ENGINEERING OPEN HOUSE

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

THE FUTURE, TODAY

MARCH 31ST – APRIL 1ST 2023

TABLE OF CONTENTS

Visitor's Booth
Have any questions? Need another visitor's guide? Exhibit suggestions? Find our volunteers to answer your questions in the Campus Instructional Facility (CIF).

General Tours
Want to learn more about the different resouces that UIUC has to offer and our various engineering buildings? Attend one of the ESTAR tours to learn more about our facilities and some history behind Grainger College of Engineering.

- Friday: 10-11 am, 12-1 pm, 2-3 pm, 4-5 pm
- Saturday: 12-1 pm, 2-3 p, 4-5 pm
- Departs from South Side of Grainger Library next to Grainger Bob

Food
Watch out for our students' favorite food trucks on Springfield Avenue!

VISITORS INFORMATION

Parking

Shuttle Services
Provided Friday and Saturday from 8 am to 5:30 pm at the following stops
- State Farm Center
- Everitt Laboratory
- Campus Instructional Facility (CIF)
- Electrical and Computer Engineering Building (ECEB)
- Siebel Center for Computer Science
- Siebel Center for Design

These stops will be indicated by signs and are also on the map on the next page

Parking
On Friday, you can park for free at Lot B-22 or Lot E-14 ONLY. You can also pay for metered street parking. On Saturday, you may park in any University Lot for free as parking is not enforced on the weekend UNLESS it says parking is enforced 24/7.

Bus Drop Off
School buses should drop off students and teachers at the designated EOH drop-off location at lot B-1. Bus drivers should then proceed to the Southwest Lot of the State Farm Center to park the bus and take the shuttle from there.

Street Closures
Springfield Avenue will be closed from Wright St. to Mathews Ave. Mathews Ave. will also be closed from Green St. to Springfield Ave. These street closures will be enforced from 7 am to 5 pm. Only corporate sponsors, judging, emergency vehicles and food trucks may access these routes.

Emergency Information

Bad Weather
Check the website in case of bad weather to see where exhibits will be held.

