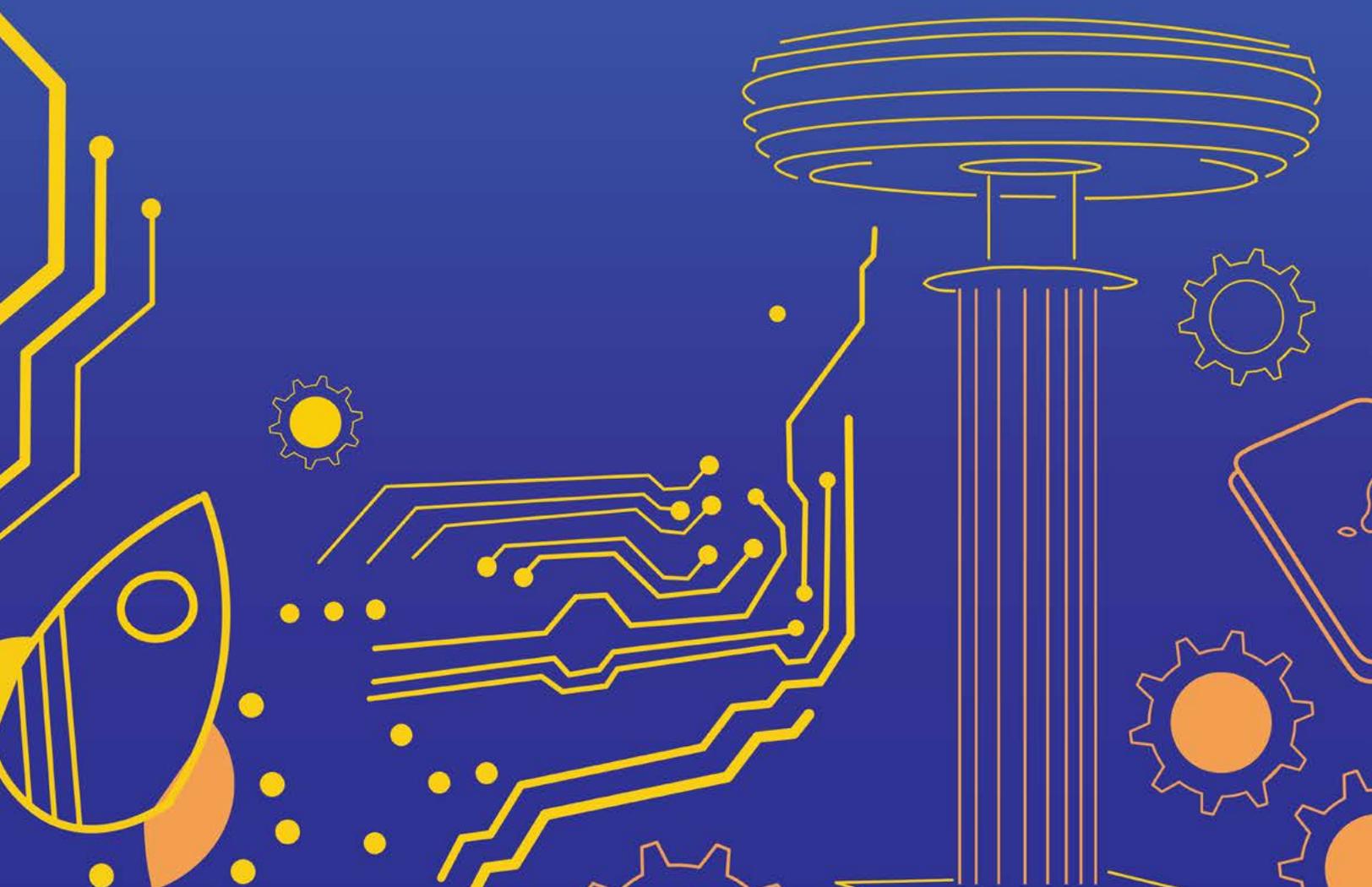


UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

EOH

DRAFTING THE FUTURE



IMAGINE THE IMPACT



If we could provide customizable, 3D-printed prosthetics to every person without a limb.

Learn more about our university program at ti.com/university.
Discover our new TI Robotics Systems Learning Kit at ti.com/rslk.

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SCHEDULED EVENTS

- **Middle School Design Competition**
ECEB 2nd and 3rd floors | Sat 9am - 2pm | Pg 6
- **High School Design Competition**
ECEB, 3002 | Fri 8.30am - 2pm | Pg 6
- **Keynote Speaker: Parisa Tabriz, Google’s Security Princess**
ECEB, 1002 | Fri 4.30pm | Pg 8
- **Midwestern Robotics Design Competition**
Kenney Gym Annex | Fri 9am - 4pm, Sat 9am - 3pm| Pg 9
- **Tesla Coil Concert**
Bardeen Quad | Fri 7:30pm | Pg 11
- **Robobrawls**
Bardeen Quad | Fri, Sat 9am - 4pm | Pg 19
- **Dorm Room Burn Demo**
Bardeen Quad | Fri, Sat 10am - 2pm | Pg 19
- **Micro and Nanotechnology Laboratory Tour**
Materials Research Lab | Fri 9am, 10am, 11am, 1pm, 2pm, and 3pm | Pg 24
- **NCSA Screening: “Seeing the Beginning of Time”**
NCSA Auditorium, 1122 | 9:30am, 11:30am, 1:30pm| Pg 31
- **Concrete Crusher**
Crane Bay, Newmark | Fri, Sat 9am - 4pm| Every 15-20 minutes | Pg 33
- **Startup Showcase**
Siebel Atrium | Fri, Sat 9am - 4pm | Pg 33



Visit the EOH web app for live updates on events! Scan QR code here!



Lot B-22

Traffic and Safety

Though EOH takes place on much of the campus, not all rooms of all buildings are for EOH use so we ask attendees to please not enter those rooms not mentioned in this Visitor's Guide.

Parking

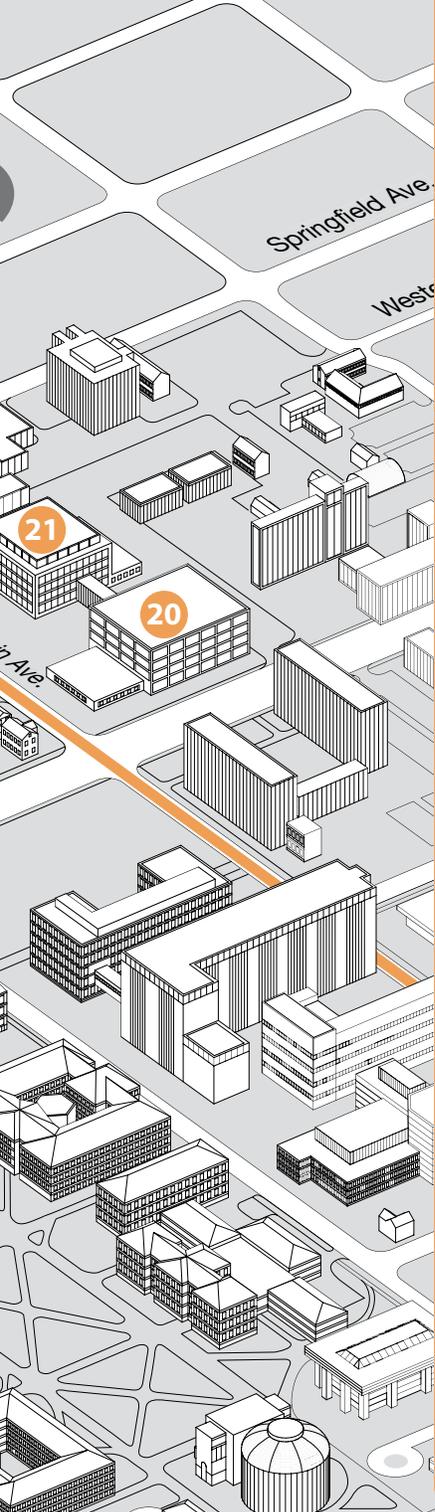
Parking is available at:
Lot E-14 (First St. and Kirby Ave) (Free)
B-22 (Goodwin Ave. and University Ave) (Free)
JSM Apartments (Wright St. and Healey St.) (\$1/hour)

Shuttles

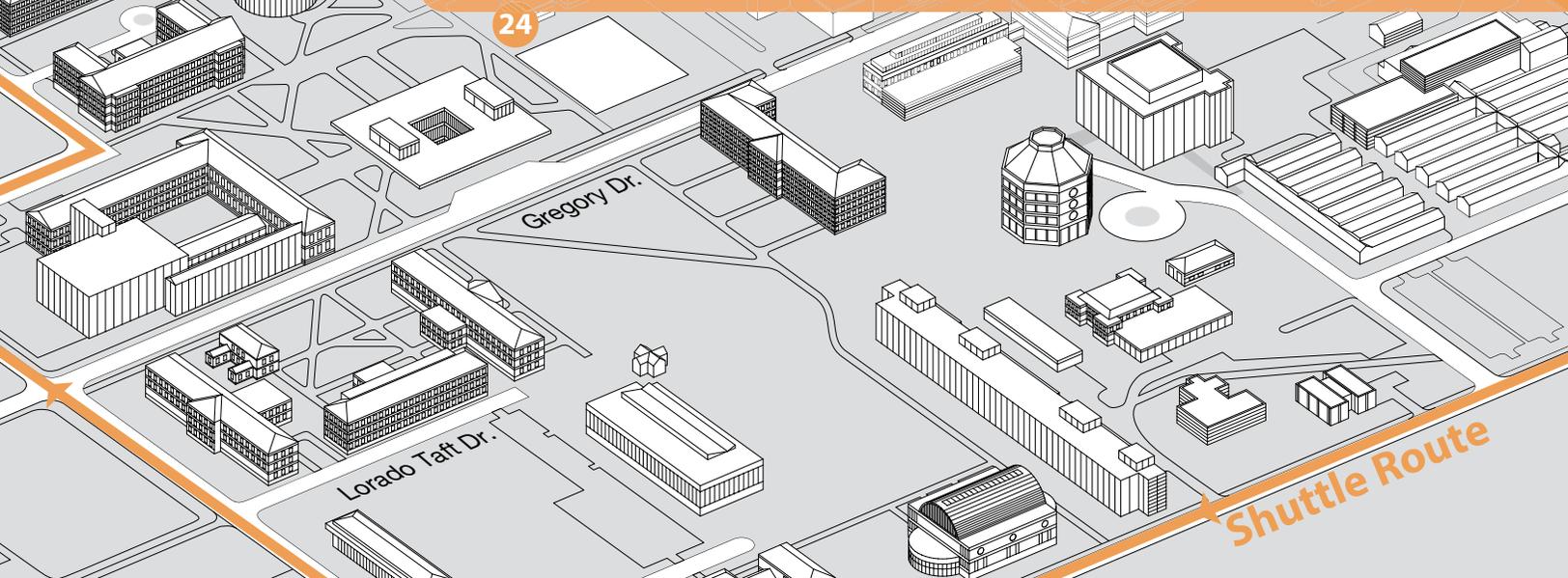
Shuttles operated by Peoria Charter will run every 10-15 minutes during EOH hours with stops at:
➤ Wright St. between Talbot Lab and Kenney Gym
➤ Lot B-22 at Goodwin Ave. and University Ave.
➤ Siebel Center on Goodwin Ave.
➤ Lot E-14 at First St. and Kirby Ave.

Lot E-14

EOH 2018 Map



1. Beckman Institute
 2. CSL Studio
 3. Electrical and Computer Engineering Building (ECEB)
 4. Coordinated Science Lab (CSL)
 5. Hydrosystems Lab
 6. National Center for Supercomputing Applications
 7. Micro & Nanotechnology Lab (MNTL)
 8. Newmark Civil Engineering Lab
 9. Siebel Center
 10. Kenney Gym Annex
 11. Digital Computer Lab (DCL)
 12. Grainger Engineering Library
 13. Grainger Loading Dock
 14. Talbot Lab
 15. Mechanical Engineering Lab (MEL)
 16. Engineering Hall
 17. Materials Science & Engineering Building (MSEB)
 18. Transportation Building
 19. Mechanical Engineering Building (MEB)
 20. Loomis Lab
 21. Materials Research Lab (MRL)
 22. Illini Union
 23. Natural History Building
 24. Observatory
- VB** Visitor's Booth
SS Shuttle Stop
CC Central Committee Tent
+ Illini Emergency Medical Services
 Parking Lot



EVENT HIGHLIGHTS

Tours

General tours

Have an engineering student tour guide show you the best side of campus and EOH.

