

# BUCKEYE ENGINEERING



Building for innovation



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

**INSIDE /** HONORING EXCEPTIONAL ALUMNI  
CONNECTING KIDS WITH SCIENCE  
REINVENTING THE HEARING AID

# Construction commences on engineering complex

Construction is underway on the 124,000-square-foot Biomedical and Materials Engineering Complex (BMEC)—a state-of-the-art facility offering unlimited opportunity for discovery.

Scheduled to open in summer 2020, the complex will be home to the Departments of Biomedical Engineering and Materials Science and Engineering. The new space will showcase the exceptional teaching and research happening in the heart of The Ohio State University's main campus, while inspiring life-saving, unprecedented advances in the rapidly growing field of biomaterials.

"The Biomedical and Materials Engineering Complex will prepare Buckeye engineers to think creatively, problem solve and identify opportunities in ways that increase productivity, tackle global challenges and revolutionize products, services and systems like never before," said Dean David B. Williams, the Monte Ahuja Endowed Dean's Chair.

Phase one construction will transform the aging engineering buildings on West 19th Avenue into a cutting-edge five-floor facility. The \$59.1 million project is a complete interior and exterior renovation fueled by sizeable

investments from the state and university, plus a \$10 million philanthropic target.



University and college leaders and alumni celebrated the project's launch on November 3, 2018, with a live (and loud!) demonstration of an explosive welding technology.

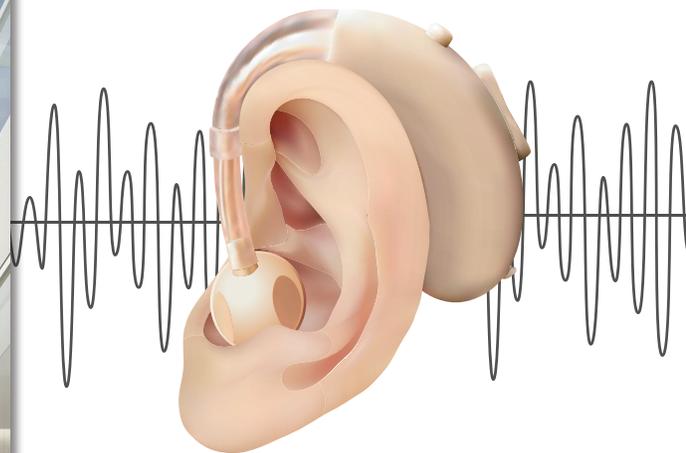
Developed by Ohio State engineers, vaporizing foil actuator welding uses less than one-fifth the energy of common welding techniques while creating bonds that are 50 percent stronger.

Co-location of these two engineering departments and their close proximity to other campus collaborators will lead to even more life-changing materials innovations impacting health care, transportation, energy and more.

The project will also enable the College of Engineering to meet a long-time goal of bringing the biomedical engineering academic program to central campus.

"For undergraduates, the location on central campus will be transformative," said Biomedical Engineering Chair Samir Ghadiali. "With the Fisher College of Business across the street, there will be more opportunities for entrepreneurial collaboration."

**READ MORE:** [go.osu.edu/be24a](https://go.osu.edu/be24a)



## Reinventing hearing aids with deep learning

Inspired by his mother's struggle to hear conversations at the dinner table, Computer Science and Engineering Professor DeLiang Wang has been working for two decades to help the hearing-impaired understand speech in noisy environments.

Only one in five people who would benefit from a hearing aid use one. Those who do are often frustrated by the device's inability to distinguish speech when multiple people are talking or there is background noise. But there is new hope for hearing aid users, thanks to a deep learning program Wang and his team have developed. It separates speech from noise and automatically adjusts the volumes of each. "We believe this approach can ultimately restore a hearing-impaired person's comprehension to match—or even exceed—that of someone with normal hearing," Wang said.

