

# College of Engineering

REPORT 2024

Bucknell  
UNIVERSITY

# Bucknell Engineering Alumni Association

**Phil Amarante '18**, biomedical engineering  
(At-large Executive Committee Member)

**Jill Baumbach '14**, civil engineering

**Jayne Beckmann '14**, chemical engineering

**Jordan Berger '17**, chemical engineering

**Janet Meyer Boyd '81, P'17**, mechanical engineering (Executive Committee Member; Membership & Nominations Committee Chair)

**Monica Brzozowski '18**, mechanical engineering

**Laura Cook '11, M'11**, chemical engineering

**Christina Garman '11**, computer science and mathematics

**Kat Wiley Gebreselassie '14**, chemical engineering

**Megan Grossman '19**, chemical engineering

**Jeff Gum '78**, electrical engineering

**Kellen Haile '18**, mechanical engineering

**Marc Henry '09, M'10**, chemical engineering (Executive Committee Member; Student Engagement Committee Co-chair)

**Nancy Ingabire Abayo '19**, civil engineering and geology

**Rob Jerman '78**, chemical engineering

**Rick Kleinert '74**, electrical engineering

**Joe LaBarca '76, P'07**, chemical engineering

**Jessica Litten '16**, biomedical engineering

**Forrest Lysinger '00, M'06**, mechanical engineering

**Sandra Madanat '21**, biomedical engineering and management for engineers (Executive Committee Member; Student Engagement Committee Co-chair)

**Anthony Mariniello '90, P'25**, chemical engineering  
(Executive Committee Member; President-elect)

**Meredith Menzel Jones '13**, civil engineering and anthropology

**David Metcalf '77**, civil engineering

**Megan Munter '21**, electrical engineering

**Darryl Novak '63**, mechanical engineering

**Winnie Okello '10**, civil engineering (Executive Committee Member; Communications Committee Chair)

**Brian Picarillo '18**, mechanical engineering

**Helen Reetz '78**, civil engineering (Executive Committee Member; Alumni Engagement Committee Chair)

**Jeff Rockwell '07**, computer science (At-large Executive Committee Member)

**Christa Rotolo '11**, civil engineering and management for engineers

**Amanda Shapiro '14**, chemical engineering  
(Executive Committee Member; President)

**Andrew Solomon '12**, mechanical engineering

**Erin Threet '06**, civil engineering

**John Venarchick '00**, electrical engineering

**Aditi Vijayvergia '21, M'23**, electrical engineering

**Ezra Yarnell '98, M'00**, civil engineering

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## MAJORS

Biomedical Engineering

Chemical Engineering

Civil Engineering

Computer Engineering

Computer Science & Engineering

Electrical Engineering

Environmental Engineering

Mechanical Engineering





## Dear Bucknellians,

Bucknell's College of Engineering continues to be one of the premier undergraduate destinations for engineering education, offering an exceptional experience for more than 700 students. We take pride in our hands-on learning opportunities, innovative programs that foster interdisciplinary thinking and a faculty of experts who are leaders in their fields. Our commitment to excellence ensures that our students are well-prepared to tackle the challenges of the future.

I invite you to explore the following pages and learn more about the students, faculty and staff at the heart of our college. Their talent and energy amaze me every day, and the stories you will read here are just the tip of the iceberg of the extraordinary things happening in our classrooms, labs and beyond.

Thank you for your support. 'ray Bucknell!

## BRAD PUTMAN

Richard E. Garman Dean of the College of Engineering

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Bucknell engineers dive into projects that tackle societal needs and help them develop a global mindset. This prepares them not just for careers — but for a purpose-driven future.



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Through close partnerships with industry leaders, Bucknell students develop practical insights that equip them with skills and knowledge they'll use to solve real-world problems.



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At Bucknell, engineers take a forward-looking approach with a mindset centered on innovation and making contributions to drive progress and enhance lives.



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College of Engineering faculty members are experts in their fields of study. Their intellectual curiosity drives scholarly research, enriches their teaching and creates a dynamic learning environment.



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## INVESTING IN EXCELLENCE

Financial support enables the College of Engineering to continue to provide students with robust and purposeful learning experiences.

# Where Innovation Meets Opportunity

Bucknell's College of Engineering offers students dynamic learning experiences that extend beyond traditional academics. With signature programs that foster hands-on learning, our students cultivate vital skills through impactful experiences that give them a competitive edge.

## Engineering Solutions

*Bucknell's Grand Challenges Scholars develop solutions to society's most pressing challenges.*

Bucknell engineers want to change the world — and Bucknell's Grand Challenges Scholars Program (GCSP) prepares them to do just that. GCSP, which is endorsed by the National Academy of Engineering, is aimed at educating the next generation of engineers to tackle the most pressing issues facing society.