- » Friday and Saturday
- » From 9am to 4pm
- » Duration 30 minutes
- » Meet at Quad side of Grainger Library

Custom tours*

For groups registered for the custom tour, please contact your respective student tour guide.

*Only offered on Friday

Visitor's Booth

Have some questions? Need another visitor's guide? What about exhibit suggestions? Find our volunteers to answer your questions at the following locations:

- » Grainger Library (Quad side)
- » North Quad

High School Design Competition

The High School Design contest is a regional competition for the annual national Rube Goldberg machine competition by Rube Goldberg Inc. High school students from all around the area have teamed up to build a Rube Goldberg machine to compete at our competition. A Rube Goldberg machine is a contraption/device made to perform a simple task in an overly complicated manner, often including chain reactions and numerous steps. Feel free to stop by to see all the different teams designs!

Electrical and Computer Engineering Building, 3002

Friday, 8.30am - 2pm

Middle School Design Competition

The Middle School Design Competition offers 6th through 8th graders an opportunity to engineer their own projects through a prepared design challenge. This year, the challenge is to build a boat out of recyclable goods. Students will compete in a contest to see how much weight their boat can hold before sinking. Contestants have to apply engineering principles combined with creativity to compete for the best design. Come and check it out!

Electrical and Computer Engineering Building, 2nd and 3rd floor

Saturday, 9am - 2pm

Discover EOH

Elementary and middle school kids, this event is just for you! Participate in Discover EOH, a scavenger hunt throughout EOH to find the best exhibits. Get stickers or signatures from the participating exhibitors, and once you have every participating exhibit signature, go to the Central Committee tent on Bardeen Quad for a prize.

Central Committee tent on Bardeen Quad

Friday and Saturday, 9am - 3pm

Illini Engineering Challenge

Here's a chance for EVERYONE to work on an engineering project! The Illini Engineering Challenge is an onsite design challenge open to the general public, so everyone who attends EOH 2018 is welcome to participate. If you are interested in solving problems, please come and check it out!

Talbot Laboratory, 103 and 104

Friday and Saturday, 9am - 3pm

EVENT HIGHLIGHTS

Engineering Majors Fair

Considering a future in engineering? Stop by the Engineering Majors Fair to learn more about different engineering programs available at the University of Illinois. Representatives from each Engineering Department, University Admissions, and University Housing have been invited to answer questions. Find out what is possible at Engineering at Illinois!

Digital Computer Laboratory Basement

Friday, 12pm-3pm

EMERGENCY INFORMATION

» **Missing Child**

Please report any case of a missing child to the EOH Central Committee tent on North of Talbot Lab. Our volunteers throughout campus will be notified to keep a lookout for the lost child, or parents of the lost child.

» **Injuries**

In any case of injury, immediately notify nearby volunteer and go to the Illini Emergency Medical Services (IEMS) at the North-West corner on Bardeen.

» **Local Hospitals**

- Carle Foundation Hospital
- Presence Covenant Medical Center

» **Lost and found**

Any missing items can be brought to/ found at the EOH Central Committee tent on Bardeen Quad between 9am and 4pm on Friday and Saturday (during EOH hours), or at the Engineering Council office (Engineering Hall 103C) at any other time.

» **Visitor's Booth**

For any general inquiries, please feel free to approach our volunteers at the visitor's booth (details on pg 6)

» **EOH Central Committee Tent**

For any other emergencies, please approach any central committee member in the Central Committee Tent on Bardeen Quad right away

Food

Hungry? Whether it is a short break or an entire meal, our food trucks are here to meet your needs!

Watch out for our students' favorite food trucks on Springfield Av. between Wright and Matthews St. (Directly north of Grainger Library)

Entertainment

Need a break from exhibits? Come watch some of our university's most talented artists perform various acts from jazz to dance to acapella.

- » Entertainment tent North of Talbot Lab
- » Friday, 12pm - 2pm
- » Saturday, 11am - 2.30pm
- » For specific schedule, please visit our web app (QR code on pg 3)

Merchandise

Commemorate your trip to EOH by finding EOH and Illini gear from the entertainment tent (North side of Talbot Lab)!

MIDWESTERN ROBOTICS DESIGN COMPETITION

Executive Board

Director	Michael Gale
Co-Director	Ted Stelling
Rules Chair	Jacob Foster
Rules Co-chair	Jessica Mo
Tech Chair	Vassily Petrov
Tech Co-chair	Timur Javid
Field Chair	Ramon Macias
Corporate Chair	Ted Stelling
Corporate Co-chair	Prerak Sanghvi

Time

9:00-4:00 Fri

9:00-3:00 Sat

Location

Kenney Gym Annex

Engineering students from universities throughout the Midwest travel to Engineering Open House to participate in the Midwestern Robotics Creative Design Competition. This student-run annual robotics competition lasts two days and features great ingenuity displayed by all participating teams. This competition started in 1987, making it one of the oldest continuing robotics competitions in America, predating both Battlebots and FIRST Robotics by several years.

The course this year involves the traversal of various obstacles and the manipulation of different mechanisms to obtain soccer and foam balls. These balls will have to be placed into a goal in order to score points. Each year there are a plethora of robot types, ranging from wheeled and manually-controlled robots, to autonomous robots and quadcopters. The arena is a 44 x 40 foot raised platform with several different tiers. Obstacles can include moats, tunnels, and massive teeter totters. At the end of a competition there is an optional demolition round, in which robots can obliterate each other in a free for all frenzy to the last robot moving.

On the first day of the competition, teams play each other in a Round-Robin format. On the second day, all teams enter into a championship bracket with seeding determined by the initial rounds. A final championship match produces a competition winner. The demolition round concludes the contest.

We welcome all feedback and suggestions! If you would like to contact the MRDC Committee, please reach out to us!

mrdc@lists.illinois.edu
<http://mrdc.ec.illinois.edu>

EOH STARTUP SHOWCASE

Location: Siebel Atrium

Startup Showcase is an exhibit at EOH that presents startup companies. These are groups that have spent countless hours developing their own ideas into a product and furthermore into a company. Come witness the innovation, inspiration and passion behind these bright ideas!

- » **Opico**
A social media app that allows users to describe the places they go with just one emoji.
- » **RingWing, LLC**
The world's first catchable glider. Assembles from flat to flying in 2 minutes or less.
- » **GrayMattera**
Developing a sensor which detects concussions for the safety and awareness of bikers.
- » **Founders**
Student entrepreneurship club that connects student startups to the resources they need.
- » **Dibbs**
A student-run team dedicated to eliminate food waste through connecting excess food from local grocery stores to food agencies.
- » **Virtision.com**
With Virtision you can tour your next apartment from home.
- » **AdSkipper**
Aims to provide online live radio streaming with options to mute or switch channels during advertisements.
- » **Red Clover Reader**
A social platform aiming to provide children with free access to a world of eBooks and safe educational entertainment.
- » **Modos Technology**
Equipping classrooms with the next generation of engaging, mobile-friendly education technology.
- » **QuillBot**
A smart thesaurus that rewords full sentences and paragraphs, making writing more creative and concise.
- » **Formplayer**
An SaaS based experience management platform that helps organizations leverage data to make smart and informed decisions.

KEYNOTE SPEAKER

Google's Engineering Director

Parisa Tabriz



Parisa Tabriz graduated from the University of Illinois with a Bachelor's of Science in Computer Science (2005) and a Master's in Computer Science (2007). Parisa is now the Director of Engineering at Google, Inc. following her tenure as the Director of Security for Google Chrome. Parisa was recognized as a member of the "30 Under 30 to Watch in the Technology Industry" recognized by Forbes Magazine in 2012. As the "Security Princess," Parisa was in charge of information security and has worked for the United States Digital Service and along members of the Defense Digital Service. Parisa is here for Engineering Open House to talk about the intersections between humanity and engineering.

Friday, 4:30pm
ECEB 1002

EXHIBIT LISTING

NORTH QUAD

Serenity In Motion

Women In Electrical and Computer Engineering (WECE)

We are designing a gesture controlled quadcopter from ground up. It runs on raspberry pi and is controlled via a gauntlet with RF tags.

ECEB, Quad

Drone Racing

Illini Drone Racing Club

Drone Racing

North Quad between MNTL and Newmark

COORDINATED SCIENCE LAB STUDIO (CSL Studio)

Robotic Surgery

Interactive demonstration of medical robotics. You will see how robots are changing the way surgery is performed, and be able to control a surgical robot and experience what a surgeon does in the operating room. See how the RoSS Virtual Reality Simulator is being used to train the next generation of medical professionals.

CSL Studio, 1205

Listen Up (Or Down): The Technology of Directional Listening

Coordinated Science Laboratory
Wouldn't it be nice to shut out all the noise and only hear the per-

son you're talking to? Directional listening technologies, from simple ear horns to cutting-edge microphone arrays, let us focus on the sounds we want to hear. Visitors will learn about hearing health and the technologies that can help people hear better.

CSL Studio, 1232

Grain Quality Monitoring and Farmer Communication System for the Reduction of Post-harvest Loss

The world's food supply needs to continue increasing to keep up with the growing population. One way is to reduce the amount of food loss during farming in developing countries. See how educating small farmers (that may not have running water or stable electricity) to use new information, communication and sensor technologies can assist them in preventing significant losses of the grain they produce.

CSL Studio, 1232

Petronics

Petronics

Petronics is a robotics company spun out of the university by ECE graduate students. They will be exhibiting their first product, Mousr, an autonomous robot for cats, as well as cutting edge research in home robotics funded by the National Science Foundation.

CSL Studio, 1232

Personal Sound Zones

SWING research group at CSL
Come experience head-phone-free personal audio with the SWING research group. We will demonstrate a novel way to privately deliver multiple audio signals to various spots inside our demo room.

CSL Studio, 1251

Mobile Robotics Arena

Coordinated Science Lab

Come witness the mapping and navigation of Linux-powered robots.

CSL Studio, 1258

MSTE Electronics Display

MSTE Office

CREDC researches the power grid, cyber security, the Internet of Things, and how smart devices interconnect.

CSL Studio, 1263, 1264

CyPhyHouse: A Distributed Robotics Framework

Sayan Mitra (PI for
CyPhyHouse project)

This team will show a small-scale car and drone autonomously driving/flying using our custom software tools. Come find out the motivation/ application of distributed robotics, the challenges in development, and the team's proposed design process that will make these robotic platforms more accessible for researchers, engineers and community members.

CSL Studio, Flight Arena

ELECTRICAL AND COMPUTER ENGINEERING (ECEB) BUILDING

Bio-inspired Swarm robots

University of Illinois at
Urbana-Champaign

Inspired by golden shiner fish, a swarm of 100 small robots use collective intelligence to identify and navigate to the target area.

ECEB, Lobby

Illinois Solar Decathlon

Illinois Solar Decathlon is giving tours of a net zero energy solar homes! Come and learn about how students created an emergency home that runs off of sustainable energy.

ECEB, Lobby

Unmanned Aerial Vehicle Navigation

Using LiDAR Grace Gao research group Come and see how UAVs perceive the environment and navigate around obstacles.

ECEB, Lobby

SWE Team Tech

This exhibit showcases a state-of-the-art application that SWE Team Tech has curated for Caterpillar technicians in order to enhance the process of machine maintenance. The application provides a responsive interface for the technicians to remotely access real-time data of individual machines and efficiently pinpoint the exact cause of a reduction in performance.

ECEB, Lobby

Phone Signal Hunter

We will demonstrate a radio that can capture radio frequency signals on a computer monitor in real-time. Visitors can participate in the demo in two ways. They can move the antenna around to see how do signals change based on the locations. They will also be able to tune the radio through a knob to see signals at different frequencies. Through this demo, visitors hopefully will aware the existence of our radio spectrum as well as how radio works.

ECEB, Lobby

LED Audio Visualizer

Sigma Phi Delta Fraternity

Visualizes the frequency content of sound and music using a colorful LED matrix and an Arduino connected to a laptop.

ECEB, Lobby

Artificial Intelligence on a Microchip

Electrical and Computer
Engineering Department

“Artificial intelligence (AI) has begun to pervade our lives with machines being able to process large volumes of data, make decisions, provide suggestions and recommendations. However, such machines consume a lot of energy in order to exhibit intelligent behavior. This is why today’s AI resides primarily in the cloud where the supply of energy is unlimited. In contrast, sensory platforms such as cell-phones, wearables, drones, lap-tops, autonomous robots, and driver-less cars all need AI to be realized on-site in order to meet real-time constraints and for privacy reasons. However, such platforms have limited energy supply, and requires realizing AI functions

on a microchip (also known as an integrated circuit (IC)) with minimum energy consumption. This exhibit will introduce the basic principles underlying AI and microchips via posters and demonstration of AI functionality via recently designed microchips in our group.”