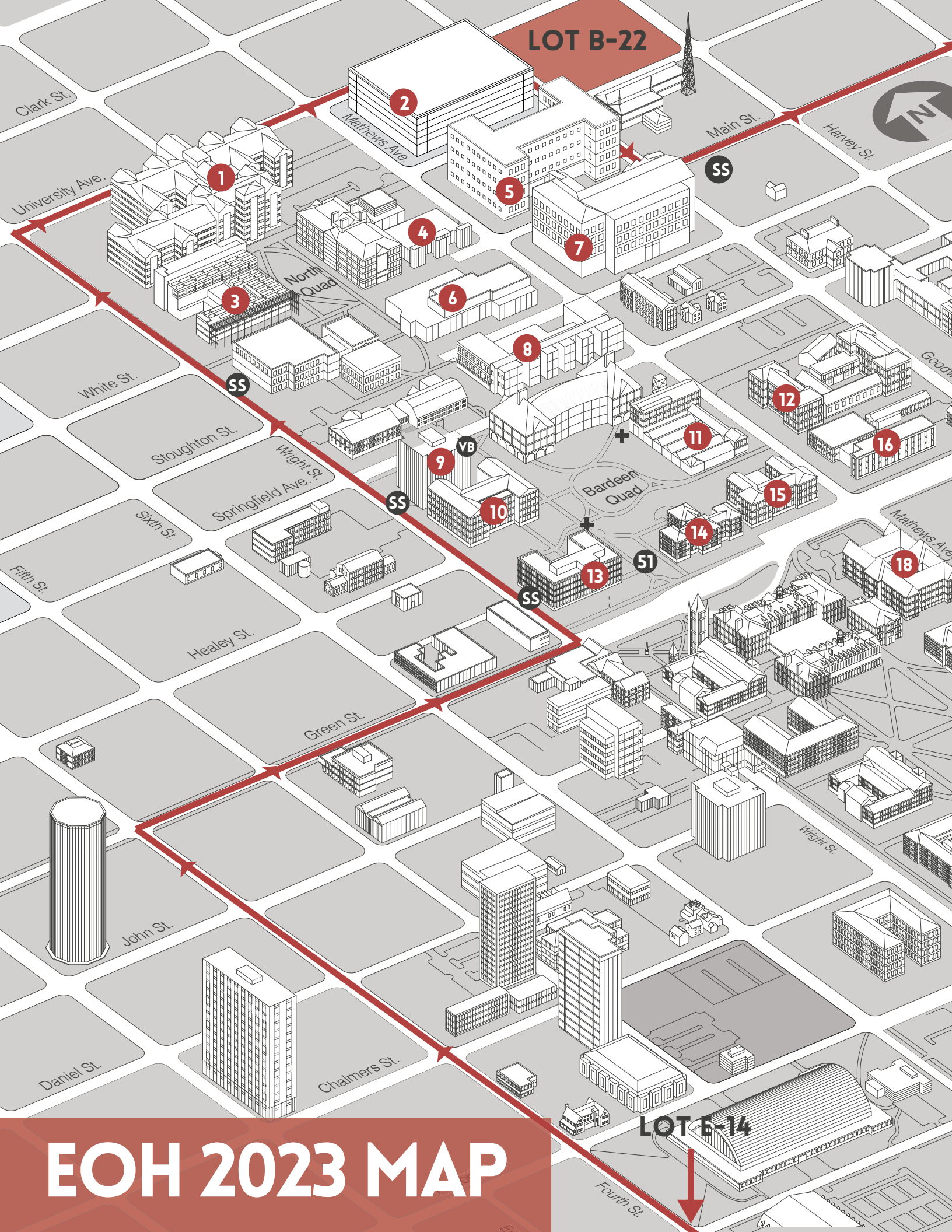
Missing Child
Please report any case of a missing child to the Visitor's Booth in CIF. Our volunteers throughout campus will be notified to keep a lookout for the lost child or parents of the lost child.

Medical Concerns
In case of injury, immediately notify any nearby volunteer and go to the EMS tent over Boneyard Creek or at the North-East corner of Bardeen Quad

Local Hospitals
Carle Foundation Hospital
Presence Covenant Medical Center

Lost and Found
Missing items can be brought to our lost and found at the Visitor's Booth in CIF between 9 am-5 pm on Friday and Saturday or at the Engineering Council Office (Engineering Hall 103C) any other time.

Other Emergencies
Approach any EOH volunteer in the Visitor's Booth in the Campus Instructional Facility


LOT B-22
Clark St.
University Ave.
Mathews Ave.
Main St.
Harvey St.
N
1
2
3
4
5
6
7
8
SS
North Quad
White St.
Stoughton St.
Wright St.
Springfield Ave.
VB
9
10
11
12
16
Bardeen Quad
15
14
13
51
18
Sixth St.
Fifth St.
Healey St.
Green St.
John St.
Daniel St.
Chalmers St.
Fourth St.
LOT E-14

EOH 2023 MAP

1. Beckman Institute
2. CSL Studio
3. Electrical and Computer Engineering Building (ECEB)
4. Hydrosystems Laboratory
5. National Center for Supercomputing Applications
6. Newmark Civil Engineering Laboratory
7. Siebel Center for Computer Science
8. Digital Computer Laboratory (DCL)
9. Campus Instructional Facility (CIF)
10. Talbot Laboratory
11. Mechanical Engineering Laboratory (MEL)
12. Transportation Building
13. Everitt Laboratory
14. Engineering Hall
15. Materials Science & Engineering Building (MSEB)
16. Sidney Lu Mechanical Engineering Building (LUMEB)
17. Loomis Laboratory
18. Natural History Building
19. Observatory

