

Engineers Week

Every year, CWRU School of Engineering hosts a spectacular celebration for Engineer's Week, and the planning for this school year's has already begun.

Engineer's Week is a nationally recognized celebration of engineers for all that they do and provide for our world. The national theme for this year is Creating the Future, and Case Western has decided on *Engineering Through the Ages* as our theme. The celebration will start February 19, 2023, and end on February 25.

Some of the events already planned for CWRU include a trivia night by the Case Engineer's Council, a boat race by the Society of Hispanic Engineers, and CWRU's third annual Engineering Game Show. The game show is a competition of trivia and wits between teams of students, alumni, and faculty, and it is one of the most-attended events for Case Western's E-week.

Much more planning and organizing will be done before February and be sure to keep a lookout for the Spring newsletter for an E-week update!



Engineer's Week Competition: Last Engineer Standing



Engineering Peer Advisors with Engineering Dean Ragu Balakrishnan and Assistant Dean Debbie Fatica

Engineering Peer Advisors

A brand new cohort to start the year off strong

This year there are fourteen Engineering Peer Advisors. Among them, there are two Mechanical, Chemical, and Civil Engineering majors, three Biomedical Engineering majors, and one each of Material Science & Engineering, Polymer Science, Computer Science, Systems & Control Engineering, and Electrical Engineering.

The Peer Advisors are the jack-of-all-trades for CSE students in terms of ways they can help students. CSE students can go to the PAs for major/minor selection; scheduling help; resources for experiential options such as internships, co-ops, and research; and linkages to campus resources.

The Peer Advisors are also planning an event for Engineers Week, and after the huge success of their event last year—the Last Engineer Standing—students are really looking forward to what they come up with this time.

The PAs also organized another bringing the Engineering Student Organizations together: a fall carnival.

The event was a huge success and a great opportunity for the student organizations to create their own activities and promote their organizations while interacting with one another. All students were welcome to participate in the event, too, not just engineering majors.

The Peer Advisors built a pumpkin slingshot for the carnival, and other attractions included pumpkin painting, darts, apple stacking, a food truck, apple cider, and pumpkin-pong. It was a great display of fall-themed fun, and everyone left with a smile on their face.

Application deadlines

Spring Semester: **December 1**

Fall Semester Early Plan: March 15

Fall Semester Regular Plan: June 1

Research

Find out what's been going on at CWRU on the research side of things. From energy storage to smart technology, there's bound to be something to pique your interest!

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Cleveland and More

Learn about fun things to do around Cleveland!

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Research

\$12 million boost for energy storage research center

The U.S. Department of Energy (DOE) has awarded Case and its partners \$12 million “to advance their work to find innovative solutions for large, long-lasting energy storage” for renewable energy sources. This boost follows the 2018 award of \$10.75 million that established the Breakthrough Electrolytes for Energy Storage (BEES) Center at Case.

Case has partnered with the University of Tennessee, Knoxville; Texas A&M University, Hunter College, University of Notre Dame; Columbia University; Ohio State University, New York University, and Pacific Northwest National Laboratory for this project.

The Case Professors working on this include Robert Savinell (BEES Director,

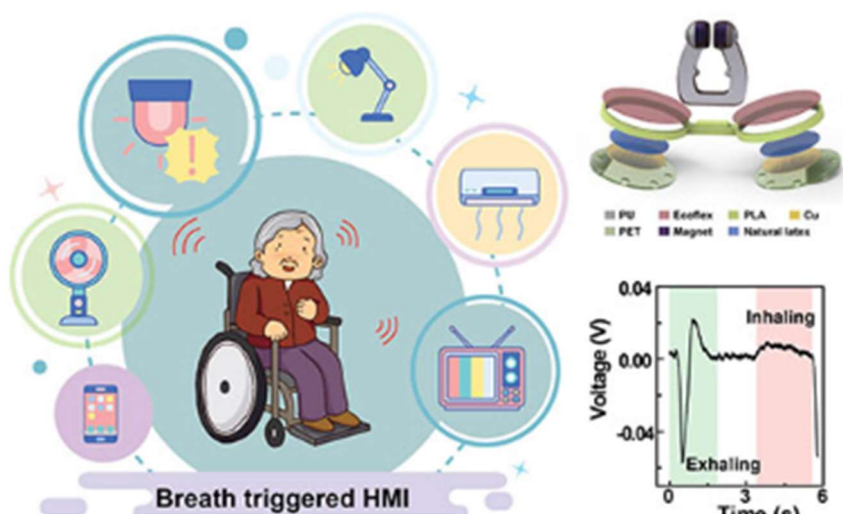
Chemical Engineering), Rohan Akolkar, Burcu Gurkan, Jesse Wainright, Robert Warburton, and Clemens Burda.

BEES focuses on the application and use of electrolytes for energy storage. The CWRU researchers are specifically interested in the fundamental chemistry of electrolytes that are (1) based on chemical compounds with strong hydrogen bonds and (2) those based on microemulsions, like oil, that are dispersed in water. Electrolytes are “considered high-performance in both energy and power density, safe, non-volatile, low-cost, and environmentally friendly.” BEES researchers are hoping to make electrolytes the next generation of flow batteries.