ECEB, Lobby

Illini RoboMaster

Illini RoboMaster (iRM) is a Registered Student Organization at UIUC, consisting of a group of young engineers who believes that robotics will be the powerful way to build the future. The group aims to not only compete in the annual robotics competition hold by DJI but also to provide a place for students to discuss and learn about latest science and technology.

ECEB, Lobby

Arduino-Controlled Analog Synthesizer

The exhibit will feature a fully analog synthesizer controlled by an Arduino Mega. Visitors will learn basic concepts related to audio synthesis (such as how speakers work), circuit design, coding, signal processing, and sound design

ECEB, Lobby

Virtual Jazz Orchestra

Mark Smart

The Haken Continuum Fingerboard and custom software is used to create a realistic jazz big band like the Count Basie Orchestra.

ECEB, Lobby

ECE Student Advancement Committee EOH Exhibit

ECE Student Advancement
Committee

ECE Major exhibition through
ECE Student Advancement
Committee.

ECEB, Lobby

Candy Sorter V1.9.85

Society of Hispanic Professional
Engineers

Using an Arduino, RGB Color
Sensor, and servo motors
the robot sorts M&Ms by color.
The robot asks the user for a specific
color then dispenses such
color.

ECEB, Lobby

Web Accessibility Testing Engines

DRES (AITG)

Presenting work on modern
tools and technical specifications
for testing accessibility of
web browsers and documents.

ECEB, Lobby

Hang Printer

IEEE UIUC

A large scale 3d printer using
high tension string as a means of
motion and intended to be hanging
from a ceiling or similar surface.

ECEB, Lobby

HydroCyclones

IEEE

“The drainage of water from an
outlet is a wonderful phenomenon
to observe. Pull the plug on a tub
full of water and suddenly the water
surface comes alive.

But what if the angular velocity
of the drain could be used to
generate electricity. A turbine
attached to a generator could

be rotated to convert the kinetic
energy of the water into feasible
electrical output.

ECEB, Lobby

Electric Skateboard

IEEE

Electric Skateboard with forward
and backward capabilities, and
automatic turn and break signals
made from a fraction of the actual
cost.

ECEB, Lobby

Virtual Jazz Orchestra

Mark Smart

A virtual jazz big band a la Count
Basie is created using the Haken
Continuum Fingerboard and custom
software by Mark Smart.

ECEB, 2nd floor bridge

HKN EOH Project Showcase

HKN

HKN project showcasing the
cool applications of engineering.

ECEB, 2nd floor bridge

ECE 110/120 Honors Section

ECE 110/120 Honors

Freshmen students design personal
projects in the honors section for
ECE 110 and ECE 120.

ECEB, 2nd floor bridge

ECE Student Projects in ADSL

ADSL Student Projects

Students are working on robots,
musical instruments, audio processors,
arcade games, and more!! Talk with
students working on their dreams!
And check out past projects, like
Martin Eberhard’s “Touring Machine”
-- his first electric vehicle that he

built in ADSL, before he created
the Tesla Roadster.

ECEB, 2076

Eta Kappa Nu

Eta Kappa Nu (HKN), ECE Honor
Society. We encourage excellence
in the field of Electrical and
Computer Engineering

ECEB, 2nd floor bridge

Power and Energy Systems

IEEE PES/PELS/IAS

The Power and Energy Systems
group at the University of Illinois
proudly presents several exhibits
each year at Engineering Open
House to demonstrate the
fundamental aspects of our field.
This year we will be presenting
nine projects, four of which are
described in detail below:

ECEB, 4022, 4024, 4026

VEN TE CHOW HYDROSYSTEMS LABORATORY (HL)

Under Pressure:

Exploding Popsicle Sticks

IAHR

This exhibit is designed as an
immersive experience for EOH
attendees. Attendees will take part
in constructing a giant popsicle
stick bomb that will simulate the
power of pressure, releasing waves
of sticks and demonstrating how
one little move can cause a whole
chain reaction of events. Attendees
can build obstacles such as dams
and bridges that will react differently
and “blow up” upon the release of
tension. At the end of the day,
we will set the sticks off and
attendees can see in person or
remotely online

how their section of the bomb went off.

HL, 1518

Fluid Mechanics 101

IAHR

At Hydrosystems water is our business. Come to this exhibit to explore the fundamental properties of fluids through simple experiments.

HL, Main Laboratory

Hazards of a Modern Spillway

IAHR

Spillway dams are very common in Illinois, but very dangerous.

Do you know why?

HL, Main Laboratory

Food for Thought

IAHR

Attendees use up to date technology to learn how much water is involved in the food they eat! Hydro students work together with Education students to give attendees this interactive iPad app experience.

HL, Main Laboratory

Wave Attenuation by Vegetation

International Association for Hydro-Environment Engineering and Research (IAHR)

Come to experience how water waves and aquatic vegetation shape our beaches and lakes. The purpose of this exhibit is to teach visitors in a simple way about the complex interaction between plants and waves. Also, it shows the eco-engineering consequence of this interaction; like in sediment and pollutant transport. This exhibit presents models of aquatic ecosystems

dominated by waves: beaches, estuaries, and lakes.

HL, Main Laboratory

Wind Tunnel

IAHR

This exhibit allows you to see flow patterns around objects (sphere, cars, wings). Understanding the interactions between a solid object and its surroundings medium is critical for designing more fuel-efficient, faster, and safer vehicles whether on the air, the water, or on the road.

HL, Main Laboratory

Tunnel and Reservoir Plan Model

IAHR

As a very large and old city, Chicago still uses sewer pipes which contain both sanitary and storm-water flows; these are known as a combined sewers. Strong rainfall events may overload the urban drainage system, the rainfall excess may flood basements, streets and lower building levels. To mitigate these effects the City Of Chicago designed and built deep tunnels and gigantic reservoirs (TARP) where rainfall excess is stored. In this manner engineers can regulate the inflows of sewage to the water treatment plans during extreme rainfall events. This MegaProject has reduced dramatically the frequency and volume of untreated sewer overflows discharged to the environment (Chicago River and Lake Michigan). U of I students have built a scaled model of TARP for one of our classes. Come and see what engineers can do to alleviate urban flooding hazards!

HL, Main Laboratory

SeaPerch Underwater

Robots

IAHR

Participants will get first-hand experience with SeaPerch submarine robots and learn more about a science competition for middle and high school students.

HL, Main Laboratory

Groundwater Flow Model

IAHR

In this exhibit you can see how water flows underneath the Earth's surface. Just as water moves on the surface through rivers, lakes, and oceans, it is also constantly moving below the surface. Humans withdraw groundwater for irrigation, drinking water, and industrial applications; these withdrawals can impact groundwater essential for irrigation, human consumption, industry, and the streams.

HL, Main Laboratory

Sandbox Hydrology

IAHR

This educational sandbox + flow table model is all about hydrology. We can design a sandy landscape to increase or decrease surface runoff, ponding areas, and infiltration rates to recharge the underlying aquifers.

HL, Main Laboratory

Little Big River

IAHR

This unique meandering flume will allow you to explore the hydrodynamics of big rivers and how they affect human activities (ex. navigation, erosion/sedimentation control).

HL, Main Laboratory

NATIONAL CENTER FOR SUPERCOMPUTING APPLICATIONS

Established in 1986, the National Center for Supercomputing Applications (NCSA) is leading the way in groundbreaking research and solving some of industry's biggest challenges with one of the world's fastest supercomputers and advanced digital resources in the nation. See how NCSA can help you change the world.

Mini Cluster Display SC17 Student Cluster Competition Team

The NCSA Student Cluster Competition Team designs and builds small clusters with hardware and software vendor partners, learns designated scientific applications, and applies optimization techniques for their chosen architectures. Join us to learn more about how clusters are made!

[NCSA, Atrium](#)

Benchmarking Parallelized File Aggregation Tools for Large Scale Data Management NCSA Genomics

How much data storage does it take to house 3 Billion base pairs of human DNA? NCSA Genomics students Tiffany Li & Ryan Chui know. They worked with the Blue Waters team to create ParFu and ptgz, which helps scientists study the human genome by quickly storing and archiving millions of files.

[NCSA, Atrium](#)

University of Illinois' Autonomous Submarine Team

Fun For All Ages!

Led by NCSA researcher Vlad Kindratenko, IllinoisAUV is a student-run organization that builds competitive autonomous, underwater vehicles. These submarines must independently perform various tasks, such as object detection. Dive right in!

[NCSA, Atrium](#)

Scaling the Computation of Epistatic Interactions in GWAS Data: Computational Approaches NCSA Genomics

NCSA Genomics in collaboration with the Center for Computational Biology and Genomic Medicine (CCBGM) present a new software prototypes that will speed and scale out the analysis of gene-on-gene interactions for the entire genome.

[NCSA, Atrium](#)

NCSA SPIN - Student Pushing INnovation

Students Pushing Innovation
(SPIN) Internship Program

NCSA has a history of nurturing innovative concepts, and some of the best ideas have come from highly motivated, creative undergraduates. The SPIN (Students Pushing Innovation) internship program was launched to provide University of Illinois undergraduates with the opportunity to apply their skills to real challenges in high-performance computing, data analysis and visualization, cybersecurity, and other areas of interest to NCSA. Want to know what SPIN has

to offer? Stop by, and meet the wonderful mentors and SPIN students who make this program a success!

[NCSA, Atrium](#)

Design for America (DFA)
Dream For America at NCSA is a registered student organization, as well as a part of a national network, of passionate creators & innovators revolutionizing the way college students engage with our local communities. Our Studio fosters idea incubation, empathy in design, and motivation in approaching complicated challenges. DFA is open to ALL majors and anyone interested in design, innovation, entrepreneurship, or just making a difference!

[NCSA, Atrium](#)

Join Genomics Group for Fun and Hands on Activities!

NCSA Genomics

Fun For All Ages!

How can Scrabble help us learn how to sequence DNA? Find the correct sequence, using Scrabble letters and learn how scientists study DNA! This activity is accompanied with age-appropriate trivia about Blue Waters and the science of genomics.

[NCSA, Atrium](#)

Extreme Science and Engineering Discovery Environment (XSEDE)

The Extreme Science and Engineering Discovery Environment (XSEDE) is a virtual organization, led by NCSA, that coordinates the sharing of advanced digital services - including supercomputers and high-end visualization and data analysis

resources - with researchers nationally to support science. XSEDE also provides expertise including: Extended Collaborative Support Services (ECSS), Cyberinfrastructure Integration and university affiliated experts called Campus Champions, to help users make the most of XSEDE resources.

[NCSA, Atrium](#)

NCSA Integrated Cyberinfrastructure Division

[NCSA Integrated
Cyberinfrastructure Directorate](#)
The NCSA Integrated Cyberinfrastructure (ICI) directorate manages a modern cyberinfrastructure that supports engineering and scientific research for a variety of academic, government and industry partners. ICI provides system engineers and administrators who are knowledgeable about computer architecture, storage technology, interconnect, operating system, cluster software stack, user management, job management, resources monitoring, networking, and security, as well as best practices in the field, to help field the world class resources that NCSA and its partners utilize.

[NCSA, Atrium](#)

Dark Energy Survey (DES) / Large Synoptic Survey Telescope (LSST)

NCSA provides a data management framework for the Dark Energy Survey (DES), which is using one of the world's largest digital camera to undertake the largest galaxy survey ever attempted. This framework processes, calibrates, and archives the massive amounts of data—

quadrillions of bytes over the lifetime of the survey—that will be collected for the DES.

NCSA will process and archive data for the Large Synoptic Survey Telescope (LSST), currently under construction in Chile. LSST will use an 8.4-meter telescope and 3-gigapixel camera (the largest digital camera ever constructed) to produce a wide-field astronomical survey of the universe, collecting tens of terabytes of data every night. LSST will track changes in the Universe and explore the mysteries of dark energy and dark matter. The LSST mission will begin a ten-year survey starting in January 2022.

[NCSA, Atrium](#)

NCSA's Blue Waters Supercomputing Project

[NCSA Blue Waters](#)

With more than 30 years of leadership in high-performance computing (HPC), NCSA Industry is home to the largest industrial HPC program in the world. We have worked with many Fortune 50® companies in sectors including manufacturing, oil and gas, finance, retail/wholesale, medical, pharmaceutical, agriculture, technology, and more. Our goal is to provide superior consultation, matching corporate and government challenges and needs with HPC solutions only available through NCSA Industry.