Applicants to Bucknell's GCSP select from four themes — sustainability, health, security and social access — that they would like to research and engage with throughout their college careers. With mentorship from faculty, scholars take part in multidisciplinary and multicultural research programs and extracurricular activities that help them develop a robust portfolio centered on their theme of focus.

Devising solutions to “grand challenges” goes beyond applying engineering skills; students need to develop cultural, political, social and ethical awareness.

**Brennah Kennedy '26**, electrical engineering, chose to focus on sustainability while conducting research with Richard E. Garman Dean of the College of Engineering Brad Putman. As part of a virtual exchange course with students and faculty from An-Najah National University in Nablus, Palestine, Kennedy studied how to harness energy from pavement.

In addition, she interned with the Office of Campus Sustainability to further hone her skills.

“My goal in pursuing this theme is to promote the development of new, alternative energy sources and promote more access to energy in rural and underdeveloped areas,” she says.

As a Grand Challenges Scholar and an engineering consultant for the Bucknell Small Business Development Center, **Jose Juarez '24**, mechanical engineering, wanted to translate his theoretical learning into practical applications that could have a social impact globally.

“The Grand Challenges Scholars Program motivated me to perform well in my engineering curriculum,” says Juarez. “It raised my awareness of the social issues that people are facing and the role I can play as a mechanical engineer in implementing my skills to help communities in need.”



## LEARNING IN A GLOBAL CONTEXT

Studying abroad gives students the opportunity to step outside their comfort zones and learn within an immersive environment that broadens their perspectives and fosters cultural competence — essential skills for future problem-solvers and leaders.

ENGR 290, Engineering in a Global & Societal Context, is a distinctive three-week program that enables engineering students to participate in a study abroad experience without interrupting their academic schedule. In May, 30 students traveled to Italy and France to follow in the footsteps of one of the western world's greatest polymaths and thinkers: Leonardo da Vinci.

Professor Emeritus Keith Buffinton, mechanical engineering; and Professors Lisa Perrone, Italian studies; Felipe Perrone, computer science; and Margot Vigeant, associate vice president of special initiatives, provided interdisciplinary insights.

“Da Vinci is a great example of things that can be accomplished from a technical, artistic and cultural point of view,” Buffinton says. “It’s hugely important for us as individuals — whether you’re an engineer or not — to understand the ways in which business, engineering and technology intersect across cultures on a global scale.”



## LEVELING THE PLAYING FIELD

Gaming can be more than just entertainment. It can be a gateway that helps people form valuable social connections. Through online communities, gamers forge friendships and build social networks. But inaccessible game design can create barriers and limit the ability for all people to fully participate. **Thu Le '27**, computer science & engineering, wants to change that.

Inspired by Bucknell's 2023 First-year Common Reading, *Sitting Pretty: The View from My Ordinary Resilient Disabled Body* by Rebekah Taussig, and her own desire to make gaming more accessible, Le partnered with Professor SingChun Lee, computer science, during her first year on campus. Together, they are designing a prototype controller that could allow players to control their gameplay using features like gesture recognition or voice commands to optimize usability.

This past spring, Le collected data about muscle movement patterns from an electromyography sensor, and then fed that data into an AI system to interpret and translate those patterns into a usable interface. “This data will contribute to the future of fields like human-computer interaction and assistive technology,” she says.

“

We’re focused on improving the user experience. It will be a better world if we can create something that improves that experience.”

**THU LE '27**  
computer science & engineering

# Exploring Beyond Disciplines

With the launch of the Dominguez Center for Data Science and the Perricelli-Gegnas Center for Entrepreneurship & Innovation, Bucknell engineers are gaining new perspectives through cross-college collaboration, hands-on research and creative programming that supports interdisciplinary exploration.



## Improving Data Fluency

### *The Dominguez Center for Data Science*

Understanding data enhances an engineer's ability to adapt, innovate and lead technological advancements throughout their careers as they work to meet evolving industry demands. The Dominguez Center for Data Science — established by a cross-college team of faculty including Professor Brian King, computer science — provides Bucknell engineering students with resources and support to incorporate data science into their academic journeys.

### POTENTIAL AND PITFALLS

Professor Rajesh Kumar (above), computer science, is helping a team of student-researchers examine biometric scanning and behavioral monitoring systems with a critical eye. In his lab, Kumar's researchers learn essential skills in app development, data collection, statistics and machine and deep learning techniques, and develop a keen understanding of technology's societal impacts. They leverage data collected via smart devices to investigate the nuances of user-device interaction, and analyze physical (face and fingerprint) and behavioral life patterns (walking, typing and swiping) for identity authentication. In addition, they assess for demographic biases and uncover potential security vulnerabilities in the process. In summer 2024, Kumar's team of researchers examined the security of the signature verification process, fake profile detection in social media space and bias in touch biometrics.

