WE ARE ACCELERATING EXCELLENCE

Here IS HOW

University at Buffalo
School of Engineering and Applied Sciences
Dear Colleagues,

I am pleased to share this report with you, highlighting the incredible new research and educational programs underway at the University at Buffalo School of Engineering and Applied Sciences over the past year.

As you can see from this report, the School is growing rapidly, with 20 new faculty hires this year and over 40 being recruited over the next two years. These new faculty will work across disciplinary boundaries to tackle complex challenges in clean energy, personalized health, autonomous systems, and artificial intelligence, to name a few. We are also expanding our footprint, with our new engineering and applied sciences building moving forward into the design phase.

These investments in engineering research and education are a sign of our unprecedented growth. We have surpassed $90M in research expenditures and over 3,000 graduate students this year – both records for the school. We are excited to be an integral part of the University at Buffalo’s vision to be one of the nation’s top 25 public research institutions.

We look forward to collaborating with our colleagues from academia, industry, and government on our research and educational initiatives. Together we can leverage our strengths to solve society’s most pressing problems and make a profound impact on local and global communities. Please reach out anytime!

Sincerely,

Kemper Lewis, PhD, MBA
Dean, School of Engineering and Applied Sciences
RANKED NO. 35 AMONG ALL PUBLIC UNIVERSITIES IN 2023 BY U.S. NEWS & WORLD REPORT

$90.2M IN ANNUAL RESEARCH AND RISING JULY 1, 2021 – JUNE 30, 2022

DEGREES AWARDED 2021-22
GRADUATE
730 MASTER’S
111 PhD
UNDERGRADUATE
1,130

DEGREE PROGRAMS
37 GRADUATE PROGRAMS
14 UNDERGRADUATE PROGRAMS
10 ARE ABET ACCREDITED

ENROLLMENT 2022-23
4,692 UNDERGRADUATES
3,106 GRADUATE STUDENTS

55 STUDENT CLUBS AND ORGANIZATIONS IN ENGINEERING AND APPLIED SCIENCES
8 New Transformational Projects

$7.5 million from the Department of Defense to lead a semiconductor chip development project
Electrical engineers are leading a project to develop new concepts for precision testing of semiconductor chips, a crucial cog in electronic products.

$2.3 million from the National Science Foundation to advance cyber manufacturing programs
Industrial engineers are using AI, big data and other tools to modernize manufacturing systems that will help an array of industries – from semiconductor manufacturing to 3D printing – improve quality, production and efficiency.

$3.5 million from the National Cancer Institute to detect lung cancer early
A biomedical engineer is developing accurate, fast, user-friendly and cost-effective liquid biopsy tests to detect lung cancer early.

$5 million from the National Science Foundation to help older adults identify online scams
Computer scientists are leading a team to create digital tools to help older adults better recognize and protect themselves from online deception and other forms of disinformation.
$1.5 million National Science Foundation grant to boost outcomes for STEM students

Designed to improve retention and graduation rates of high-achieving, low-income students pursuing STEM degrees, the new program will introduce social justice theory into the engineering curriculum.

$4.5 million from New York State to create a new research center to improve plastic recycling

A chemical engineer is leading a new center that focuses on reducing plastic waste, while also fighting climate change in New York and beyond.

$5 million from the U.S. Air Force to track space debris

Engineers are developing tools to analyze space domain data to improve the nation’s ability to monitor spacecraft and other objects such as debris and meteoroids.

$2.2 million from the Department of Energy to develop buildings that store carbon

Mechanical engineers have teamed up with civil and industrial engineers to develop eco-friendly insulation materials that can transform buildings into net carbon storage structures.
Our faculty continue to innovate in developing new graduate education programs that will train the next generation of problem-solvers. Our recently launched Master’s in Engineering Management Program rose 20 spots to No. 29 this year in U.S. News & World Report’s annual ranking of Best Online Master’s in Engineering Programs. The program was ranked at No. 49 last year, the first year of its eligibility. It also ranked No. 21 in the Best Online Programs for Veterans category.

New offerings this year include an interdisciplinary master’s program on Cybersecurity and PhD program in Engineering Education. Tied to the Center of Academic Excellence in Information Systems Assurance Research and Education (CEISARE), the Cybersecurity program will contribute to workforce development in government, industry and academia.