[NCSA, Atrium](#)

Join Genomics Group for Fun and Hands on Activities!

[NCSA Genomics](#)

[Fun For All Ages!](#)

How can Scrabble help us learn how to sequence DNA? Find the correct sequence, using Scrabble letters and learn how scientists study DNA! This activity is accompanied with age-appropriate trivia about Blue Waters and the science of genomics.

[NCSA, Atrium](#)

XMAL/Interactive Multi-Media Ecologies

A series of multi-media art installations that incorporate the observer's movement into a visual and sonic atmosphere, creating a dynamic, feedback artistic ecology. By gathering and analyzing a variety of movement features, elements of the installation 'react' to the observer, relaying imagery and audio throughout the environment. As the observer moves and reacts within the space, they become integrated directly with the visual and aural elements, creating responsive feedback ecology.

[NCSA, Atrium](#)

NCSA Industry

With more than 30 years of leadership in high-performance computing (HPC), NCSA Industry is home to the largest industrial HPC program in the world. We have worked with many Fortune 50® companies in sectors including manufacturing, oil and gas, finance, retail/wholesale, medical, pharmaceutical, agriculture, technology, and more. Our goal is to provide superior consultation, matching corporate and government challenges

IT'S TIME TO CHANGE THE WORLD AGAIN

Join us at the National Center for Supercomputing Applications (NCSA) to learn how NCSA is leading the way in groundbreaking research and solving some of industry's biggest challenges with one of the world's fastest supercomputers and advanced digital resources.

NCSA Building, 1205 W. Clark St., Urbana
Friday, March 9, 9:00am – 4:00pm

How will you change the world with NCSA?
Learn more at nca.illinois.edu



VISIT NCSA'S SUPERCOMPUTERS!

Get an up-close look at NCSA's supercomputers, including Blue Waters, iForge, and the LSST system. Go behind the scenes at the National Petascale Computing Facility (NPCF) and learn about the more than 13 quadrillion calculations per second happening in one place!

National Petascale Computing Facility,
1725 S. Oak St., Champaign
(across Oak St. from parking lot E-14)
Saturday, March 10, 9:00am – 4:00pm

For more information about NPCF and NCSA's supercomputers, please visit <http://www.nca.illinois.edu/about/facilities/npcf>



and needs with HPC solutions only available through NCSA Industry.

NCSA, Atrium

NCSA 4K/3D Cinematic Scientific Visualizations

Advanced Visualization Laboratory (AVL)

Established at NCSA over 14 years ago, the Advanced Visualization Laboratory's (AVL) mission is to communicate science and inspire audiences to learn about science through the creation and integration of data visualizations into public outreach projects. Working in close collaboration with domain scientists, AVL creates high-resolu-

tion, cinematic, visualizations of scientific data. These visualizations provide insight into computational science—a key method of contemporary science. AVL shares its work with the world through shows featured in digital full-dome planetariums, IMAX theaters, and documentary television.

NCSA,1005

RIVEEL3D: Virtual Reality Archeological Tour

Advanced Visualization Laboratory

RIVEEL 3D works with NCSA's Advanced Visualization Lab to design interactive environments to catalogue, view, and analyze

archaeological data within a virtual environment, in an effort to preserve historic excavation sites for the future. RIVEEL3D is a branch of the Cyprus Institute's digital cultural heritage research initiative.

Credits: The Cyprus Institute, Science and Technology in Archaeology Research Center, Department of Antiquities, Nicosia Municipality, Colter Wehmeier, Donna J Cox, Kenton Guadron McHenry, Bob Patterson, AJ Christensen and Stuart Levy (University of Illinois, Urbana-Champaign, National Center for Supercomputing Applications, AVL)

NCSA,1005

What Have in Common Artificial Intelligence, Supercomputers and Black Holes Collisions?

Gravity Group

The NCSA Gravity Group has a broad research portfolio across multiple areas of contemporary gravitational wave astrophysics, astrodynamics and multi-messenger astrophysics. Through a variety of hands-on activities and visualizations, visitors will explore the effects of black holes on objects and light around them.

NCSA,1030

Interactive Multi-Media Ecologies

eDream

A series of multi-media art installations that incorporate the observer's movement into a visual and sonic atmosphere, creating a dynamic, feedback artistic ecology. By gathering and analyzing a variety of movement features, elements of the in-

The distance between imagination and...creation



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stallation ‘react’ to the observer, relaying imagery and audio throughout the environment. As the observer moves and reacts within the space, they become integrated directly with the visual and aural elements, creating responsive feedback ecology.

NCSA, 2103

Screening “Seeing the Beginning of Time”

Advanced Visualization Laboratory

Times: 9:30am, 11:30am, 1:30pm

Co-produced by NCSA and Thomas Lucas Productions, Seeing the Beginning of Time takes viewers on a visually-compelling journey through deep space and time. The 50-minute, 4K science documentary follows astronomers in one of the most far-reaching efforts ever undertaken to study the universe. Using giant new lenses and mirrors and marshaling vast computational power, peer into the deep recesses of time to find out how the universe set the stage for galaxies and worlds like ours in an era known as the Cosmic Dawn.

Learn more from NCSA’s Advanced Visualization Lab about how state-of-the-art technologies were created using NCSA’s Blue Waters supercomputer to create cinematic production-quality data visualizations showcasing hundreds of millions of years of galactic evolution.

NCSA Auditorium, 1122

NEWMARK BUILDING

Stoplight Reaction

Institute of Transportation Engineers

We will have a set up that will see how fast you can react to a stoplight. It will consist of a traffic light, and a volunteer will have to see how fast they can hit the brakes when the stoplight turns red.

Newmark Building, Crane Bay

Tower of Indeterminacy

American Society of Civil Engineers (ASCE)

We make a giant Jenga tower and learn about what makes block sliding easier.

Newmark Building, Crane Bay

Illinois Center for Transportation

Advancement in Pavement Technology.

Newmark Building, Crane Bay

Rail Extravaganza! - Intermodal game

AREMA Student Chapter

Learn about containers transportation while playing a competitive game! Ages 4 and over are welcome.

Newmark Building, Crane Bay

Rail Extravaganza! Locomotive Simulator

AREMA Student Chapter

Have you ever wondered what it is like to operate a train? Come and find out with our real train simulator!

Newmark Building, Crane Bay

Rail Extravaganza! Railroad Track Panel

AREMA Student Chapter

Real track components and tools are displayed and explained in detail by expert UIUC students.

Newmark Building, Crane Bay

Rail Extravaganza! Track Circuits and Signals

AREMA Student Chapter

UIUC students demonstrate how track signals and circuits work with an LED track model!

Newmark Building, Crane Bay

Rail Extravaganza! Happy Trains!

AREMA Student Chapter

A perfect stop for young kids to craft paper trains and find out what’s inside a train by playing our railroad puzzle.

Newmark Building, Crane Bay

Rail Extravaganza! Meet a Railroader: CN Railway Traffic Control

AREMA Student Chapter

Experienced railroaders from Canadian National share their stories and display a live look at their amazing train dispatching and track signaling system.

Newmark Building, Crane Bay

Water Table Depletion

Water Environment Federation

The demonstration contains a model of a water table which we will create using a tank filled with sand and water. We will add a food coloring so the water is visible. We will use pipettes or tubing as ‘wells’ to demonstrate how extraction of water leads to the depletion of the water table, and that future wells and pumps need to be deeper to access the water.

Newmark Building, Crane Bay

High Strength Concrete Testing

ACI

Trained ACI members break high-strength concrete cylinders in Crane Bay every 15 to 20 min.

Newmark Building, Crane Bay

Permeable Concrete

ACI

Does water go through concrete? Pour it yourself and find out!

Newmark Building, Crane Bay

Liquefaction/Quicksand Tank

Geo-technical Engineering Student Organization

A quicksand tank that sends objects spiraling towards their doom

Newmark Building, Crane Bay

Shake-n-Quake

Simulations Earthquake

Engineering Research Institute

The exhibit will be an interactive earthquake simulation. Visitors will have the opportunity to construct a structure, e.g. a simple building/bridge model, with basic materials like tinker toys and then place them on a shake table used for earthquake wave simulations. From the exhibit, visitors can learn about the impact of an earthquake on common structures, and how to build a strong structure against earthquake damage.

Newmark Building, Crane Bay

Perception Reaction

Institute of Transportation Engineers

This exhibit will feature a perception reaction device, allowing participants to test how fast they

can step on the brakes of their vehicle if presented with an obstacle they need to stop for in the road.

Newmark Building, Crane Bay

Structural Engineers

Association

We will present how to build Lego buildings to the children. We will then test them on a small shake table.

Newmark Building, Crane Bay

Rail Extravaganza!

JR Central High-Speed Maglev Trains

AREMA Student Chapter

Come learn about flying trains! Central Japan Railway Company shows their maglev model and teaches about magnetic levitation.

Newmark Building, 1233

SIEBEL CENTER FOR COMPUTER SCIENCE

GameBuilders' Games!

ACM GameBuilders

A selection of video games created by undergraduates in the GameBuilders organization here on campus! Stop by to try them out or have a chat about anything game-related. Interested in working in the game development industry? Want to get feedback on your awesome game idea? Everyone and everything

Siebel Center, Atrium

Cream on Chrome

ACM

Light show inspired by the video "Cream on Chrome" by Rataat.

Siebel Center, Atrium

Data Science for Everyone

Association of Data Science and Analytics

We explore multiple applications of data science that impact our day to day life, and attempt to recreate them

Siebel Center, Atrium

Video As a Sensor

IGL(Illinois Geometry Lab)

Utilizing a Convolutional Neural Network for real time object detection

Siebel Center, Atrium

Night Sky App

Women in Computer Science

An Alexa/web app to give info about the current night sky based on user location.

Siebel Center, Atrium

Mechmania 2017

ACM

The game and back-end systems used in last year's Mechmania competition.

Siebel Center, Atrium

Opico

Opico is a mobile app that lets you give opinions about all the places you eat and visit with a twist: you can only use emojis. With over 500 users and over 1500 opinions posted on the app, the app contains information about places all over the world. Our exhibit will showcase an interactive map with real-time data about opinions being posted all around the Champaign Urbana that can be curated to show visitors specific information such as all the coffee shops in CU or any other interesting data visualizations.

Siebel Center, Atrium

Web Data View

Individual

Human-in-the-loop universal web data extraction platform.

Siebel Center, Atrium

Lock Picking with the Illinois Cyber Security Scholars Program (ICSSP)

Illinois Cyber Security Scholars Program

Increasing cyber security awareness through physical security (Lock Picking).

Siebel Center, Atrium

Sunny SIGGRAPH

A short animated film about Sunny the alarm clock owned by a college student.

Siebel Center, 1214

Computer Science Academic Planner

Women in Computer Science

A four year academic planner: Students can plan all their remaining semesters on campus in one go. The planner will tell students whether they are on track to graduate given their major, specialization track, and preferences in instructors.

Siebel Center, 1214

Data Canvas

Women in Computer Science

Visualize abstract data-structures through interactive web application to engage more people in learning programming.

Siebel Center, 1214

Runner App

Women in Computer Science

A runner app that traces and displays your running route based on GPS locations.

Siebel Center, 1214

H2O Go

Women in Computer Science

An interactive computer game which audience members can play in order to learn about sources of clean water, how water is used, and how water pollution affects the world.

Siebel Center, 1214

DIGITAL COMPUTER LABORATORY (DCL)

Re-engineering Education: 3D-printed Anatomy and Physiology Models

LeRoy Anatomy and Phys Outreach

With prices in the range of hundreds of dollars, anatomical models are an expensive educational investment -- we hope to remedy this issue. Using MRI scans and modeling software, we have created a variety of 3D printed models that have been used by local high school students to improve their anatomy and physiology education. These printed models are significantly more affordable than existing commercial models, yet still maintain anatomical accuracies. For EOH, we seek to display the full range of models we have created for this outreach project. Supplementary information shall be provided that details the creation of STL files from patient-derived MRI data and optimization of printing.

DCL, Atrium

Lego Limbs: Prosthetics Built from Legos

Biomedical Engineering Society(BMES)

We make the concepts of prosthetic limbs more accessible to younger audiences through an interactive presentation on basic biomechanical properties and their associations with prosthetic limbs. In this exhibit children will be allowed to, with some guidance, build their own prosthetic models out of Lego toys. This will allow for a hands on experience with the properties which allow prosthetic limbs to work while also providing a fun activity which stimulates creative thinking and problem solving.