### MODERNIZING SCHEDULING

As part of a cross-college team of students, faculty and staff, **Tsugunobu Miyake '25** (right) developed a data-driven approach for Bucknell's final exam scheduling, replacing what was a complicated, time-consuming analog process. Miyake and his partners used a mathematical model and developed an algorithm that arranged Bucknell's roughly 3,200 students across 80 time slots to create sample schedules. He then designed a user interface to allow Vince Pellegrini, assistant registrar, to refine the computer-generated results. Bucknell's spring 2024 final exam schedule, created with the new digital process, saw a significant reduction in inconveniences (such as back-to-back exams) and saved Pellegrini several weeks' worth of time. "I'm amazed at the tool we now have at our fingertips," he says.



# Entrepreneurial Minds at Work

## *The Perricelli-Gegnas Center for Entrepreneurship & Innovation*

At Bucknell, student curiosity and faculty and staff ingenuity turn big ideas into smart solutions. In the new Perricelli-Gegnas Center for Entrepreneurship & Innovation, Director Erin Jablonski will expand upon the resources of the University's strong entrepreneurial ecosystem to empower more students to become resourceful innovators. Engineers who receive entrepreneurial education are better prepared to contribute to product design and development, identify market trends and gaps, anticipate industry shifts and make strategic decisions.

## GOOD CHEMISTRY

**Lyric Abdul-Rasheed '26** (right) came to Bucknell with a purpose — to establish a foundational knowledge of chemical engineering in order to grow her business, Lyric's Lip Candy. In courses like organic and analytical chemistry, fluid mechanics and material science, she's gained critical insights that are helping her improve her product. "I don't just want to make lip gloss," she says. "I want to know and be able to prove what my products can do to improve my customers' skin." Having managed her product development, marketing, sales and distribution from the start, Abdul-Rasheed knows there is more to business than creating an exceptional product. She has leveraged the support of Bucknell's Small Business Development Center (SBDC) and, in spring 2024, became the first student to hold office space in its StartUp Lewisburg business incubator in downtown Lewisburg. The entrepreneurial mentorship she receives from the SBDC marries with her coursework, creating a powerfully unique learning experience that is driving Abdul-Rasheed's success. "I'm getting so much more than the foundational chemical knowledge," she says. "I'm building my entire business."



“

Engineers constantly design, optimize and rethink how things are done. Under the umbrella of the Perricelli-Gegnas Center, engineers will co-create with faculty, staff and students from the College of Arts & Sciences, the Freeman College of Management and the greater Bucknell community. The center will bring people together for problem-solving and innovation.”

**ERIN JABLONSKI**

*Director of the Perricelli-Gegnas Center for  
Entrepreneurship & Innovation*

## LEARNING BY DOING

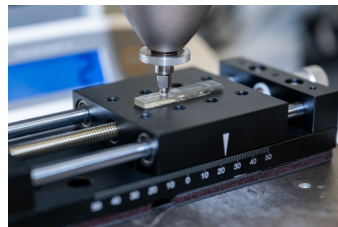
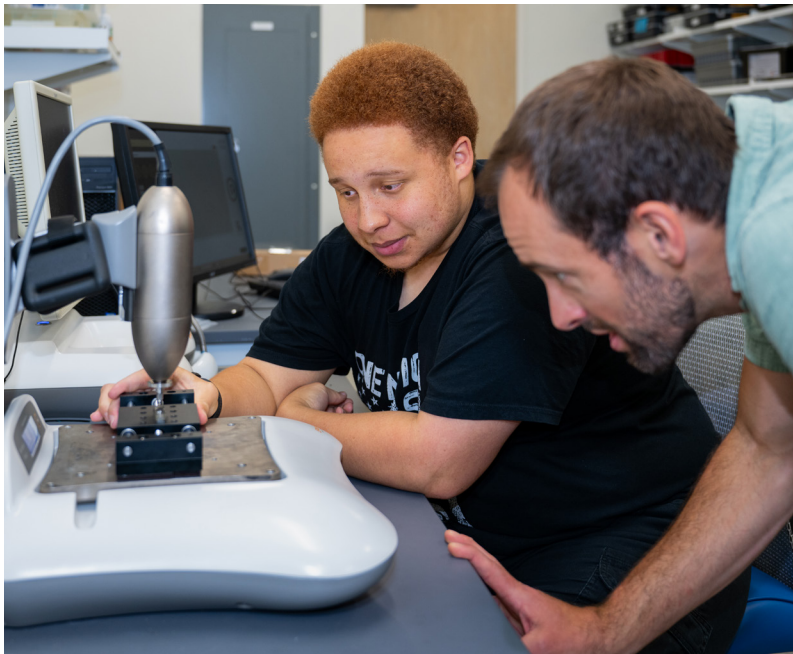
Technical knowledge is critical for a successful engineering career, but the implementation of academic concepts is something only experience can teach. Ian Proud (right), engineering innovation manager at the Small Business Development Center, stands in that gap. "Clients come to us with a need, and we're able to match them with one of our student employees," he says. "They get experience interacting with clients, and the client gets the help they need."