**READ MORE:** [go.osu.edu/be24b](https://go.osu.edu/be24b)



## College honors 15 exceptional alumni

A renowned aerospace engineering educator, ExxonMobil's highest ranking welding/materials engineer, a 2018 recipient of China's Future Science Prize, and the chair of UCLA's architecture and urban design department are among the 15 alumni honored during the 2018 Excellence in Engineering and Architecture Awards.

"We're so very proud of each and every one these distinguished alumni, and the tremendous impact they have on our world through their teaching, entrepreneurship, leadership, innovation and service," said Dean David B. Williams.

The awardees shared Buckeye memories and words of thanks at the celebration event. Here are a few highlights.

John D. Anderson Jr.: "I want to thank the faculty of the Department of Aeronautical and Astronautical Engineering during the 1960s at Ohio State. Those faculty members taught me

everything about everything. I stand on the shoulders, honestly, of those giants."

Cullen Buie: "I was reflecting and thinking about what's special about Ohio State. It's not so much what you learn, but it's how you learn it and who you learn it from ... It's teamwork ... It's the ability to work with other people. It's the ability to persevere and it's also the ability to really dream big."

Jennifer Carter: "This award reminds me that my mission to motivate the next generation of engineers, scientists and good human beings has not gone unnoticed and is appreciated by my alma mater."

William Murdock: "Like so many of the award winners tonight, I have an enthusiasm and a love and an admiration and respect for this university. It has shaped my life. It has shaped my values. It has shaped my career."

**READ MORE:** [go.osu.edu/be24c](http://go.osu.edu/be24c)



### 2018 HONOREES

**Benjamin G.  
Lamme Meritorious  
Achievement Medal**

John D. Anderson Jr.  
'66

**Meritorious  
Service Citation**

John Lindberg '84

**Texnikoi Outstanding  
Alumni Award**

Cullen Buie '03  
Jennifer L. W. Carter '12

**Distinguished  
Alumni Awards**

Shellie Porter Caudill  
'00

Daniel M. Coombs '78

Douglas P. Fairchild  
'80, '82, '95

Dennis A. Guenther  
'71, '74

J. William (Bill)  
Haywood '78

Kevin Hrusovsky '83

Burn J. Lin '65, '70

William Murdock '99

Richard E. Parent  
'73, '77

Heather Roberge  
'93, '95

Steve Stokey '87



## Flowing in a new direction

On a sunny fall morning in north Columbus a group of Buckeye engineers were surrounded by 56 excited eighth-graders as they measured water outflow in a neighborhood rain garden. As researchers dumped buckets of water into the rain garden—simulating what would happen during a heavy rainfall—the eighth-graders were tasked with timing both the inflow of the water into the garden and its outflow into a nearby drain.

The event was the culmination of a monthlong outreach project focused on eco-friendly stormwater management, a collaboration between an Ohio State team led by Food, Agricultural and Biological Engineering Professor Jay Martin and Indianola Informal K8 science teacher Jared Laughbaum.

“This project has really taught all of us about green infrastructure and our water quality in Columbus,” explained eighth-grader Lindsay. “We now know what’s wrong and how to fix it.”

The enthusiasm Lindsay and her classmates showed during the project energized its organizers.



“I’ve taken a lot of pleasure in working with the middle schoolers,” said Martin, who also leads two research studies on the city’s green infrastructure project. “It’s not something I usually do and to see the next generation take an interest and learn from it has been inspiring.”

**READ MORE: [go.osu.edu/be24d](https://go.osu.edu/be24d)**

## When is an airport more than just an airport?

*When it: prepares the next generation of pilots and aviation industry professionals; serves as a welcoming front door to an amazing university and vibrant city; inspires children in our community to dream of flying; and advances critical research in aviation safety, infrastructure and efficiency.*

The Ohio State University Airport at Don Scott Field has multitasked in this fashion for years and now its appearance befits its far-reaching impact. Thanks to a generous gift from the Austin E. Knowlton Foundation, The Ohio State University Airport has undergone a beautiful transformation. A new executive terminal and aviation learning center recently opened its doors and is immediately making a positive impact on our students, tenants, visiting pilots and community partners. Already home to a world-class