DCL, Atrium

Growing Prosthetic Biomedical Engineering Society BMES

Young prosthetic users continuously need to buy new prosthetics to accommodate changes in the residual limb due to growth. Sometimes, this is not financially viable for some families because prosthetic components are very expensive. This project aims to design a cheaper prosthetic arm that fits the child as he or she grows while maintaining gripping functionality. Elements of the design will be 3D printed.

DCL, Atrium

Drug Measurement BMES

A device/method to compute the exact amount of drug for a patient after diagnostic based on various parameters.

DCL, Atrium

3D Printed Knee Model **Biomedical Engineering** **Society** BMES

Anatomical models of the human body have proved to be an important aspect in education, because children can visualize and interact with the model. We are creating an anatomical model of the knee, which allows children to understand diseases that affect the knee. Come visit our booth to learn about the knee and issues affecting the knee such as ACL tears and cartilage degeneration.

DCL, Atrium

Not Your Basic **Wheelchair** BMES

UIC's Specialized Care for Children Program is a statewide program that serves children and youth with special health-care needs and their families. In this project, we worked with a 11 year old boy with cerebral palsy to design and integrate a system into his existing wheelchair. This sensor system will detect proper positioning of the patient as well as low tire pressure to prevent pressure sores, promote good posture, and prevent wheelchair mobility issues. Check out our exhibit to learn more!

DCL, Atrium

An Inkceptional **Exploration of Tattoo** **Innovation** BMES

Exploring different approaches, removal, and uses of tattoos. See how tattoos interact with the body!

DCL, Atrium

Disease Algorithm App **Biomedical Engineering** **Society** BMES

Everyone dreads the flu season: that time of year around fall and winter when the flu starts to spread. For each region in the country it varies when the flu virus makes its appearance. Our project is a mobile application that models previous disease outbreaks in a local area. An algorithm will then predict when the next wave of that certain disease will strike that area and push out notifications to the user.

DCL, Atrium

Fluorescence **Biomedical Engineering** **Society** BMES

Current research in the fluorescence, their techniques and limitations, and its application to cancer detection.

DCL, Atrium

DNA Origami BMES

Come explore how the shape of DNA is changing our world today! By taking advantage of base pairing, DNA can now be self-assembled into controlled 2D and 3D structures, such as smiley faces and rabbits. These DNA structures can be used as drug delivery vehicles that are pushing the boundaries of bioengineering and medicine. Stop by to see DNA Origami for yourself and try our base pairing puzzles!

DCL, Atrium

Becoming a Superhero BMES

Have you ever wondered what it would take to become a superhero in real life? Stop by to learn about the engineering behind popular superheroes, learn how the technology can be applied in the real world, and play fun games with super powers of your own!

DCL, Atrium

Music to my Brain BMES

Like Music? Like Medicine? We're using electroencephalograms (EEG's) to check brain activity in response to music. Come out and see how your brain dances to your favorite song! Join us in this unique adventure as we look into music's potential application in the medical field!

DCL, Atrium

Control the World with **Your Mind (EEG)** BMES

Imagine driving a car, controlling home appliances, and playing songs on your phone based on your focus or mood--all with just your brain. With an EEG headset, your brain waves can trigger a variety of actions that make execution of tasks easier and more efficient. Enabling one of the most advanced levels of human-control, EEG wearables can give us new ways to interact with the world around us. Stop by our booth to try one out and experience just how much potential your brain has!

DCL, Atrium

HeatSense Glove

BMES

Arduino powered firefighter's glove used to check the temperature of objects and obstacles at a distance. It will provide relevant biometric and temperature information displayed real-time to the firefighter on a screen at the back of the hand.

DCL, Atrium

Bubble Buddies

BMES

Discover the world of nanobubbles, tiny lipid bubbles that are used by engineers to accomplish all sorts of tasks. Learn how nanobubbles are made, and find out how they are being used by researchers to treat things like cancer and glaucoma. Then, learn what it's like to hold a nanobubble with our dry ice simulation!

DCL, Atrium

StabiliTeeth

BMES

People suffering from Parkinson's disease, amyotrophic lateral sclerosis (ALS), post traumatic stress disorder (PTSD), and stroke often experience tremors. Consequently, daily tasks such as brushing teeth are often very difficult due to the lack of control and stability in these patient's hands. Currently, there are a few solutions that make these tasks easier, but they are expensive and can be more effective. Furthermore, there is no device on the market that makes brushing teeth easier... until now!

DCL, Atrium

Drug Delivery Systems

BMES

Hydrogel, microbubble, and nanoparticle drug delivery devices lie at the cutting edge of smart drug delivery. By extending drug lifespans within the body, localizing drugs to where they need to be, and/or responding to stimuli within the body, these drug delivery modalities have great potential to change the norms of drug delivery at the market level. In our investigation of these drug delivery devices, we seek to understand how they are developed and implemented. Although simple in design, these modalities show great promise in the future of drug delivery due to their myriad of applications.

DCL, Atrium

DNA Extraction

BMES

A fun, easy lab that provides people with a hands on demonstration on how to isolate the otherwise invisible DNA.

DCL, Atrium

Engineering Your Mind

BMES

Neural engineering, or neuroengineering, harnesses cutting-edge bioengineering to bring our brains and technology together. From neural therapies to neuroregeneration, neuroprosthetics, brain-computer interfaces and more, neural engineering allows us to tap into the power of our minds. Thus, by turning our brain into a tool that can be modified to improve our health and wellbeing, neural engineering heralds a significant advance in modern medicine. Come by our booth to check

out how neural engineering is changing the world - one brain at a time!

DCL, Atrium

Immunoengineering: Using the Body to Fight Disease

The body is an extraordinary thing; a machine with the ability to move, think, and protect itself from outside invaders. One of the ways the body protects itself from pathogens is through the immune system. With new scientific advancements and a better understanding of how these things work, scientists have developed ways to use the body's immune system to fight diseases and ailments like cancer and infectious diseases. Our project aims to show you how these treatments work through 3D models of different immune therapies to help visualize how these treatments work.

DCL, Atrium

Stitch-o-matic: The Future of Surgical Care

BMES

Suturing is a time-intensive, skill-dependent task necessary in surgeries. Our project aims to create an automated suturing device, practical for stitching continuously and easily convertible for different tissue types. Additionally, we aim to educate visitors on existing efforts in automated suturing. Come to our booth to see the device at work, learn about existing efforts in automated suturing, and test your surgical skills against our machine!

DCL, Atrium

Bacteria Blasters

BMES

Blast your way through infection in the new iOS game, Bacteria Blasters! Play as an microscopic antibiotic fighting off waves of increasingly resistant bacteria in this retro-style adventure.

DCL, Atrium

BMES Canine EMS

Design Team

BMES

We're designing a mobile application to help EMS personnel treat police K9s injured in the line of duty.

DCL, Atrium

Med-VR

BMES

Virtual Reality (VR) is a 3D computer generated environment that can be interacted and explored by users. Stop by to experience and play with this new technology and see how it transforms the medical field and future education through visual learning with gaming applications!

DCL, 1265

Quest Through The Cell Biomedical Engineering

Society

BMES

Ever wonder what it's like on the inside of a cell? The organism that makes up your very own body and everything around you? Because now you can find out! Our demonstration focuses on showing what the functions and internal environment of a cell are like. The goal is to teach people about the different parts of the cell through an interactive demonstration and show them visually how differ-

ent components work with each other through a life size view of the inside of a cell.

DCL, 1265

HIV and DNA

oSTEM@Illinois

HIV is the virus that leads to AIDS, and it works by changing human DNA. Come to learn about how HIV and DNA work, HIV's impact on the LGBT+ community, and a gay professor working to improve HIV/AIDS therapy. Visitors can also participate in a fun, interactive experiment to extract DNA from strawberries!

DCL, 1310

How Does Algae Change Our Life?

Illini Algae

Illini Algae club will present what is algae, how we grow algae in our labs and what are various uses of algae.

DCL, 1310

Gait Analyzer

BMES

A person's gait is the specific way in which a person walks. Gait analysis machines are used to measure stride length and other gait-related variables, often to diagnose abnormalities. Although gait analyzing techniques exist, they are often involve expensive machinery and are confined to hospitals. This project aims to create a gait analyzing system that can be portable, inexpensive, and accurate when measuring various parameters. Stop by to understand one of the most important activities of your everyday life!

DCL, 1310

BARDEEN QUAD

Design Build Fly

Design Build Fly is an engineering RSO that designs, builds, and tests remote controlled aircraft with the goal of winning the Raytheon and Cessna Sponsored DBF competition.

Bardeen Quad

ROBO-I-STAR

iRobotics

A tour guide robot that can introduce different places on campus to the visitors.

Bardeen Quad

JetCat Engine

American Institute of

Aeronautics and Astronautics

The JetCat is a RC jet engine that is operated and studied for research and science. The Jet-Cat has a maximum thrust of 30 lbs. We are an aerospace student tech group that will be running the mini jet engine at full velocity every hour and will be presenting our projects that we have been working on over the last year.

Bardeen Quad

InSPIRE Solar Charging Station

InSPIRE

Come learn about an easy to make Off-grid solar panel system and charge your phone and check out our small scale prototype of our solar charging station.

Bardeen Quad

Rocket Race

AIAA

Cable-guided small sport rockets race along Boneyard Creek.

Bardeen Quad

Nanogrid

Triangle Fraternity

Solar and wind powered electrical grid.

Bardeen Quad

College Caffeination

Caffeine will be extracted from various sources. This product will then be tested with different acids to simulate what happens in the stomach when someone ingests caffeine. The end product will consist of a model of a human stomach that will be used to test samples of caffeine.

Bardeen Quad

Pix - a CNC Artbot

iRobotics

The "Intelligent" Robot designed to draw your favorite image onto a sheet of paper!

Bardeen Quad

TRASHCANO

Volcano Geophysics and Geodynamics Lab

Join the UIUC Volcano Lab as they simulate an explosive eruption using a trash can, water, and liquid nitrogen! We'll be running demonstrations throughout the day, at specific times (12p, 1:30p, 3p).

Bardeen Quad

Siege Weapons

Pi Tau Sigma

A large scale projectile launcher! This mechanical device will showcase the principles of how a siege weapon from the middle-ages works.

Bardeen Quad

V-Cop

National Society of Black Engineers (NSBE)

This exhibition is a home-built quad-copter which is able to propel and fly to its desired destination. The quad-copter has also been built with additional functionalities to increase its versatility. This is a representation of the members of NSBE who are able to improve upon whatever is given to them. Enjoy!

Bardeen Quad

Candy Vac!

Pi Tau Sigma

The PTS Projects Team is building a vacuum powered candy dispenser, which shoots candy several feet up and down to the user's hand. The project will showcase many mechanisms and highlight the applications of vacuum power.

Bardeen Quad

Hybrid Rocket Demonstration

Illinois Space Society

This exhibit demonstrates the fundamentals of a hybrid rocket, via a small combustion chamber and nozzle mounted on an outdoor test stand. Powered by an acrylic plastic fuel grain and oxygen gas, the demonstration engine produces a bright flame and small amount of thrust. Students can learn about Newton's basic laws of motion along with the basic chemistry behind larger propulsion units used in space exploration.

Bardeen Quad

Robobrawl

iRobotics

Robobrawl is a robotic combat tournament spanning the

two days of EOH. Two competitors face off in an arena for 3 minutes or until one stops moving. Robobrawl attracts competitors from universities across the midwest.

Bardeen Quad

Illini Formula Electric 2017-2018 Vehicle

Illini Formula Electric

The vehicle Illini Formula Electric (IFE) plan to compete with for the 2018 SAE Formula Electric competition. It is an electric race car that we design and manufacture.

Bardeen Quad

Dorm Room Fire Demonstration

Society of Fire Protection Engineers

Two model dorm rooms are lit on fire, one with a sprinkler system and one without. Audience will be able to see the stages a structure fire moves through as well as the importance of sprinklers.

Bardeen Quad

3D Printable RC Airplane

AIAA

An RC airplane that was designed by UIUC students, 3D printed by parts, and assembled.

Bardeen Quad, East of Talbot Lab

GRAINGER LOADING DOCK

ESPL Demonstration Track

Engineering Student Projects Lab
A showcase for vehicles built and designed by engineering student teams for international competi-

tions. Laps driven by an electric and gas race car, a Baja off-road vehicle, a super-mileage vehicle, an electric concept car, a tractor pull, and a solar powered vehicle. After laps, time for pictures and team members can answer questions.