Proud's mentorship also helps young entrepreneurs discover the depth of their own knowledge and reframe their development processes. By teaching students to approach projects through the lenses of desirability, viability and feasibility, Proud helps them come up with solutions that work. "Students know far more than they think they do," Proud says. "I give them the freedom to explore and to fail, reinforce what they know, and invite them to test their ideas against the world — and that's where the magic happens."

# Fortifying Connections

Bucknell's College of Engineering faculty know that experience is the greatest teacher. Through strategic partnerships, our faculty give their students meaningful hands-on learning opportunities that go beyond the classroom. By collaborating closely with industry partners via programs such as the Bucknell-Geisinger Research Initiative and the senior design course, students graduate with a wealth of practical knowledge and the confidence to tackle any challenge that comes their way.



“

We are leveraging technologies that will make it easier for physicians to implement data-driven information in the clinic.”

PROFESSOR BENJAMIN WHEATLEY  
mechanical engineering

## Driving Progress in Healthcare

*The Bucknell-Geisinger Research Initiative enables Bucknell faculty and students to conduct collaborative research with health care experts to improve patient care.*

### REVOLUTIONIZING ORTHOPEDICS

Orthotic shoe inserts provide support, cushioning or correction for foot or lower limb issues. Custom orthotics — designed by a clinician after a comprehensive assessment — are the gold standard of care. However, creating custom orthotics is a meticulous, time-intensive process and typically doesn't use data from patients' gait profiles, as that requires specialized tools not readily available.

Professors Benjamin Wheatley (right page, left), mechanical engineering, and Kenny Mineart (above, right), chemical engineering, have teamed up with Dr. Mark Seeley, a Geisinger orthopedist, to improve the process. Wheatley is investigating whether clinicians can use smartphone video and AI to analyze gait and design a custom orthotic efficiently. Meanwhile, Mineart aims to optimize the physical makeup of orthotics, using gel materials and adjustable wedges that can be fine-tuned.

### ADVANCING NEUROSCIENCE

Professor Karlo Malaga, biomedical engineering, is partnering with Geisinger neurosurgeons to improve electrical stimulation therapies for people with movement disorders and other neurological conditions. By utilizing data from MRI and CT scans, Malaga and a team of students are creating predictive computer models that help clinicians tailor therapeutic stimulation for each patient. Throughout the project, engineering students have been given remarkable access to Geisinger experts — even in the operating room.

### IMPROVING DIAGNOSTICS

Professor Josh Stough, computer science, and Professor Emeritus Keith Buffinton, mechanical engineering, are using large-scale data analysis to help clinicians more easily and accurately diagnose Bell's palsy, an enigmatic medical condition that lacks a definitive diagnostic test.

