

# buckeye/engineering

WINTER 2018 / ISSUE 20

## Floating new ideas for the river corridor

### INSIDE/

PAYING FORWARD TOGETHER

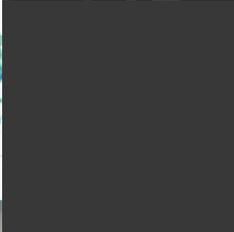
CLEAN ENERGY R&D BREAKTHROUGH

BUCKEYE ENGINEERS GO GLOBAL



**THE OHIO STATE UNIVERSITY**

COLLEGE OF ENGINEERING



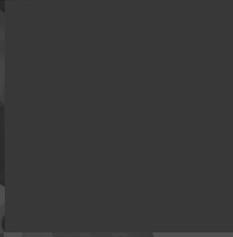
## Town-gown partnership reimagines a river

A sun-washed beach adjacent to Ohio Stadium. A braid of bridges and paths weaving from campus to downtown. Bicycles and modern trains zipping along a path once carved by a major highway. These are just some of the exotic, sometimes radical visions architects and designers presented as part of the Olentangy River Corridor Charrette.

Sparked by President Michael V. Drake's question of how to better connect the city and Ohio State, a dozen current Knowlton School architecture, landscape architecture and city and regional planning students worked over a two-day period with representatives from architecture and design firms NBBJ, West 8, REALM, TLS Landscape Architecture and MKSK. Ohio State, the Columbus Partnership, Nationwide Realty Investors, MORPC and the City of Columbus sponsored the design challenge.

Although none of the projects is ready to go beyond the dreaming stages, the charrette was the kind of thought experiment a modern land-grant university can undertake when it has the prominence and connections of Ohio State.

**Watch and learn more: [go.osu.edu/reimagine](https://go.osu.edu/reimagine)**



## Banding together to help fellow Buckeyes

The Minority Engineering Program (MEP) was more than a helpful academic program—it was a second family, explained Kevin Chenault '17. One that supported him not just academically, but also financially.

He's one of many MEP alumni who credit the program—especially the efforts of its longtime leader, former Assistant Dean Minnie McGee—with putting them on the path to success. When the MEP Alumni Advisory Board asked fellow alumni to join them in supporting two new scholarship endowments in McGee's honor, the response was overwhelming. By the end of fiscal year 2016, 172 donors had donated more than \$215,000 to the funds.

By improving students' financial lives, the board members saw the endowments as an extension of the mentoring, coaching and networking support the program has provided to nearly 2,000 underrepresented minority students since it launched in the 1970s.

Acknowledging that today's students are facing as big or bigger challenges than ever, MEP board Chair Herbert Robinson '77 hopes the scholarships will reduce students' debt burden and the stress of paying for their final years of school, and enable them to achieve their dreams. "I hope they will recognize what we have learned, which is that you cannot do it on your own, and that they will begin to give back."

**Learn more:** [go.osu.edu/mepfamily](http://go.osu.edu/mepfamily)



Photo: Herbert Robinson (center) chats with Minority Engineering Program students.



## Clean energy innovation good for environment and industry

Professor Liang-Shih Fan and a team of engineers are developing technologies that have the potential to economically convert fossil fuels and biomass into electricity without emitting carbon dioxide. Their chemical looping process uses metal oxide particles in high-pressure reactors to “burn” fossil fuels and biomass without the presence of oxygen in the air. After combustion, the particles take back the oxygen from air, and the cycle begins again.

The Buckeye engineers discovered a way to greatly extend the lifetime of the particles that enable the chemical reaction to transform coal or other fuels to electricity and useful products, which in turn enhances commercial viability.

“The particle itself is a vessel, and it’s carrying the oxygen back and forth in this process, and it eventually falls apart. Like a truck transporting goods on a highway, eventually it’s going to undergo some wear and tear. ... We devised a particle that can make the trip 3,000 times in the lab and still maintain its integrity,” said Research Assistant Professor Andrew Tong.

The technology also provides a potential industrial use for carbon dioxide—after it’s scrubbed from power plant exhaust—as a raw material for producing useful, everyday products.

Taken together, Fan said, these advancements bring Ohio State’s chemical looping technology many steps closer to commercialization.

**Learn more and watch:** [go.osu.edu/looping](http://go.osu.edu/looping)

## College recognizes 18 alumni for distinction, service

A pioneer in the field of bioengineering, an engineer who worked on every in-production Boeing commercial airplane and an innovator in the area of power grid monitoring technology are among the 18 college alumni honored during the 2017 Excellence in Engineering and Architecture Awards.

Lifetime Achievement Award for Leadership recipient Robert M. Nerem (MS '61, PhD '64, AAE) is founding director of the Parker H. Petit Institute for Bioengineering and Bioscience at Georgia Tech and has spent much of his 40-year career in bioengineering exploring critical topics such as blood flow in large arteries, the role of hemodynamics in the onset of atherosclerosis, and tissue engineering and regenerative medicine.