[Grainger Loading Dock](#)

Illini Pullers

Quarter Scale Tractor Pulling Club.

[Grainger Loading Dock](#)

Illini Solar Car

Come see Argo - a road-legal solar-electric vehicle and Illini Solar Car's first car! Last October Argo crossed the Australian Outback at the Bridgestone World Solar Challenge against top teams from around the world. This July Argo will follow the Oregon Trail for 1800 miles at the American Solar Challenge!

[Grainger Loading Dock](#)

Illini Formula Electric

Illini Formula Electric (IFE) is an engineering RSO that designs and builds a fully-electric formula-style race car each year to compete in an international collegiate competition in Lincoln, NE hosted by the Society of Automotive Engineers. After placing 4th in endurance and 7th in autocross in 2017, we are aiming to be a top 5 finisher out of the 30 electric teams at the competition this year.

[Grainger Loading Dock](#)

Off-Road Illini BAJA SAE

We would like to show off our 2017 - 2018 BAJA SAE vehicle at EOH. This is a spectacular way for us to show off our RSO and the type of vehicles we design, build, and race.

[Grainger Loading Dock](#)

Eco Illini Supermileage

Display of Supermileage vehicle that achieved 1000 mpg.

[Grainger Loading Dock](#)

Illini Ecoconcept

We constructed a battery powered car to compete in the Shell Ecomarathon's fuel efficiency competition.

[Grainger Loading Dock](#)

TALBOT LABORATORY

Riveting

Student Aircraft Builders

People will have the opportunity to rivet pre-cut sheet metal with either a hand tool or compressed air. Both methods are very safe, and we have done this exhibit for 2 years with no incidents. We will have experienced builders there to supervise.

[Talbot Lab, Basement](#)

Candy Airplane Demo

Student Aircraft Builders

The exhibitors will show children how to construct and candy airplane with smarties, laffy taffy, mints, gum, and a rubber band.

[Talbot Lab, 103](#)

Student Space Systems

A group of students building high power rockets with the goal of getting to space.

[Talbot Lab, 104](#)

Illini Aerospace Outreach

Learn about aerospace engineering through demonstrations using Wind Tunnels, fancopters and other small activities. Check out our three engines donated by Rolls-Royce and learn more

about how they work.

[Talbot Lab, Basement](#)

Zenith Display

Student Aircraft Builders

We would like to bring the fuselage of the Zenith plane we are building to display in Talbot.

[Talbot Lab, 18A](#)

Illinois Robotics in Space

An exhibition of the current robot designed by Illinois Robotics in Space for this year's robotic mining competition.

[Talbot Lab, 103](#)

Balloon Rocket Races

WIA

Come learn about rocket propulsion with Women in Aerospace by challenging your friends to a balloon rocket race.

[Talbot Lab, 105](#)

Orbital Simulation and Tech Exhibit

The Illinois Space Society

Using marbles and a large black sheet stretched taut over a large circular area kids are allowed to learn about how orbits work and the effects of gravity on planets and other space junk. Also set up in the room will be posters explaining the Illinois Space Society's technical projects and other society goals. Previous projects will be brought in for viewing including mining tools, high powered rockets, and videos of CAD design work.

[Talbot Lab, 105](#)

Illinois Robotics in Space (IRIS)

IRIS will be demonstrating the dissection of our autonomy and path planning algorithms by displaying what our robot actually

sees. From there, we will display our robot with limited mobility (I.e.: no driving, but several moving parts).

Talbot Lab, 105

Virtual Education Research Laboratory (VERL)

See how VR and 3D modeling can be used in education and training by playing virtual reality games and learning about radioactivity.

Talbot Lab, 135

SatDev's World of Whimsy

Satellite Development
Organization (SatDev)

Lab tour of satellite development area and liquid nitrogen yogurt pops!

Talbot Lab, 206

American Nuclear Society

A presentation of projects and demonstrations representing the different facets and interests of students involved in the American Nuclear Society. Projects demonstrate different exciting aspects of nuclear science and engineering!

Talbot Lab, 220A

Women in Nuclear (WIN)

WIN members give a presentation dispelling some common misconceptions about nuclear energy and show its importance in our daily lives!

Talbot Lab, 225A

MECHANICAL ENGINEERING LABORATORY (MEL)

No Newtonian Fluids Here

Pi Tau Sigma

Non Newtonian Fluid Behavior to sound signals. We encourage the audience to visual their voices in terms of non Newtonian fluids. Apparatus will include multiple speakers (4), a function generator connected to one speaker to simulate a base signal and demonstrate the behavior

of non-Newtonian fluids as a sample case. The other speakers will be used to visualize the person's voice split in treble, middle and base frequency ranges. The design will be water proof and transparent.

MEL, 1st floor hallway

Tam Toys

Society for Engineering
Mechanics

Toys that inspire an interest in engineering and STEM.

MEL, 1st floor hallway



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Spirograph

ASME

Lever arms connected to rotating gears change speeds depending on where it is connected to the gear. Connect two lever arms together, add a marker, and we are able to draw complex mathematical drawings to pass out to visitors.

MEL, 1st floor hallway

Ferrofluids

ASME

Ferrofluids are liquids that react to magnetic fields. The goal is to create an informative audiovisual experience for viewers to see otherwise invisible electromagnetic fields.

MEL, 1st floor hallway

Advanced Technologies

Used on Energy

Conversion Systems

ASHRAE University of Illinois
Student Branch

Our exhibit would include a running prototype of energy conversion system, superhydrophobic heat exchanger surface samples, ejector and vortex tube for refrigeration and air conditioning, scroll and swash plate compressors.

MEL, 1st floor hallway

Chocolate 3D Printer

Society for Engineering
Mechanics

A 3d printer that prints out chocolate.

MEL, Innovation Studio

S'more Machine

Society for Engineering
Mechanics

An automatic S'more
Machine.

MEL, Innovation Studio

Automaton toy

ME370: Mechanical Design

Course

The MechSE department's ME370-Mechanical Design students will present their hand-powered automaton mechanical toys which feature mechanisms that imitate the movement of living creatures. These mechanical toys are engineered with educational, fun, artistic, social, thought-provoking and/or functional purposes (for people of all ages).

MEL, Innovation Studio

The SWEscape Room

The Society of Women
Engineers

Use your knowledge of STEM to escape from the Mad Engineer's lab. Challenge yourself with our 30 minute escape room experience!

MEL, 2001

Girl's Club

The Society of Women
Engineers

The Society of Women Engineers invites you to come explore the world of STEM through interactive activities like building your own lava lamps and making your own personal mirrors.

MEL, 2001

The Mighty Cheese

ASME

The Mighty Cheese features a "cheese" wheel that does not want to fall down. Visitors get the chance to push over a case housing a heavy flywheel spinning rapidly. Due to conservation of angular momentum, it will be very difficult.

MEL, 2005

Massillator

ASME

Astronauts use springs to measure their weight in space using dampening equations. Exhibitors can sit on an oscillating chair and be told their weight after a few seconds.

MEL, 2005

Pulleys

ASME

Pulley advantage allows engineers to lift very heavy objects with very little effort. This exhibit allows visitors to sit on a seat and pull themselves up with different pulley advantages and experience first hand how helpful it is.

MEL, 2005

Rheology Zoo: Fluids, Solids and Things-in-between

Ewoldt Research Group

Defying the classical definitions of fluids and solids are rheologically complex materials, also known as non-Newtonian fluids. Visitors will experience how the phenomena of rheology are present in everyday materials such as slime, silly putty, and chewing gum through hands-on demonstrations of current rheological research. You will learn how researchers at Illinois are helping to DRAFT THE FUTURE by advancing the science of design and engineering with soft materials through projects in bio-inspired engineering, modern cuisine, fire suppression, and soft robotics.

MEL, 2005

The Equinox ASME

Gears are crucial tools that mechanical engineers utilize daily. This exhibit gives visitors first hand experience with gear ratios in an enlightening solar system extravaganza. The goal is to use gears to guide a laser through a planetary system to blow up the sun!

MEL, 2005

Water Ring Toss ASME

A giant variation of the hand-held toy. How many rings can you hook?

MEL, 2005

MNMS Cleanroom

In the Micro Nano Mechanical Systems (MNMS) cleanroom exhibit, we share the wonders of the micro- and nanoscale by showcasing the cleanroom capabilities in the Department of Mechanical Science and Engineering. We will have video footage showing students from the ME487 MEMS NEMS Theory and Fabrication class doing micro fabrication experiments in the cleanroom, pressure sensors and microfluidic mixers that were fabricated during the class, every day items made with MEMS based devices, and cleanroom suits that are useful in containing particles while working at the microscale. We hope to give you a peek into the world of micro- and nanotechnology research. Please come visit us on Friday as we will not be available on Saturday.

MEL

Atoms in Motion: A Virtual Reality Experience

Step into the world of atoms through an interactive virtual reality experience! Learn about phase change, atomic motion, and atomic bonds by shrinking down to the nanoscale and interacting with the atoms yourself.

MEL

ENGINEERING HALL (EH)

Theta Claw

Theta Tau

Arcade style, Arduino controlled robot arm. Participants attempt to pick and place as many items into a 'goal' zone as they can in the allotted time. Active leader board for the high score and a grand prize at the end of the day.

EH, 1st floor hallway

Virtision.com

Data Driven Design

Set up VR tour of your property in 5 minutes. Let people decorate, and share it in 5 minutes.

EH, 1st floor hallway

Liquid Nitrogen and Space Shuttle Tile Demo

The Illinois Space Society

The goal of this demo is to provide students with overarching explanation of the different temperatures encountered in space travel. Liquid nitrogen is used to show what happens in extremely cold temperatures, and a real space shuttle tile is heated to show the thermal insulating capabilities of certain materials and protective gear used for astronauts.

EH, 106B1

Rube Goldberg Machine Rube Goldberg Society

This year's Rube Goldberg machine is Pirate themed. Come see our 9'x6'x6' machine pour a bowl of cereal in the most inefficient way imaginable!

EH, 106B3

Smart Prosthetic Arm

Korean Engineering and Science Society (KESS)

Smart Prosthetic Arm is to be used by those who are incapable of physically moving their arms. We thought that an EEG controlled device would be most adequate to allow remote control of the hand.

EH, 106B3

Potential Official App for Engineering Students in UIUC

Chinese Engineering Student Association

We've created an app which has a lot of features that can help students especially Chinese students gain information about life in school more conveniently. This features includes Restaurant Recommendation, Bus Schedule, Job Info, EWS Status. The app is called Unicorn and its available on both iOS and Android.

EH, 106B3

Hot and Cold Chemistry! REACT

Why do some chemical reactions feel hot while others feel cold? How do hot packs and cold packs actually work? Come explore these questions and many more with the REACT program as we dive into hot and cold chemistry! Stop by for lots of hands-on experiments as well as a few

demonstrations that might make a flashy appearance!

EH, 106B6

Optimal IoT Control in the Smart Home

ISE Department

Internet of Things automation and optimization using Amazon Alexa to turn on home appliances, such as a dishwasher, at the most cost efficient hour for power consumption.

EH, 106B6

Engineers Without Borders

The Engineers Without Borders Exhibit will focus on the concept of using engineering to help international communities in need. Similar to last years exhibit, we will have posters displaying information on the need for clean water and other resources across the world. We will have small activities for people to participate in, such as guessing what water is actually drinkable, and constructing a small bridge, made out of paper, that holds pennies. These activities will reflect on the real life work that Engineers Without Borders does to help people- such as building bridges in Malawi or helping people in Guatemala get clean water.

EH, 106B6

Boat Engineering

National Organization for Business and Engineering

Our team will inform the audience of boat engineering. It will go in depth into the values of different boat prices the pros and cons to each one. Then to incorporate the business aspect we will be talking about trying

to stay in budget. To teach that engineers and businessmen/women have to work together to create a project.

EH, 106B8

Weather Wonders Exhibit

Student Chapter of the American Meteorological Society

We are a weather club and will conduct demonstrations that show various weather phenomena/concepts at work.

EH, 106B8

MATERIAL SCIENCE AND ENGINEERING BUILDING (MSEB)

Hot Chocolate

Material Advantage

Ever wonder why metals feel cold? Or why you can still hold a ceramic mug with hot coffee? Come learn about the differences in thermal properties between metals and ceramics! We'll be melting chocolate on different surfaces to see what shields heat better. You can help us time our experiments and watch how science works in real time! And who knows, you may just get some chocolate.

MSEB, 1st floor hallway

Hydrophobic Materials: Water You Afraid Of?