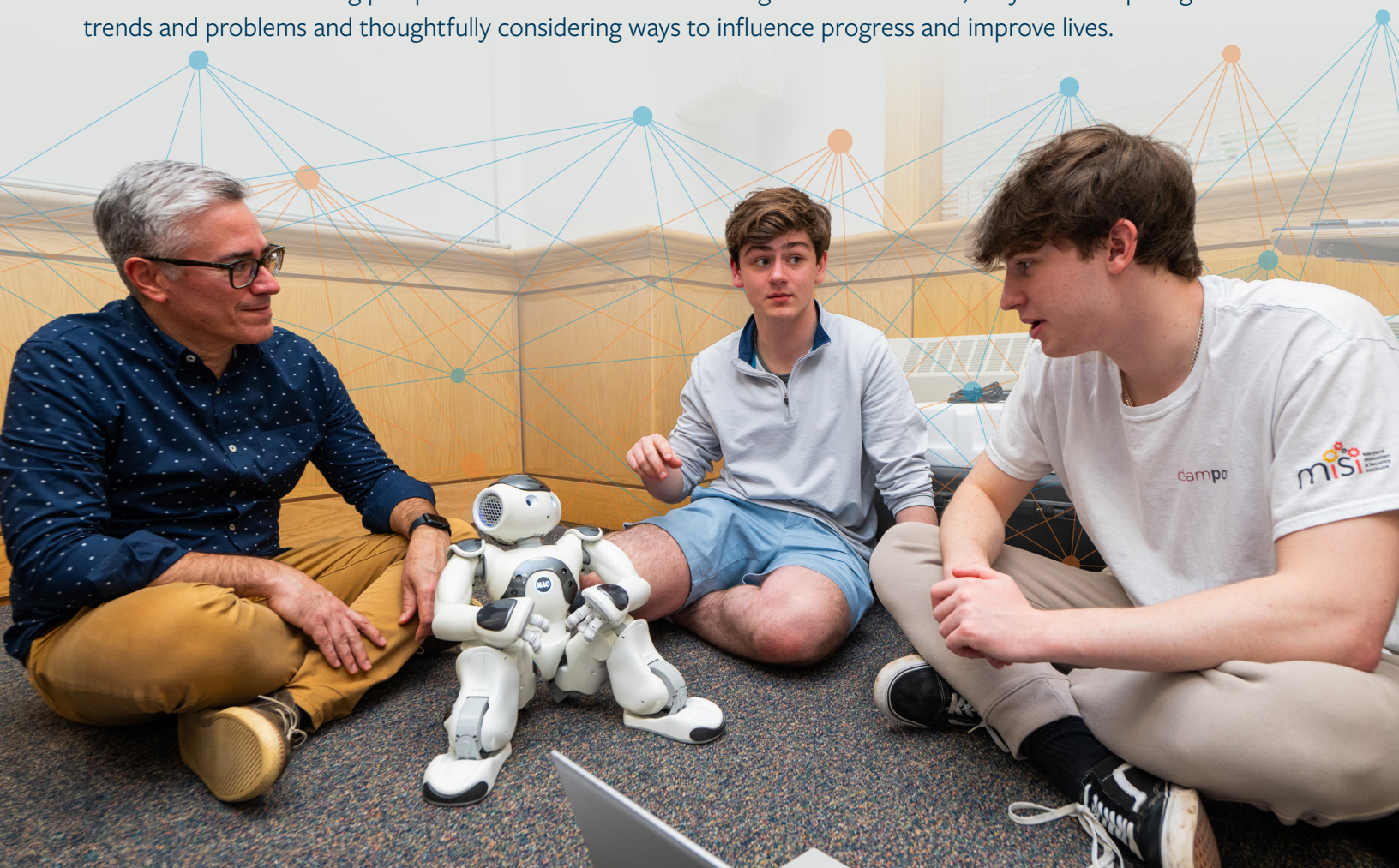


## BRIDGING THE GAP BETWEEN CLASSROOM AND INDUSTRY

Bucknell's College of Engineering senior design course offers a transformative experience, enabling students to collaborate on a variety of impactful projects for a range of companies and organizations, including Geisinger, Corning and Keurig Dr Pepper. Engineering students spend their senior year applying skills and knowledge they've accumulated in Bucknell's classrooms and labs while receiving ongoing feedback from an industry professional. Corporate partners benefit from tapping a pool of high-performing students who have fresh perspectives and access to expert faculty and state-of-the-art resources, all of which can propel their projects forward. Since the outset of the program, more than 3,000 students have worked with more than 300 companies and institutions on more than 700 projects.

# Distinctive by Design

Inside the classroom and out, Bucknell engineers aren't just preparing for the future — they are shaping it. With a forward-looking perspective and an “I-can-make-things-better” mindset, they are anticipating trends and problems and thoughtfully considering ways to influence progress and improve lives.



## Exploring the Social Impact of Robots

*RoboLab provides an environment for scholarly and creative conversations.*

Across the globe, robots are being integrated into everyday life. They're delivering coffee in cafés and room service in hotels. They're monitoring crops on farms and patients in hospitals. They're inspecting the infrastructure of bridges and the inventory of supermarket shelves.

While human-robot interaction (HRI) can improve efficiency, convenience and safety, it also raises complex ethical, social and economic considerations — all topics that are up for open discussion in Bucknell's RoboLab.

**Sean O'Connor '26** (above, center), a computer science & engineering major, and Professor Felipe Perrone (above, left), computer science, launched RoboLab in spring 2023 as a way to bring together a community of students interested in having a dynamic environment for intelligent, important and creative conversations about the future of technology.

