engineering degrees, as well as the number and share of recent graduates earning bachelor's degrees in engineering," *Money* explained.

NJIT's Newark College of Engineering (NCE) is the largest and oldest academic school at the university, offering rigorous academics and hands-on experiences through research, design projects, internships and cooperative

education opportunities.

Those experiences are heightened by a 21,000-square-foot Makerspace, which features state-of-the-art machinery and equipment for fabrication and prototyping. NCE has also recently added labs for microfabrication, motion capture and industrial and manufacturing engineering.

In its description of NJIT, *Money* noted that NCE offers more than a dozen undergraduate degree programs and "produces an estimated one in four of the professional engineers in New Jersey," adding that among its best engineering schools, "NJIT is a standout for economic mobility, propelling the many low- and moderate-income students it enrolls into well-paying jobs."

To NCE Dean Moshe Kam, the latest accolade represents a return on NJIT's investment in engineering education.

*U.S. News & World Report* also ranks NJIT highly in engineering, specifically NCE's graduate degree programs.

"Our top 10 national ranking from *Money* reflects significant intentional investment in hiring first-rate faculty, building and maintaining world-class research facilities and attracting the most promising and brilliant students," Kam said. "We are committed to further expanding our presence in key research areas that support public health, civic infrastructure, protection of the environment and sustainable development."

For more on NJIT's *Money* ranking, please go to: <https://money.com/best-engineering-colleges/>

- Andrew McMains



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