The PhD program is offered through the Department of Engineering Education. It prepares students to successfully conduct rigorous engineering education research, disseminate the results in the scholarly community, and transform findings into classroom practice.

Maria Lehman, P.E. (BS ’81) began her three-year term as president of the American Society of Civil Engineers (ASCE) in 2023. She will also serve as vice chair of the Board of Direction of ASCE, a multinational organization with over 150,000 members throughout the world.

Lehman has been involved with ASCE since her time as a civil engineering student at the University at Buffalo and has ascended to various offices within the organization as a professional engineer.

She is currently the Infrastructure Market Leader for GHD Inc.’s U.S. market and previously held leadership positions at Parsons, the New York State Thruway Authority and in Erie County, N.Y.

She has won numerous awards including the ASCE President’s Medal, and was elected to the National Academy of Construction’s class of 2022.

Civil engineering alumna leads ASCE

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Students participated in Design/Build/Fly, an international competition sponsored by AIAA that challenged student teams from around the world to design, fabricate and demonstrate the flight capabilities of an unmanned, electric powered, radio-controlled aircraft in a particular mission. Members of the team traveled to Wichita, Kansas, to participate in the event, where they earned the Stan Powell Memorial Award for Most Meaningful Lessons Learned at AIAA Design/Build/Fly.

“We would not be able to enjoy our level of experiential learning and life-altering career opportunities without the support of the SEAS Partnership Program.”

Alexander A. Podvezko, UB AIAA Student Chapter president and engineering science major

Thank you SEAS Partners!
I’ve felt very well supported so that I could hit the ground running and start making an impact. Not only do we have incredible staff, bright and motivated students, and brilliant faculty, there is a strong and welcoming community that connects everyone here.

— Austin Angulo
The fact that UB offers degrees in engineering to social sciences and medicine leads to a diverse and vibrant campus with a lot of positive energy. This opens the door to cross-department collaborations among the faculty, which usually lead to exciting research results.

- Seyyadali Hosseinalipour

**ELECTRICAL ENGINEERING**

**Seyyadali Hosseinalipour**  
Assistant Professor  
PhD, Electrical Engineering, North Carolina State University  
Research interests:  

**ENGINEERING EDUCATION**

**Eunsil Lee**  
Assistant Professor  
PhD, Engineering Education, Arizona State University  
Research interests:  
Sense of belonging, inclusion in engineering, graduate education, diversity in students’ citizenship, faculty and peer interactions.

**Some**
I have felt truly welcome and appreciated at UB. I have met with faculty from different institutes, committees and academic schools, and I see awesome opportunities to collaborate with many of these individuals to help expand and strengthen my research program.

- Diana Ramirez-Rios
I am excited to welcome these outstanding scholars to the SEAS community. They will lead us in new directions and push us to ever greater achievements in research and education that will help our flagship university become a top 25 public research institution.

- Kemper Lewis, Dean

We’re Hiring
40+ Faculty

SEAS is leveraging an unprecedented faculty hiring opportunity to build on existing strengths at the University at Buffalo in the following areas:

• AI and Data Science
• Clean Energy
• Personalized Health and Wellness

Leonid Khinkis
Associate Professor of Teaching, Computational and Data-Enabled Science
PhD, Mathematical Science, Voronezh State University

Research interests:
Nonlinear regression with applications to pharmacokinetics/pharmacodynamics, design of experiments and deep learning.

Apply here:

256 FULL-TIME FACULTY AND GROWING FAST

• 4 NSF CAREER AWARDS IN 2022; 42 Awardees Among Current Faculty
• 18 Faculty Named Fellows of Professional Societies in Three Years
A $20-million National Science Foundation grant will establish a national institute at the University at Buffalo to develop AI systems to help the millions of American children with speech and language disorders. The five-year award is led by Venu Govindaraju, a SUNY Distinguished Professor in the Department of Computer Science and Engineering, and will include more than 30 researchers from nine universities. Members of UB’s AI Institute for Exceptional Education team include, from left: Ranga Setlur, Jinjun Xiong, Venu Govindaraju and Letitia Thomas. Photo: Douglas Levere