The DOE research effort is, again, primarily focused on renewable energy storage rather than uses for cars or other smaller applications. “Growth in solar and wind power has historically been stunted by the lack of storage capacity,” and the electrolyte batteries are hoping to combat that. To learn more, follow the link listed below.



Article link: <https://thedaily.case.edu/12-million-boost-for-energy-storage-research-center/>



An illustration from the academic paper showing how the device (upper right) might be used.

Article link: <https://thedaily.case.edu/operating-a-smart-home-by-breath-control>

Operating a ‘smart home’ by breath control

Assistant professor of Mechanical & Aerospace Engineering Changyong “Chase” Cao is leading research on a small, self-powered device that fits into the nostrils and can be used by anyone breathing.

Cao said that most “smart” technology (Bluetooth, etc.) is great, but not accessible to many people with speaking or mobility disabilities. This breath-powered device would allow those people to access “smart” technology, and it can even send medical alerts directly from it.

The device works by utilizing triboelectric nanogenerators, or triboelectrification. TENGs “convert mechanical energy harvested from the environment to electricity” that can then be used to power the device. The natural energy comes from rain, wind, and body movements, e.g. breathing. Cao also said this technology could potentially be available in three to five years.

Applying AI to prevent the next pandemic

Case Western is leading a group of researchers from Cleveland State and the Cleveland Clinic that are aiming to develop a new model for pandemic prediction. Research is being led Jing Li (Leonard Case Jr. Professor of Computer & Data Science at CSE) and is supported by the National Science Foundation (NSF).

The focus of the new model is on “core public health tools and strategies for pandemic early detection, genomic variation analysis, surveillance, contact tracing, mitigation and response.” Additionally, the team is taking privacy concerns very seriously while gathering this data.

The NSF awarded the team \$1 million planning grant that is within its Predictive Intelligence for Pandemic Prevention initiative.

Follow the link below for more information.



Article link: <https://thedaily.case.edu/applying-ai-to-prevent-the-next-pandemic>

Cleveland Art Museum



CMA Website:

<https://www.clevelandart.org/exhibitions/current>

The Cleveland Museum of Art is always rotating their exhibits to bring people a diverse selection of art to peruse throughout the year. Some of their collections are permanent, and others are only around for a few months.

Some of the interesting exhibits they are showing right now include impressionistic paintings, Native North American Art, and textiles from ancient Andean civilizations.

The exhibit called “Impressionism and Modernism: The Keithley Collection” includes impressionist, post-impressionist, and modern European and American paintings. This collection was provided to the museum through the Keithley family, and it will be up until the beginning of January next year.

Another interesting exhibit up currently is the one on Native Northern American art. This is a semi-permanent collection at the Museum, and some of the newer pieces being rotated in include two works by contemporary Inuit artists from the Canadian Arctic. One of the pieces is a stone print from 1972. These newer pieces will be on display until December 4th.

If textiles are more your speed, you should check out the exhibit on Ancient Andean textiles. This collection showcases many different cultures and peoples that are all tied together through living in or around the Andes mountains. The collection includes pieces from the Nasca Culture (100 BC - AD 650), the Wari Empire (AD 600-1000), and Moche Culture (AD 200-850).

Follow the link for more information!

Playhouse Square

Located only a few miles from campus, Playhouse Square is a bright hub of entertainment for all those that enjoy theater.

This season is full of incredible productions including *Sweeney Todd* which is running through November 13th. Other shows happening this fall semester include *Swan Lake*, *Romeo and Juliet*, *CATS*, and so many more. Check out the Playhouse Square website linked below for more information.



Playhouse Website:

<https://www.playhousesquare.org/events-tickets/event-calendar>



A tiger exhibit at the Cleveland Metroparks Zoo.

Even more things to do

If you're looking for more to do besides the CMA and Playhouse Square, look no further. Cleveland has so much to offer that you're bound to find something that interests you!

The [Cleveland Botanical Gardens](#) are located right off campus behind the CMA, and students get a discount on tickets. You can stay warm in the winter by walking through the butterfly room!

The [Rock and Roll Hall of Fame](#) is only about 6 miles downtown from campus. This is a spot you don't want to miss if you love music!

[Lakeview Cemetery](#) is also a short walk from campus, and while walking through a cemetery might not sound appealing, the views and the history you can find in there are astonishing. Be sure to look for the [Haserot](#) angel and Rockefeller's grave!

The [Cleveland Metroparks Zoo](#) is another huge attraction that you can go to. The Zoo is part of a large network of Metroparks across Cleveland, and it is one of the best Zoo's in the nation!

If you're into baseball, you might want to check out [Progressive Field](#) to see when the Guardians are playing. If football is more your speed, check out [First Energy Stadium](#) for more info on the Browns. Or if basketball is the sport for you, check out [Rocket Mortgage Field House](#) for info on the Cavaliers.