VB Visitor's Booth

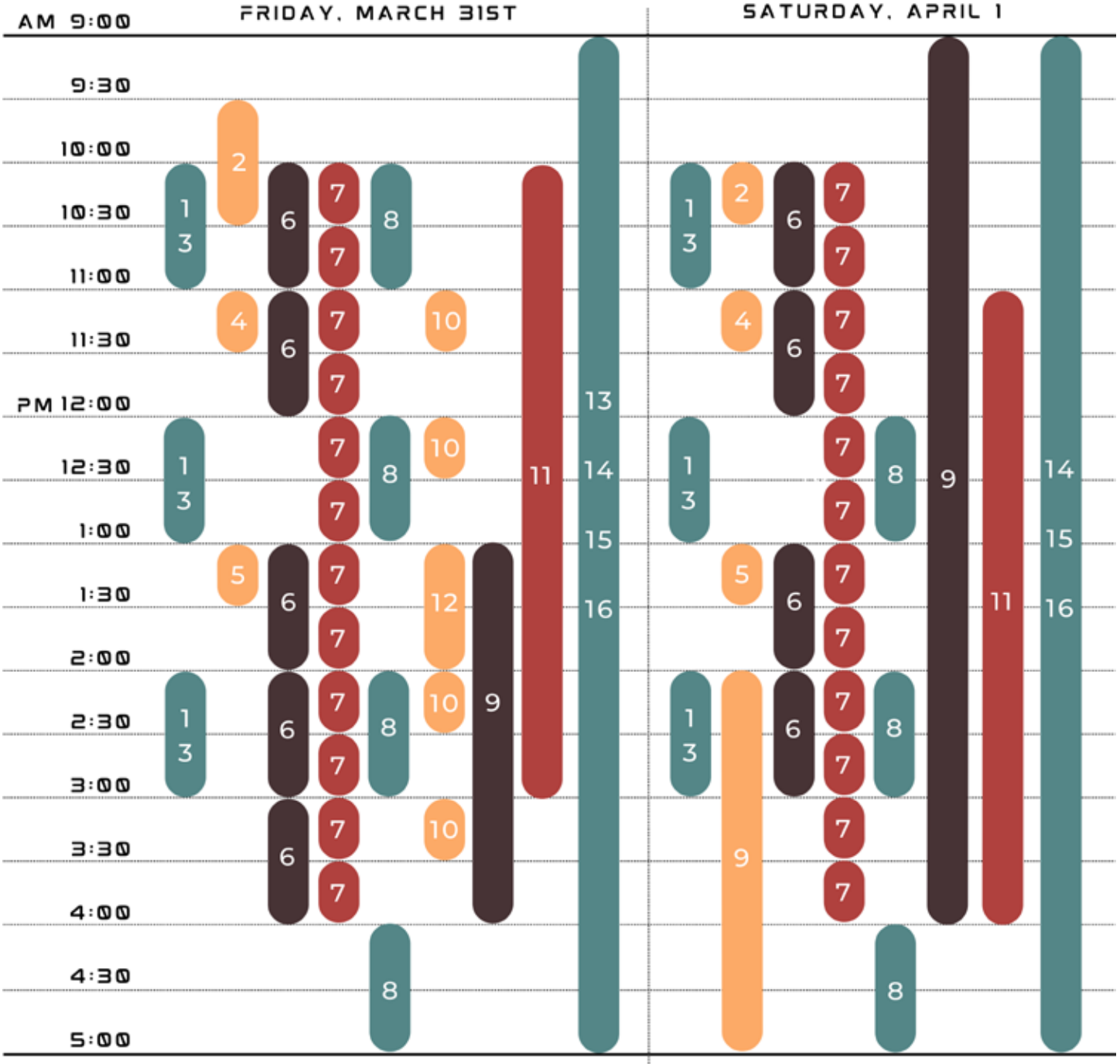
SS Shuttle Stop

51 Area 51

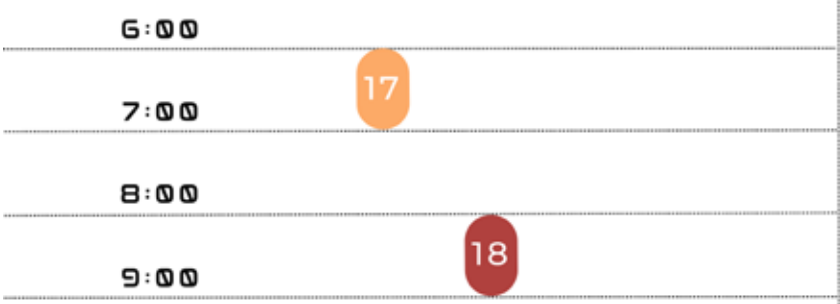
Emergency Medical Services

Parking Lot

SCHEDULE OF SPECIAL EVENTS



FRIDAY EVENING EVENTS



1. PHYSICS VAN
2. PROSPECTIVE STUDENT INFO SESSION & PANEL
3. KIMLAB ROBOT DEMO
4. WHAT I WISH I KNEW WHEN I WAS IN HIGH SCHOOL PANE
5. WOMEN IN ENGINEERING PANEL
6. ESPL DEMO
7. RUBE GOLDBERG
8. ESTAR TOURS
9. BUILD-A- BLINKIE
10. STARTUP SHOWCASE PITCH COMPETITION
11. CIF STARTUP BOOTHS
12. DYSON TECH TALK AND JAMES DYSON AWARD
13. NCSA
14. WIND TUNNEL DEMOS WITH WIA!
15. LEGO DESIGN LAB
16. JUMP SIMULATION CENTER DEMO
17. KEYNOTE SPEAKER
18. TESLA COIL

SPECIAL EVENTS

Keynote Speaker
CIF 0027 Saturday 4-5 pm
Todd Little is currently the chief architect for transaction processing products at Oracle. His main areas of focus are on security, privacy, confidentiality, performance, and scalability.Prior to being acquired by Oracle, Todd was Chief Architect for BEA Tuxedo at BEA Systems, Inc. While at BEA Systems, he was responsible for defining the technical strategy and direction for the Tuxedo product family. He also received his first two patents for methods allowing design patterns in a UML modeling tool to control the generation of software artifacts. He has since received an additional 39 patents.

Tesla Coil
Bardeen Quad Saturday 8 pm
Just as dark falls, visit the Bardeen Quad to see an electrifying display of light and sound.

Build-a-Blinkie
CIF 0035 Friday 1-4 pm, Saturday 9-4 pm
Build-a-Blinkie is an organization dedicated to the teaching of STEM. We are teaching people to solder one blinkie at a time. Come check out this interactive activity and take home your own soldered blinkie! The custom EOH Blinkies are sponsored by the Dyson Foundation, stop by their booth next to Build-a-Blinkie to learn more about their engineering innovation!