MSE 183

What if you could make a substance that never gets wet? Come learn about hydrophobic and hydrophilic materials and see them in action in our interactive demos!

MSEB, 1st floor hallway

Playing with Polymers

MSE 182

Shows the change in a polymer's properties when temperature is changed.

MSEB, 1st floor hallway

Melting Metals

Material Science and Engineering Department

Watch metals melt before your very eyes in this mind-mending presentation on phase changes.

MSEB, 1st floor hallway

Sounds of Science

MatSE Department

Why do you hear an echo in an empty room? Why does an auditorium not echo like a normal room? It all has to do with sound energy absorption! Come to our exhibit to explore acoustic properties of materials of different chemical compositions, structure, and shape.

MSEB, 1st floor hallway

A Wet 'N Wild With Sodium Polyacrylate

Material Advantage

Three cool and unique applications of super absorbent polymers (water beads, fake snow, and self healing bags)!

MSEB, 1st floor hallway

Arming Yourself with Electromyography

Material Advantage

Come learn about how muscles can control prosthetics!

MSEB, 1st floor hallway

Oobleck

Keramos

Play with oobleck and see how oobleck plays on a speaker.

MSEB, 1st floor hallway

Science From the 70s: Homemade Lava Lamp

Alpha Omega Epsilon
Engineering Sorority

Construct a lava lamp for visitors and some will take one home (decided through raffle); demonstrate hydrophobic and hydrophilic properties and a chemical reaction between acid and basis.

MSEB, 1st floor hallway

Peeps in Space

American Vacuum Society
UIUC Chapter

A bell jar apparatus will be used to emulate what happens to items we used daily like peeps, shaving cream, and water in space.

MSEB, 1st floor hallway

Evolution of Perovskite Solar Cells

Material Advantage

Come explore the evolution of perovskite solar cells! Perovskite defines a unique crystal structure which has potential for photovoltaic cells due to equal charge carrier mobilities. These types of cells started as a derivative of dye sensitized solar cells and have progressed very quickly through nano-structured and now thin film architectures. Come learn the physics behind energy harvesting, crush berries, and see some dye sensitized cells in action!

MSEB, 1st floor hallway

Silver Paintbrush

MSE183

One of the earliest recorded manipulations in history of nanoparticles is that of their use in staining glass. Our exhibit aims to display and explain how plasmonic

nanoparticles act as quantum dots and reflect color. Stop by to watch us 'stain' glass with nanoparticles and learn about how nanoparticles behave optically to achieve a certain color.

MSEB, 1st floor hallway

Electronic Skin: Tattoos of the Future

MSE 183

Come explore the endless possibilities of electronic skin! Apply temporary tattoos and play with stretchy polymer samples to understand important properties of electronic skin.

MSEB, 100

Craning it to the Next Level!

Engineering Outreach Society

Children grades 2-5 will be working on a 6 week project to build the strongest cranes, competing against each other to lift the most weight, use the most creative materials and build tallest crane.

MSEB 100

DIY Raspberry Pi Supercomputer

Society of Asian Scientists and
Engineers

High Performance Computing (HPC) is becoming a widespread computational tool in scientific research, but not all supercomputers need to be huge boxes containing computer hardware. In our exhibit, we demonstrate the ease of creating a cheap supercomputer out of Raspberry Pi modules. We demonstrate its application towards scientific computations, as well as equip the audience with the basic knowledge of supercomputing technologies.

MSEB, 119

The Mechanics of Cold Working

Show how cold working different metals affects their strength, and why that is.

MSEB, 119

Mini Arc Furnace Materials Advantage

Arc furnaces are used in metal production. This is a mini arc furnace to melt and cast steel.

Bardeen Quad, Parking lot
north of MSEB

TRANSPORTATION BUILDING

Illini Hyperloop

Illini Hyperloop's design for future SpaceX Hyperloop Pod competitions.

Lawn between Transportation
Building and MEB

Egg Drop Competition Institute of Industrial and Systems Engineers (IISE)

The egg drop competition has normally been run by a group named INFORMS, but now it will be run by IISE as INFORMS hasn't been active lately. The competition mostly applies to elementary and middle school kids, but honestly anyone can participate. We provide nearly all the supplies you could think of to try to protect your egg as you will drop it from the third floor of the transportation building to the ground. Each item that you protect your egg with costs a certain amount of money, and the game is to protect the egg while spending as little as possible. If you successfully dropped your egg to the ground (undamaged), you receive prizes.

Transportation Building, 202, 203

Supply Chain Maze Institute of Industrial and Systems Engineers (IISE)

Supply chain maze is an exhibit predominantly for elementary and middle school kids, but it also can apply to an older audience too. The maze has been a tradition of IISE for the past several years and has always been a success. First, we construct a maze within a classroom in the Transportation Building with cardboard and other items that kids can run through from start to finish. However, there are many different ways you can get to the finish line, and some are better (and more efficient) than others. Different paths are

labeled with different prices to cross, and it is the kids' job to get to the finish line spending as little money as possible. The more you save, the more candy you are rewarded at the finish line.

Transportation Building,
204

A pipe crawling robot Monolithic systems lab

A soft pneumatic robot that crawls up a pipe.

Transportation Building, 206

MECHANICAL ENGINEERING BUILDING (MEB)

Illini Motorsports

Illini Motorsports is a Formula SAE team that designs and builds an open wheel formula style race car powered by an internal combustion engine and competes in international competitions every year.

MEB, East Lawn

LOOMIS LABORATORY

Hydrophobic Materials and Applications AIChE

"In our project we will be demonstrating the uses and applications of hydrophobic materials. We will be showing how surfaces are able to shield themselves from water when coated with this substance. Engineered through one of nature's most fascinating wonders, the lotus leaf is coated with hydrophobic wax crystals which repels all water molecules and prevents them from adhering. This concept inspired innovators to design a man-made hydrophobic material that has existed for industrial and commercial purposes for many years now. For our project, we would like to show the science behind this extremely beneficial substance and its everyday use.

Loomis Lab, Atrium

Visual Distillation of Ethanol and Water Omega Chi Epsilon (OXE)

This project provides a firsthand look into distillation, one of the fundamental separation techniques in chemical engineering. Distillation is a technique meant to purify or concentrate a



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mixture of substances, and is of universal importance from beverages, to oil, to chemical production. Our demonstration will showcase primarily how beverages with a high alcohol content are made commercially, beginning with a mixture of ethanol (the alcohol people drink) and water. To do this, we will exploit the difference in boiling points of ethanol and water while using a visual indicator to show the purification achieved.

Loomis Lab, Atrium

The Science of Brewing Beer

Illinois AIChE

We will examine the different chemical processes that occur during the brewing of beer as well as the different conditions that affect the quality of beer.

Loomis Lab, Atrium

Liquid Nitrogen Ice Cream

Illinois AIChE

Creating “Dippin Dots” by pouring melted ice cream into a tub of liquid nitrogen. Ice cream will be served in small paper cups to visitors.

Loomis Lab, Atrium

Alchemic Wonders of Electrochemistry

AIChE

“This project is designed to inform the audience about the discipline of electrochemistry through imitations of popular alchemic feats such as transmutation of gold and artificial life. As the audience engages with the different projects, our hope is that their perspective on chemistry can be expanded beyond the standard test tubes and beakers. Once completed, the

experiment demonstrations will include, (1) electroplating zinc and later a brass alloy onto pennies, (2) constructing a working circuit with lemons and LED lights, and (3) creating an oscillating chemical reaction that imitates a heartbeat on the surface of metallic mercury.

The lemon circuit demonstration informs the audience that the general battery runs on reduction-oxidation reactions. It also illustrates an alternative redox reaction other than the usual alkaline zinc/manganese oxide batteries that produces electric current. A more involved electrochemistry experiment though is our zinc-bronze plated pennies. This demonstration illustrates an application of redox reactions that do not result in energy production but is still valued for metal coating purposes. Overall we want the visitors to grasp the general concept of electrochemical reactions and have them see that industrial applications of this chemistry regularly appear in their lives.”

Loomis Lab, Atrium

Chemical ReOXEtions: Edible and Not

Omega Chi Epsilon (OXE)

Come join OXE in exploring chemical properties found in whipped cream and milk in this kid-friendly, interactive exhibit. We will be making edible whipped cream while exploring the interactions between detergent molecules and water. Moreover, we will use a colorful demonstration to explore the charged interactions between milk and detergent molecules found in soap.

Loomis Lab, Atrium

Gear Up!

AIChE

“This exhibit will be geared towards demonstrating safety procedures that are put in place in chemistry laboratories.

The purpose of lab coats, goggles, and gloves will be discussed in full, along with the different hazards that are present in labs. Other safety fixtures such as safety showers, fume hoods, and eye washes will also be discussed. The groups will also display a chemical spill kit and explain the different parts”.

Loomis Lab, Atrium

Slime Time

AIChE

Combine glue and liquid starch to create slime. Children will get a hands-on and visual experience on the different properties of polymers.

Loomis Lab, Atrium

Micro-encapsulation: From Food Products to Pharmaceuticals

AIChE

Come learn how popping boba from your favorite Froyo place is made and learn about the many other applications of micro-encapsulation!

Loomis Lab, Atrium

Biofuels

AIChE

Bio sources can be used to generate energy. In our project, we will use commonly used sugar sources to show how energy is generated through chemical reaction.

Loomis Lab, Atrium

Demonstration of Sustainable Soap

Illinois Biodiesel Initiative

Try out our newly made IBI sustainable soap made from coffee ground waste found on campus.

Loomis Lab, Atrium

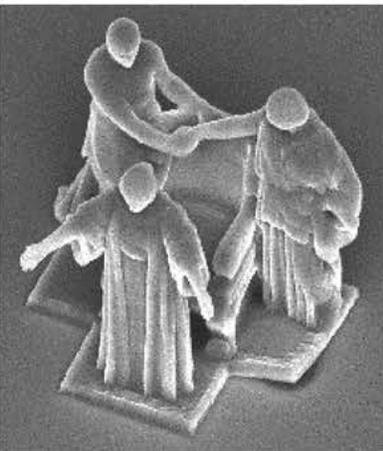
FREDERICK SEITZ MATERIALS RESEARCH LAB OPEN HOUSE

March 9 & 10, 9:30 – 4:00

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Microscopy Exhibits &
Interactive Demonstrations

ENTER HERE



3D Alma Mater printed
at the nanoscale!

Bacterial, plant and
other cells seen by a
confocal microscope!

The color of butterfly wings and other
specimens through a Scanning Electron
Microscope (SEM)

Hands-on magnetism display by the
Materials Research Science and Engineering
Center (MRSEC)

Hydrophobic and Hydrophilic surfaces:
naturally evolved and man-engineered

How does and AFM work? See if you can
“see” with our demo.

Rocks and other samples as seen through
different microscopes

www.mrl.illinois.edu/OpenHouse2018



Self-Siphoning Beads

Society of Physics Students

Watch a chain of metal beads leap out of their container in an exciting and counter-intuitive display of classical mechanics.

Loomis Lab, Atrium

Help! ChemEs have fallen and they can't get up!

AIChE

Safety is a very important aspect of Chemical Engineering in every industry. With this exhibit, you will learn about the main safety concerns in different chemical engineering industries with interactive demonstrations of the solutions! As always, worker safety and environment protection is every engineer's top priority!

Loomis Lab, Atrium

Electronic Instrument Band

Society of Physics Students

Play a keyboard powered by piezoelectric materials and learn more about the science of piezoelectricity!

Loomis Lab, Atrium

Physics at the University of Chicago

University of Chicago

Interested in physics research? Thinking about school at the University of Chicago? Come stop by!

Loomis Lab, Atrium

Chemistry Shore is Fun!

Alpha Chi Sigma

Here at Alpha Chi Sigma, we strive for the advancement of chemistry both as a science and as a profession. Come and have a "sands" on experience by learning how to make Moon Sand, Hydrophobic Sand and Kinetic Sand while also learning the chemistry behind them and how they can impact the future of chemistry.

Loomis Lab, Atrium

E&M Room

Society of Physics Students

Interactive experiments and demos to expose the public to interesting and fun physics

Loomis Lab, Atrium

Food for Thought

Society for Women in Physics

Various food-related experiments, some of which can be performed at home! Including: egg in a bottle, density tower, surface tension, marshmallow in a vacuum, electric pickle, and glow eggs.

Loomis Lab, Atrium

Paper Circuits

Society for Women in Physics

Make your own paper circuits! Use conducting paint and LEDs to demonstrate parallel and series circuits. Showcase your skills in art AND science.