Three additional signature awards were presented: John M. Shepherd (BS '58, CER) received the Benjamin G. Lamme Meritorious Achievement Medal; Doug Ball (BS '74, MS '75, AAE) was awarded the Meritorious Service Citation; and Adina D. Sterling (BS '02, CHE) received the Texnikoi Outstanding Alumni Award.

Fourteen alumni received Distinguished Alumni Awards: Glenn D. Brunner (MS '90, BME), Tom DeFanti (MS '70, PhD '73, CIS), Eduardo Falcon (MS '89, GEO), Bassam Homsy (BS '84, ME), Kris Joshi (BS '61, AAE), Mary C. Juhas (PhD '89, MSE), Charles Koontz (BS '85, ISE), William C. Leipold Jr. (BS '72, CHE), Yilu Liu (MS '86, PhD '89, EE), Joe O'Neal (BS '55, MS '55, CE), Peter Schubert (BS '78, ARCH), Laura Solano (BS '83, LARCH), John A. White (PhD '70, IE) and Daniel L. Wieczynski (BS '90, ME).

**Learn more:** [go.osu.edu/aa20](http://go.osu.edu/aa20)



## Global perspectives influence learning and leadership

Being part of a service-learning trip to Ghana during her junior year at Ohio State was life-changing for civil engineer Rachel DuBois '17. She helped design and install an affordable biosand filter to bring clean, safe water to residents of a remote village whose only water source was contaminated with E. coli and salmonella.

The trip not only gave DuBois an opportunity to work internationally on the clean water crisis, it also showed her that she could succeed in her future career. "My first trip to Ghana and my involvement on a clean water project really cemented my love for engineering and my passion to get involved in international engineering."

She's one of a small but growing number of Buckeye engineers who have completed the college's Global Option in Engineering program, which infuses international perspectives into Ohio State's engineering curriculum. Students who complete the program receive an Engineering Global Option distinction on their transcript—something that not only acknowledges the valuable transferable skills learned, but can also lead to job offers.

"It was something that made me stand out from other candidates and helped show my employer how I could handle unique circumstances" said DuBois, who is now a civil engineer in CH2MHill's Water/Wastewater Sector.

**Learn more:** [go.osu.edu/globale](http://go.osu.edu/globale)

*Photo: In Marwa, Tanzania, Rachel DuBois (back row, third from right) and fellow Buckeye engineers worked to design a water treatment system for the rural village.*

# The Impact of Philanthropy

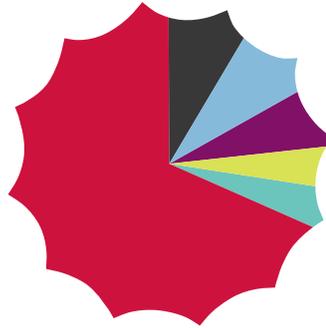
Thanks to your generous support, gifts to the College of Engineering in fiscal year 2017 are making a difference today and every day.



**\$48,646,652** raised

## Gifts Supported:

<b>Research &amp; Innovation</b> \$33,290,015	<b>Facilities &amp; Equipment</b> \$3,170,368
<b>Student Financial Aid</b> \$4,221,736	<b>Faculty &amp; Staff Support</b> \$2,094,489
<b>Program Support</b> \$3,973,318	<b>Impact Funds</b> \$1,896,726



## A few examples of the impact these gifts made:



1,427 students received scholarships from the College of Engineering



Funded research that enables faster, more accurate cancer diagnosis



750 hackathon students gained hands-on experience creating tech solutions in 36 hours

## briefs:

**New study could revolutionize heart valve technology**

[go.osu.edu/hvalve](http://go.osu.edu/hvalve)

**Program offers new perspective on career paths for women students**

[go.osu.edu/tourw](http://go.osu.edu/tourw)

**Biomaterials advances show promise for medical applications**

[go.osu.edu/biopromise](http://go.osu.edu/biopromise)

**Marathon gift fuels success for students**

[go.osu.edu/mpcgift](http://go.osu.edu/mpcgift)

## give:

**Pay forward and make an impact in 2018!**

[giveto.osu.edu/engineering](http://giveto.osu.edu/engineering)

## connect:

[engineering.osu.edu](http://engineering.osu.edu)

[twitter.com/OSUengineering](https://twitter.com/OSUengineering)

[go.osu.edu/COEin](http://go.osu.edu/COEin)

[facebook.com/OSUengineering](https://facebook.com/OSUengineering)



**THE OHIO STATE UNIVERSITY**

COLLEGE OF ENGINEERING

122 HITCHCOCK HALL  
2070 NEIL AVE.  
COLUMBUS, OH 43210-1278

NON-PROFIT ORG.  
U.S. POSTAGE

**PAID**

COLUMBUS, OHIO  
Permit No. 711



Not receiving  
**bucketeye/engineering**  
in your email inbox?

Send your contact information to  
***clevenger.87@osu.edu***  
to receive two additional  
email issues per year.