Dyson Tech Talk and James Dyson Award info-session
DCL 1320 Friday 1-2 pm
On Friday, March 31 from 1:00pm-2:00pm CT, join Dyson engineers for an info session and Q+A on their James Dyson Award. During the session, you will hear an overview of Dyson's design process and tips for what makes a winning entry to their annual engineering competition, the James Dyson Award.

ESPL Demo
Grainger Loading Dock Friday and Saturday: 10 am, 11 am, 1 pm, 2 pm. Additional demo Friday 3 pm
This EOH showcase track is for vehicles built and designed by engineering student teams for collegiate competitions: two formula racecars (one electric powered and the other gas), a Baja off-road ATV, a 3-wheeled super-mileage vehicle, an electric commuter concept car, a tractor-pull, and a solar powered vehicle. This is a great opportunity for action pictures and for the public to talk to team members between demonstration events.

Jump Simulation Center Demo
Everitt Basement Carle Jump Lab Friday and Saturday: 9-5 pm
Simulation training is revolutionizing medical education today. Come learn medical techniques in a low-risk environment with virtual reality, manikins, and more, it's as close to reality as possible without affecting a human's health and safety.

KIMLAB Robot Demo
LUMEB 1100: near Starbucks Friday and Saturday: 10 am, 2 pm
We make Robots In KIMLAB (Kinetic Intelligent Machine LAB)! KIMLAB members will showcase the latest robots developed and demonstrate how these robots can be used for various tasks. Don't miss out on this one-of-a-kind experience!