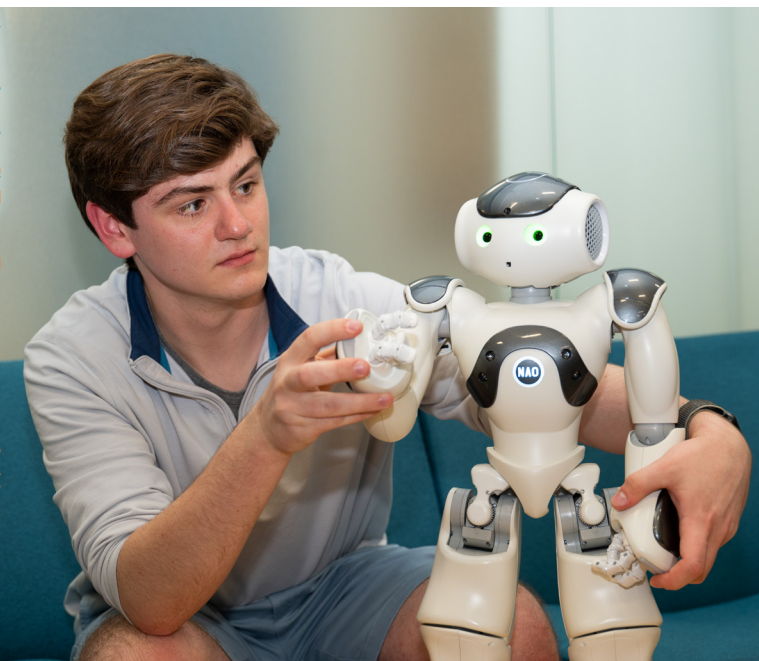
Created for and driven by students, RoboLab encourages the exploration of scholarship surrounding social robotics and HRI. O'Connor, who has conducted independent research on HRI and robotics programming with

Perrone since his first semester on campus, helped bring the discussion group to life. “I knew there were other students with similar interests,” he says. “And I really needed more people to bounce ideas off.”

RoboLab members review scholarly papers and other media on the topic of robots in society, and have discussions that resonate across the wide-reaching subject of HRI. They give presentations on new technologies and theories and bond over their shared curiosity about how to make robotics more accessible.

“It's tough to establish authentic community-building around nerdy academic topics like this,” says Perrone. “But it's great to watch students step up and shine as they guide group engagement and connect with others.”

The broad appeal of RoboLab has resulted in a diverse group representing a wide array of majors. “Students from every corner of the Bucknell student body find their way to our lab,” he says. “There is no prerequisite — no qualifying factor to join other than curiosity and an interest in robots.”



## CAPITALIZING ON THE EXPERIENCE

Since first stepping on campus as a newly graduated high school student, **Morgan Powell '26** (above) has embraced every opportunity the College of Engineering offers. Through the Engineering EXCEerator program, she received hands-on engineering experience ahead of her first semester. That early immersion helped her form bonds with professors and peers, sparked her enthusiasm for experiential learning, and inspired her to get involved — really involved.



I know that I've had the opportunities I have because of the community that exists here. I'm really grateful to have chosen Bucknell."

**MORGAN POWELL '26**  
civil engineering

Powell is active in a number of advisory and leadership roles throughout the college. She participates in the Engineering Success Alliance, is on the executive board of the Grand Challenges Scholars Program and served as a mentor for the EXCEerator program. In addition, she makes her mark across campus through her roles as a resident adviser, symphonic band member and artist. She leans into each opportunity and thrives on connection.

Powell knew research would be a staple in her Bucknell experience, and she has taken full advantage of the support and mentorship that are keystones of the College of Engineering. "If you're willing to put in the effort, you're going to get what you want out of your experience here," she says. "Everyone is willing to help you get where you want to go, and they motivate you to do it."

In her first year, she contributed to community-driven sustainable transportation initiatives with Bucknell's Center for Sustainability & the Environment (BCSE), and continued with the BCSE the following summer to research the use of anaerobic digestion for renewable energy on farms throughout Pennsylvania. Recently, she joined Professor Kelly Salyards' lab in civil & environmental engineering to pursue her goal of becoming a structural engineer.

In summer 2024, Powell put her experiences to work. Through yet another Bucknell connection — this one with **Allie Lovallo '15** — she secured an internship with Clark Construction Group in Washington, D.C., where she worked on a project to repurpose an early 20th-century streetcar facility to house the city's new all-electric bus fleet.

# Leading By Example

The College of Engineering's faculty are renowned experts who publish cutting-edge research with real-world implications. They're also committed educators and mentors who share their expertise to prepare Bucknell students to become leaders and innovators in their fields.