Loomis Lab, Atrium

The Cloud Chamber

Physics International

Features a well-documented, Do It Yourself cloud chamber display and original supplementary explanatory material describing particle physics and particle physics detectors.

Loomis Lab, 136

Physics Van

A physics show for kids!

Loomis Lab, 141

sediments look like in rocks hundreds of millions of years old!

Natural History Building, 1066

Journey through the Amazon River Geology

Take a journey through the depths of the Amazon River and see what lies at the bottom of the World's largest river!

Natural History Building, 1066

OBSERVATORY

Observatory Open House

Astronomical Society at the University of Illinois

Solar Observing at the U of I Campus Observatory.

Observatory 128, dome

NATIONAL PETASCALE COMPUTING FACILITY

Blue Waters

Supercomputer

NCSA OPEN SATURDAY ONLY. Come see one of the world's largest and fastest supercomputers and the power and cooling that make it go! Learn about the amazing science discoveries it enables, from influenza and cancer to earthquakes, tornadoes and hurricanes, to gravitational waves and Big Bang explosions.

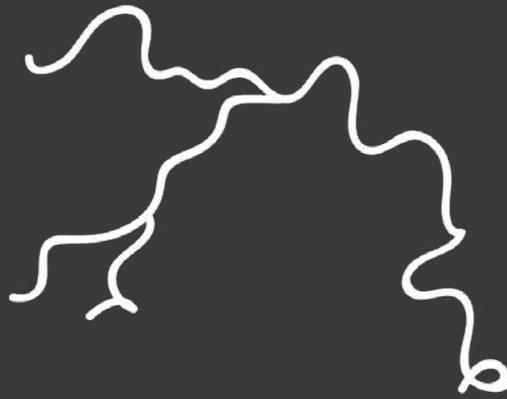
National Petascale Computing Facility (Oak St. and St. Mary's Rd)

NATURAL HISTORY BUILDING

Watching Sedimentary Rocks Form Geology

How do sandstones form and what do they look like? Come and see a thin water channel and observe how water moves sediment, and see sedimentary rocks forming in front of your eyes. Then look to see what these

TESLA COIL CONCERT



7.30PM
BARDEEN QUAD

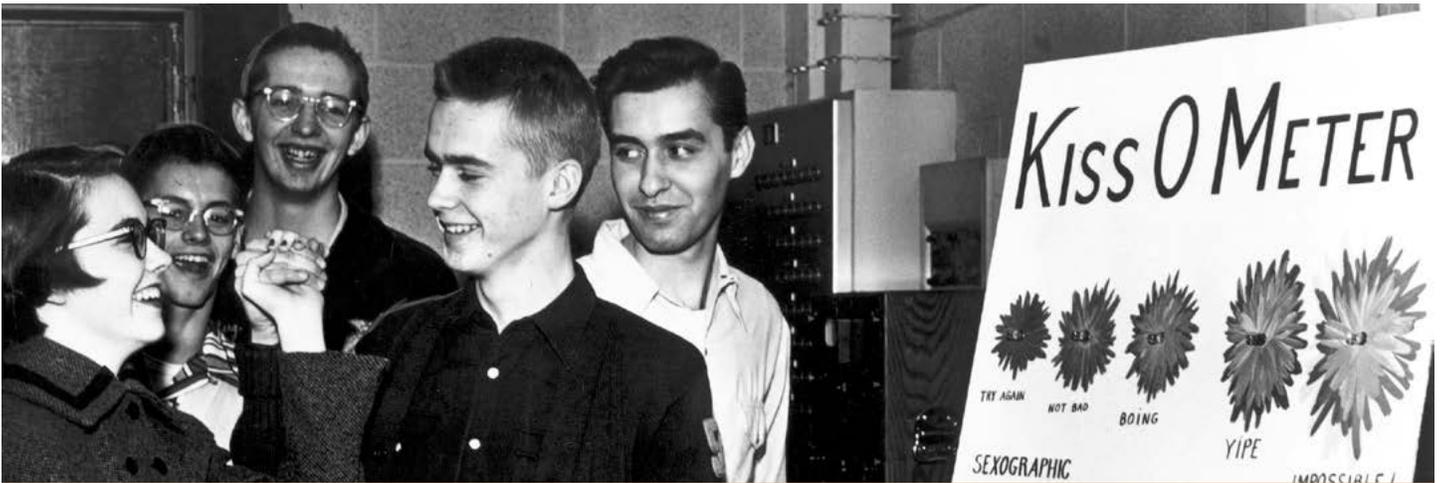


EOH PAST AND PRESENT

Since the beginning of Engineering Open House, the purpose has been to demonstrate the work of the college and the students in it. The precedent and inspiration for Engineering Open House came from individual department's events including a physics open house in 1906, the electrical engineering show starting in 1907 and a mechanical engineering open house in 1914. A college-wide Engineering Open House, as we know it today, started in 1920 and put an end to separate department showcases, except for the Electrical Engineering Show which continued until 1942. EOH premiered in 1920 commemorating the centenary of the birth of James Watt with a little over sixty exhibits. Engineering Open House was interrupted by the war but then returned biannually in 1948. By 1952 it was an annual event with over 100 exhibits and demonstrations including the Illinois Central Railroad, the Illiac and the concrete crusher, which continues to be an exhibit today.

Engineering Open House began as an attraction for high school students and throughout the years has turned into an event for all ages. By the 1950s EOH had drawn over 13,000 visitors including students from 42 high schools, today we have twice the visitors with over 600 high schools attending. In 1954 Engineering Open House used 19 buildings and the help of over 800 students in the College of Engineering in fields such as electrical, metallurgical, mining, aeronautical, mechanical, ceramic, agricultural, civil, and chemical engineering, and physics. The number of people involved in Engineering Open House has continued to grow since its beginning, as engineering and science continue to attract minds of all ages.





Engineering Hall, 1959

What we all need to know before Feb. 14. Too bad EOH happens in March...



Loomis Lab, 1998

We hope you get to see all of our hair-raising exhibits! We sure have ton!



DCL, 2015

Underneath all the exhibits, and crowds, and corporate logos, the idea of EOH is simply to show children of all ages that with a little imagination, and a lot of hard work, you can turn your dreams into a reality.

EOH 2018 CENTRAL COMMITTEE



Kourosh Arasteh
Director of EOH
Electrical Engineering
Junior



Adithya Bellary
Director of Exhibits
Electrical Engineering
Junior



Gonzalo Gutierrez
Sr. Corporate Director
Mechanical Engineering
Junior



Emma Sementi
Jr. Corporate Co-Director
Agricultural and Bio. Eng.
Sophomore



Aaliya Mumtaz
Jr. Corporate Co-Director
Chem. and Biomol. Eng.
Senior



Vighnesh Thanawala
Director of Judging and Awards
Mechanical Engineering
Junior

EOH 2018 CENTRAL COMMITTEE



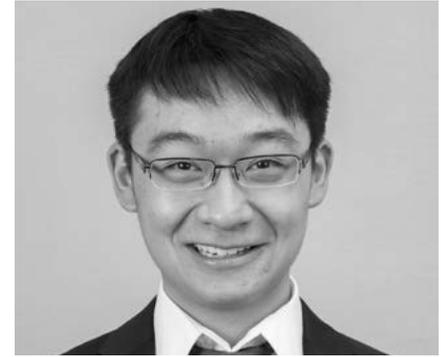
Ellie Hahn

Director of Creative Design
Advertising
Junior



Madison Wilson

Director of Facilities and
Equipment
Electrical Engineering
Junior



Johnathan Chang

Director of Traffic and Safety
Bioengineering
Junior



Priyalini Ai Bharath

Director of Visitor's Information
Material Science and Eng.
Sophomore



Jane Park

Director of External
Marketing
Material Science and Eng.
Sophomore



Jenni Nugent

Director of Internal
Marketing
Civil and Env. Eng.
Junior



Alixandra Ramos

Director of Internal Relations
Computer Engineering
Junior



Sriram Katragadda

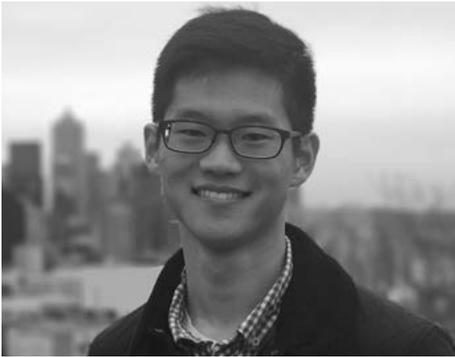
Treasurer
Systems Engineering and Design
Senior



Pratik Ainapure

High School Design
Competition Director
Electrical Engineering
Junior

EOH 2018 CENTRAL COMMITTEE



John Choi
*Middle School Design
Competition Director*
Computer Engineering
Junior



Michael Gale
*Midwestern Robotics Design
Competition Co-Director*
Industrial Engineering
Sophomore



Ted Stelling
*Midwestern Robotics Design
Competition Co-Director*



Andrew Gonsalves
*Director of Special Events and
Advancement*
Bioengineering
Junior



Sujal Sutaria
Director of Startup Showcase
Electrical Engineering
Sophomore



Jeffrey Varghese
Historian
Bioengineering
Junior



Emily Roth
EFC EOH Chair
Systems Engineering and Design
Freshman



Rahul Surti
Co-Director of Technology
Computer Engineering
Junior



JJ Xu
Co-Director of Technology
Computer Engineering
Junior

John Deere is proud to support
Engineering Open House 2018



JOHN DEERE

MESSAGE FROM THE DIRECTOR

Welcome to Engineering Open House and the University of Illinois at Urbana-Champaign! 2018 marks the 98th EOH held at UIUC. Every year, EOH draws thousands of students, families, teachers, and science-lovers to our campus to partake in a truly unique celebration of the best parts of engineering. This year, the EOH Central Committee is proud to present EOH 2018: Drafting the Future, a focus on the future of inclusive, interdisciplinary, and sustainable endeavors we want to pursue as engineers.

As an experience for our young visitors, EOH provides an opportunity to recognize the impact and passion of exhibitors who dedicate themselves wholeheartedly to bettering the world through their research. For our exhibitors, EOH provides freedom to develop a personal project that can change the world, demonstrate one of thousands of impactful research projects led by our students and faculty, showcase the technical projects undertaken in our RSOs and courses, or simply share an exciting concept in an accessible way to visitors of all ages and backgrounds. For our campus community, EOH represents one of the greatest points of pride, in both the caliber and the breadth of challenges being explored at our university.

I see EOH as an annual reminder that genuine passion exists for a diverse set of incredibly specific fields of engineering. To me, each exhibit represents a group of young innovators that will lead their field in drafting solutions to problems we have yet to discover. With nearly 1000 exhibitors this year and hundreds of competitors across 5 Design Competitions, I have no doubt that these young drafters have a bright future in mind.

Engineering Open House continues to thrive through the stewardship of another group of young drafters: the 24 Directors on the EOH Central Committee. In developing this totally student-run event, these directors work alongside vendors, corporate partners, and university contacts to ensure that EOH remains the dynamic and exciting event that our visitors have come to love. On behalf of the EOH Central Committee, I hope that you are inspired and delighted by your experience at **EOH 2018: Drafting the Future**.

Happy Exploring!

Kourosh Arasteh

Director, Engineering Open House 2018

ALUMNI JUDGES

Noah Flynn
Neil Bhide
Rohita Mocharla
Carl Remler
Gary B. Johnson
James Kryget
Larry Fehrenbacher
Eric O. Johnson
Christopher Billing
James Christensen
Matthew Wilson
Jon Edwards

Francis R Bouxsein II
Ken Taylor
Phillip Geil
Michael Lopez
Erik Coleman
Bruce Carpenter
Reza Farivar
Christopher Walton
Arnold Taube
Robert S. Chambers
Sam Mleczo

Samuel Rizzo
Benjamin Barnes
Michael J Streff
Theodore R Wilken
Steve Wegman
Ruben Esparza
Aimee Nugent
Nenad Marjanovic
Brandon Vlach
Maria Grazia Lupo
Vince McGrath
Bryan Wilcox

Leadership through Innovation



Rolls-Royce innovation powered the Concorde supersonic airliner for more than 25 years, providing the only regularly scheduled supersonic flights across the Atlantic. Today, Rolls-Royce is working with University of Illinois researchers to develop innovative new approaches to aircraft/engine integration, enabling future aircraft to be even more efficient and environmentally friendly.

As a proud sponsor of Engineering Open House and a Corporate Partner of the Illinois Leadership Center, Rolls-Royce is continuing its commitment to leadership through innovation.

Trusted to deliver excellence



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