LabEscape
DCL 1262 Scan the QR code on the right to view times and sign up!
LabEscape: Quantum Salvation. World-renowned scientist Prof. S. desperately needs your help.
A terrible virus could be the end of life as we know it. Quantum tech is humanity's only hope...We recommend teams of five to seven people for this science-based escape room; we will help you by adding other solo agents until the roster is complete, with a minimum of four people required. If there are fewer than four agents by mission time, we may need to cancel that run, so your best bet is to assemble a team now!

SPECIAL EVENTS CONT

LEGO Design Lab
CIF 2036 Friday and Saturday: 9:30-5 pm
Feeling inspired from checking out student exhbits? Now it's your turn to become the engineer! Come check out our design lab where you'll be able to let your imagination run wild! Recommended for ages 10 and under!

NCSA
NCSA 1005 Friday 9-4 pm
See visualizations of galaxies, tornadoes, molecular structures, and more created by NCSA's Advanced Visualization Lab. Many of these visualizations were created for documentary films, IMAX, and museums and will be shown in 3D.

Physics Van
Loomis 141 Friday and Saturday: 10 am, 12 pm, 2 pm
Do you like explosions? Ever thought about using a banana as a hammer? Have you wondered why things are the way they are? Then come watch Physics Van! We are a traveling magic science show that wants to make science fun and relatable. Join us for an hour long show, or stop by at any time and enjoy our liquid nitrogen booth. It's the coolest demos you'll ever see (literally).

Prospective Student Info Session & Panel
CIF 2018 Friday 9:30-10:30 am, Saturday 10-10:30 am
Want to get a feel for life on campus as a Grainger engineering student? Come listen to student's talk about their first hand experience. They will be discussing everything from favorite classes to their favorite way to destress on campus!

Rube Goldberg
LUMEB 1047 Friday and Saturday: 10-3:30 pm, every 30 minutes
UIUC's Rube Goldberg Society's large sci-fi themed Rube Goldberg machine tells the story of some fruity aliens. Taking inspiration from the popular Rube Goldberg comics, the society creates one new giant machine of chain reactions every year to complete one simple task. Watch their machine run every half hour.

Startup Showcase
CIF 3039 Startup Booths Friday: 10-3 pm Saturday: 11-4 pm
The Startup Showcase is dedicated to celebrating student entrepreneurs! Come see what our inventive Illinois students have been working on at their booths and experience demos, giveaways, and much more!

CIF Monumental Steps Friday 11-11:30, 12-12:30, 2-2:30, 3-3:30 pm
The Startup Showcase pitch competition is a rapid-fire session where our 20+ teams will explain what they've been working on, and try to sell you on it!

What I Wish I Knew When I Was In High School Panel
CIF 2018 Friday and Saturday: 11:00am - 11:30am
Listen in on advice from current college students on what activities helped them discover their passion and any tips they have for prospective students!

Wind Tunnel Demos with WIA!
Talbot Laboratory Friday and Saturday: 9-5 pm
Stop by Talbot Lab to learn about flow with the Women in Aerospace! WIA graduate students are doing demonstrations of the Aerospace Department wind tunnels with a moving airfoil lab! These wind tunnels are great examples of how we can model and research airflows for a variety of industries, such as automotive and industrial uses.

Women in Engineering Panel
CIF 2018 Friday and Saturday: 1:00pm - 1:30pm
Check out some of our women engineering students and professors talk about their experiences in their respective fields!

DIRECTOR'S NOTE

Welcome to Engineering Open House and the University of Illinois! We are extremely happy to welcome all of our visitors, field trips, community members, students and faculty to the 101st in-person EOH! For the past 100+ years EOH has drawn hundreds of thousands of visitors to the University of Illinois and provided a unique outlet for visitors to explore engineering. As we rebound from the pandemic, we want to highlight the tremendous speed at which the Grainger College of Engineering and the field in general is evolving with our theme, **The Future, Today**.