## Propelling Discoveries In Engineering and Beyond

**Professor Indranil Brahma**, mechanical engineering, “Experimental, Numerical and Deep Learning Modeling Study of Heat Transfer in Turbulent Pulsating Pipe Flow,” *Applied Thermal Engineering*, 2024

**Professor Karlo Malaga**, biomedical engineering, “Effect of Anisotropic Brain Conductivity on Patient-specific Volume of Tissue Activation in Deep Brain Stimulation for Parkinson Disease,” *IEEE Transaction on Biomedical Engineering*, 2024

**Professor Alan Marchiori**, computer science, with **Tsugunobu Miyake '25**, computer science & engineering, “A Continuous Turbidity Meter with Synchronous Detection,” *IEEE Applied Sensing Conference*, 2024

**Professor Robert Nickel**, electrical engineering, “Deep Learning-based Claim Matching with Multiple Negatives Training,” *ACL Anthology*, 2023

**Professor Anne Ross**, computer science, “Beyond HCI: The Need for Accessibility Across the CS Curriculum,” *Proceedings of the 55th ACM Technical Symposium on Computer Science Education*, 2024

# Innovation in Action

“

“In an ongoing conversation between models, experiments and clinical data, it’s the patient outcomes that are really the bottom line of this research.”

**PROFESSOR JIM BAISH ’79, P’15**  
biomedical engineering

## IMPROVING CANCER TREATMENTS

Scientific breakthroughs have spawned an array of novel therapies in cancer research. With the support of a five-year grant from the National Cancer Institute, Professor **Jim Baish ’79, P’15** (left page, center), biomedical engineering, has been working with an international team to advance cancer immunotherapy, a treatment that relies on the body’s own immune response.

“Unlike chemotherapy, which is toxic to the cancer and also toxic to the patient, immunotherapy helps the body do its own battle against cancer cells,” says Baish. “The amazing thing is it can be 100% effective, but it doesn’t work for everybody. That’s really where the research comes in. How can we make it work better and for more people?”

In collaboration with Massachusetts General Hospital, Baish uses mathematics and computational models to plan experiments and interpret data from preclinical trials. By modeling the lymphatic system, Baish hopes to predict how immunotherapy might affect a patient before proceeding with treatment.

## ADVANCING REGENERATIVE MEDICINE

Human clinical studies have shown that therapeutic ultrasound can significantly accelerate healing in chronic wounds. Weekly 15-minute sessions of low-intensity, low-frequency ultrasound have reduced the healing time of venous leg and diabetic foot ulcers from 12 months to just four weeks. Now, with the support of a two-year NSF Engineering Research Initiation Grant, Professor Olivia Boerman, biomedical engineering, will investigate why this therapy is so effective, and how it can be more accessible and affordable.

“The big question is: How does ultrasound advance healing? Does ultrasound stimulate blood vessel growth?” says Boerman. Blood vessel cells and immune cells both play a role in healing. “The second aim of this grant will be to conduct robust bioinformatic analysis on the entire transcriptome — all 26,000 genes — to determine how cells are being impacted.”

The NSF grant provides Boerman and her lab students the resources to conduct research with the potential to impact real lives.

“Ultrasound is incredibly affordable,” says Boerman. “Scientifically, it’s exciting because it has a lot of promise to non-invasively advance healing in many ways.”



“

I’m really passionate about developing medical technologies that can serve underserved populations and under-resourced areas.”

**PROFESSOR OLIVIA BOERMAN**  
biomedical engineering

**Professor Edward Talmage**, computer science, with **Anh Tran ’24**, computer science and mathematics, “Improved and Partially-tight Lower Bounds for Message-passing Implementations of Multiplicity Queues,” *Leibniz International Proceedings in Informatics*, 2023

**Professor Nicholas Tymvios**, civil & environmental engineering, “Impacts of Work Setting and Task Complexity on Mental Workload and Safety: An Experimental Study,” *Construction Research Congress*, 2024

**Professor Margot Vigeant**, chemical engineering, “Food for Thought: Pucker Up!” *Chemical Engineering Education*, 2023

**Professor Brandon Vogel**, chemical engineering, with **Nolan Morrison ’22**, “Factors That Influence Base-catalyzed Thiol-ene Hydrogel Synthesis,” *Gels*, 2023

**Professor Constance Ziemian**, mechanical engineering, and **Professor Ron Ziemian**, civil & environmental engineering, with **Marly McClintock ’23**, “Experimental Investigation of Torsional Strengths of Aluminum Alloys: Circular and Rectangular Solid Sections,” *Structures*, 2024

# Primary Funding Initiatives

Bucknell’s College of Engineering fosters a distinct spirit of innovation, creativity and exploration that is fueled by the generosity of the Bucknell community. Students benefit from robust and purposeful programming that delivers hands-on learning experiences, an ethical and equitable approach to problem-solving, and an encouraging community — all thanks to the alumni, parents and friends who empower the college by giving.