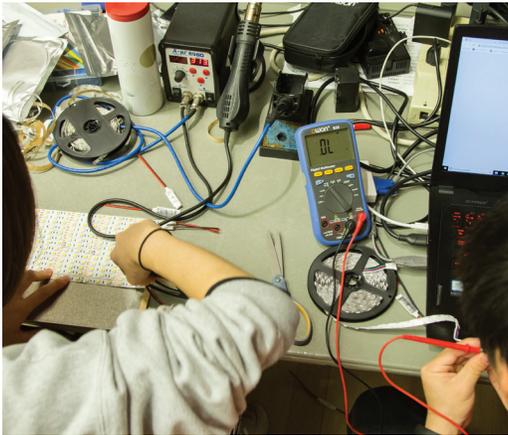
academic and research program, Ohio State now leads the nation in experiential aviation education.

Owned and operated by the College of Engineering, Ohio State’s airport has served students and the Columbus community since 1942.

**READ MORE: [go.osu.edu/be24e](https://go.osu.edu/be24e)**

# CREATIVE CODING

HackOHIO 2018—Ohio State’s sixth and largest annual hackathon—  
brought together 764 students for 24 hours of coding, building  
and innovating. **READ MORE: [go.osu.edu/be24f](http://go.osu.edu/be24f)**





## ALUM'S GIFT SUPPORTS SPINE RESEARCH

Alumnus John A. White Jr. '69 and his wife Mary recently gave \$300,000 to support the Ohio State Spine Research Institute's efforts to prevent, evaluate and treat spine disorders. The generous gift will add new facilities to the institute's laboratory space, including a dedicated area for clinical biomechanics spine studies and a second high end data collection space that will enable researchers to run several complex research studies simultaneously.



## EMBRACING ESPORTS

Ohio State's first-of-its kind comprehensive esports program combines academics, collegiate competition and multidisciplinary research to give students myriad opportunities to be part of the booming industry.



## HEALING TOUCH

A \$2.3 million NIH grant will enable Professor Daniel Gallego-Perez to advance novel technology that repairs and restores tissue—including organs, blood vessels and nerve cells—with a single touch.

## PATENT-WORTHY PROTOTYPE

Landscape architects and engineers teamed up to create a floating forest in buoyant concrete vessels to reduce harmful algal blooms. Now their design is in review for a patent.

## BRIDGING THE GAP

For the past 15 years, ACM-W at Ohio State has been dedicated to supporting fellow women in computing.



For the full scoop, visit  
[go.osu.edu/be24n](https://go.osu.edu/be24n)



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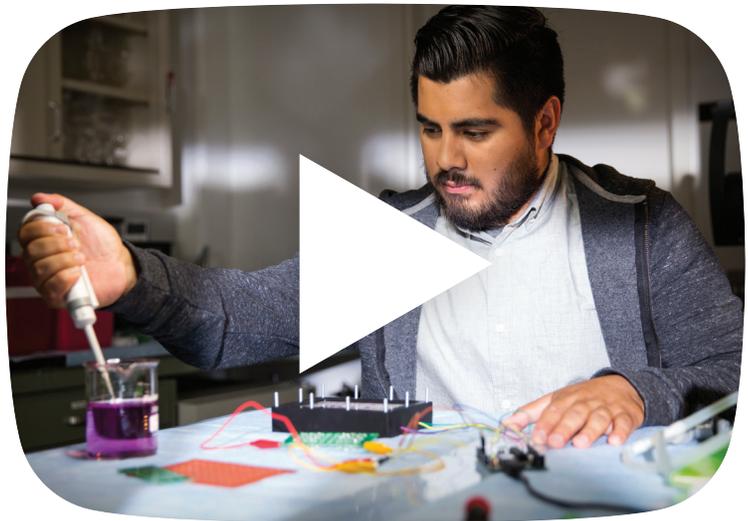
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An Ohio State education helped Buckeye engineer Wilson Flores '18 pioneer new frontiers. Watch his story in this inspiring Ohio State commercial. ***go.osu.edu/be24p***

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