To our visitors we hope that EOH provides an outlet for everyone to explore engineering and STEM related fields. This year we welcome 200+ exhibits to EOH ranging from drone demonstrations to prosthetic hands and a wind tunnel demo. We believe that every exhibit at EOH has the ability to make an impact on our visitors and highlight the prestige of the Grainger College of Engineering and our students. We hope that by exploring our student exhibits, special events and corporate talks, EOH will help to inspire future generations to become involved in engineering and reimagine **The Future, Today**.

We would like to take a moment to thank all of our student-led exhibits, volunteers, campus partners, faculty and Grainger administration. EOH would not be what is today without your help, imagination, resilience and dedication to making engineering accessible to all. Additionally, Engineering Open House would not be possible without the 26 Directors on our Central Committee. Being a completely student-run event we rely on the work of our Directors to execute and plan each event all while balancing academics, jobs and other extracurriculars; the time they have dedicated to EOH is immeasurable and will forever be remembered in this year's EOH. As a final note, we thank all of our visitors for attending EOH and we hope that you will be able to get a glimpse into what engineering will look like in **The Future, Today.**

Happy Exploring and Safe Travels!

Mary Ehmann & Riccelo Guidorizzi
Directors, Engineering Open House 2023

EXHIBITS

EXHIBITS

AIAA
UIUC Student Branch of AIAA
We are a student branch of the American Institute of Aeronautics and Astronautics (AIAA), a national organization focused on professional development and preparing engineers for the aerospace industry. Come see our exciting tech projects and learn more about what we do!

Blended Wing Body Aircraft
Drones
Jet Engine

Alma's Talking Dogs
Alma's Talking Dogs
"A window into your dog's thoughts", this student-led EEG club uses canine neural impulses to design filtration circuits and machine learning software that fits into a wearable handband

Smart Technology
Programming
Kid-Friendly

Biodiesel Production
AIChE and Illinois Biodiesel Initiative (IBI)
Learn how biodiesel and soap can be produced from waste cooking oils from UIUC dining halls to achieve sustainable outcomes! We can even make soap as a byproduct! Watch a biodiesel Go Kart!

Bio-Fuel
Chemistry
Future-Oriented

Blastoff!
Illinois Space Society
At this exhibit, students would be able to learn about hybrid rocket engines as well as watch a water Cold Flow test of a hybrid engine currently in development by a team here at UIUC. Students will also get to watch a baking-soda volcano explosion!

Outer Space
Future-Oriented
Physics

Capturing Color
MSE 183
Come play with color and witness the science behind copolymerization as liquid transforms before your eyes into explosive gel beads.

Innovative Materials
Molecular Scale
Kid-Friendly

Ctrl-Z
CTRL-Z
High school robotics team CTRL-Z presents our competition robot alongside kid-friendly STEM crafts

Robotics
Kid-Friendly
Design Team

FPGA Fun!
Institute of Electrical and Electronics Engineers
Come learn how developers built Mario from scratch and program a couple moves yourself! This interactive exhibit involves learning what Field-Programmable Gate Arrays (FPGAs) are and how they have historically been used in game development.

Electronics
Programming
Good for older students

Illini EV Concept
Illini EV Concept
Student RSO that builds sustainable electric vehicles, and works with computer vision for autonomous driving. We design, manufacture, and program the whole car, and compete in the annual Shell Eco Marathon.

Cars
Sustainable
Future-Oriented

Illini Robomaster
Illini RoboMaster
We are illini Robomaster! We build robot that shoot plastic balls to compete with other university teams. Interesting in robotics/ vision/ Auto aim? Did you heard of carbonfiber/ Mecanum wheel /swerve dirve? Come and check it out!

Robotics
Electronics
Mechanics

Illinois Space Grant Consortium
Illinois Space Grant Consortium
Illinois Space Grant is part of NASA Space Grant and Fellowship Program and our mission is to coordinate opportunities in the STEM (Science, Technology, Engineering, and Math) disciplines to inspire, engage, educate, and employ the diversity of Illinois' population in space science and exploration.