## 2023 RANKINGS

U.S. NEWS & WORLD REPORT ONCE AGAIN FOUND THE COLLEGE OF ENGINEERING TO BE A LEADER AMONG UNDERGRADUATE ENGINEERING PROGRAMS.

OVERALL RANK\* **No. 7**

**No. 3**

Civil  
Engineering

**No. 3**

Mechanical  
Engineering

**No. 4**

Electrical  
Engineering

**No. 5**

Computer  
Engineering

*\*Among schools not offering doctorate degrees*

## FINANCIAL AID

**73%**

of College of Engineering students in the Class of 2028 received Bucknell aid  
*(need-based, merit or a combination of both)*

**84%**

of College of Engineering students in the Class of 2028 received any aid  
*(including grants, scholarships, loans and outside aid)*

**\$21,993**

average federal student loan debt for the Class of 2023 among those who borrowed *(compared to about \$30,000 nationally)*

## GIVING IMPACT



**73** TENURE-  
TRACK  
FACULTY

**14** ENDOWED CHAIRS/  
PROFESSORSHIPS AND  
FACULTY FELLOWS

In 2023-24, gifts to the engineering fund supported:

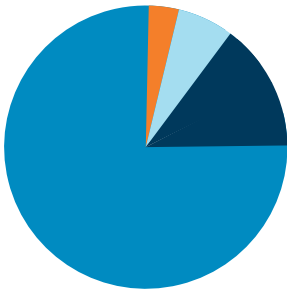
- Faculty, staff and student professional travel to conferences and research presentations
- Untenured faculty summer research
- Capstone senior design projects where students applied their engineering skills to develop innovative solutions presented by real-world clients
- Renovation, refurbishment and upgrades of teaching and research labs
- National Engineers Week events and celebrations
- Dana 213 computer lab renovation

## FUNDS RAISED

Fiscal Year 2023

Gifts	\$998,272
Matching gifts	\$44,397
Planned gifts	\$505,846
Pledges	\$721,290
<b>Total</b>	<b>\$2,269,805</b>

## DONORS



- Alumni: \$1,675,290
- Corporations, foundations & organizations: \$77,799
- Parents & families: \$114,200
- Others\*: \$402,516

*\*Students, staff and other individuals*

## COLLEGE STATS

**708** 

*Total Full-time Undergraduate Enrollment*  
Academic Year 2024-25

**96%**

FIRST-YEAR  
RETENTION RATE

**86%**

SIX-YEAR  
GRADUATION RATE

**81%**

FOUR-YEAR  
GRADUATION RATE

**2,811**  **APPLICANTS**

**820 ADMITTED**

**29% admit rate**

**196\* ENROLLED**

**24% enroll rate**

\*As of August 2024

**66%**

MALE

**34%**

FEMALE

**28%**

STUDENTS OF COLOR



**21 countries**  
and **21 U.S. states**  
represented



My electrical & computer engineering design courses were geared very specifically to the kind of thinking that a

software engineer would need. My final round of Netflix interviews consisted of designing a solution to a problem by utilizing the very representations we had been working to improve for our senior design problem. Bucknell has truly prepared me for reaching my career goals.”

**TAYLOR LAMANTIA '24**  
Software Engineer  
Netflix, Los Angeles

## CLASS OF 2023 OUTCOMES

Nine months after graduation, the Center for Career Advancement surveyed engineers in the Class of 2023 to learn about their success.



**95%**

EMPLOYED, IN GRADUATE  
SCHOOL OR VOLUNTEERING



**\$77,178**

AVERAGE STARTING SALARY

### STARTING SALARY BY MAJOR

**\$72,902**

Biomedical Engineering

**\$73,441**

Chemical Engineering

**\$74,309**

Civil Engineering

**\$85,530**

Computer Engineering

**\$87,150**

Computer Science & Engineering

**\$89,350**

Electrical Engineering

**\$72,563**

Environmental Engineering

**\$75,320**

Mechanical Engineering

### TOP EMPLOYER INDUSTRIES

**55%**

Engineering/  
Manufacturing

**9%**

Construction

**5%**

Computer Science/  
Technology

**4%**

Consulting

## YOUR SUPPORT OF THE COLLEGE OF ENGINEERING MATTERS.

**Make your mark through one of our established funds:**

- The Engineering Fund
- BEAA Transformative Engineering Education Fund
- Engineering Success Alliance Program Endowment




**Invest in Excellence:**  
[give.bucknell.edu/engineering](https://give.bucknell.edu/engineering)



# Bucknell UNIVERSITY | College of Engineering

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 Bucknell University College of Engineering