Outer Space
Future-Oriented
NASA

iRobotics - Interactive STEM Activities
iRobotics
Get hands-on with robotics and engineering! Explore several interactive displays that let you battle with robots and build anything you want. While you're at it, learn more about the largest robotics RSO on UofI campus and our various competitive and project-based robotics teams!

Kid-Friendly
Robotics
Art & Design

Mission to Mars!
American Chemical Society
Join the American Chemical Society on a journey to Mars in Mission to Mars! Come design and test your own rocket, discover what makes up Martian dirt, and learn about how we can breathe on Mars. You'll explore NASA's latest rover and bring home your very own rocket.

Chemistry
Outer Space
Kid-Friendly

M&M Gel (Magical and Muscular)
Wang Research Lab
Our group studies on Magical (functional) and Muscular (strong) gels to cure diseases. This includes tough, bio-adhesive, or porous hydrogels (water-like gels!). By controlling these properties of hydrogels, we intend to stop bleeding, deliver drugs, or teach immune cells to treat various types of diseases.

Materials Science
Biomaterials
Research

Off-Grid PV System Demo
InSPIRE (Institute of Scientific Progress, Innovation, Research and Edu-Training)
Learn the basics of how to build an easy off-grid solar PV system! Offgrid solar PV systems deposit solar energy -via solar panels- to a battery which can be used to power your devices without the electric grid. Learn about its basic construction and applications.

Sustainable
Environment
Electronics

Off-Road Machinery
Agricultural Engineering - Off Road Machinery
Come and compete with your peers on making our RC car most efficient while learning about surface traction, weight distribution, and more!

Agriculture
Mechanics
Cars

Prosthetic Hand Playing the Saxophone
Biomedical Engineering Society (BMES)
Have you ever wanted to play a musical instrument but are an amputee? This device allows amputees missing their right hand above the wrist to play the alto saxophone through their forearm muscles rather than their wrist.

Prosthetics
Robotics
Electronics

Ready, Aim, Fire!: Coilguns in Action
Triangle Fraternity
Ready, Aim, Fire! Learn about how coilguns harness the power of electromagnetism to shoot projectiles at hundreds of feet per second (even with no moving parts!), then optimize our custom built coilgun to punch through water balloons, water bottles, and watermelons!

Mechanics
Physics
Electronics

Riveting with the Student Aircraft Builders!
Student Aircraft Builders
Every day students at UIUC reach for the sky! The Student Aircraft Builders have brought the plane we're making to do just that and it's on the quad for you to come see! Join us as we teach about what goes into making an aircraft with hands on riveting experience!

Planes
Construction
Mechanics

Robobrawl — Robotics
Robobrawl — Competition
Come and watch 30LB and 1LB combat robots duke it out in a exciting double-elimination bracket tournament! Filled with sparks and destruction you don't want to miss! — Good for older students

Shape Memory Materials — Smart Technology
Material Advantage — Molecular Scale Research
Stop by and see how special materials can remember their shape! We will conduct demonstrations with Nitinol, explain the science behind these smart materials, and discuss applications for Earth and beyond.

Superconducting Race Track — Physics Mechanics
American Society of Mechanical Engineers — Good for older students
A mobius strip apparatus which is made of magnets that will display the meissner effect on a superconducting magnet which will levitate through this track

The Liquid Rocket Initiative — Future-Oriented Physics Outer Space
AIAA / Liquid Rocket Initiative
Liquid Rocket Initiative takes rocketry at UIUC to the next level. Having manufactured our first engine and with our test stand as well as our second and better engine on their way, we will be able to start building a flight vehicle capable of reaching new heights!

The Science of Cotton Candy — Materials Food Kid-Friendly
Material Advantage
You've seen it at fairs, carnivals, and more, but what exactly is cotton candy, and how is it made? Stop by our booth to watch cotton candy being spun, learn how it's similar to fiber glass, and even take some cotton candy home for yourself!

TRASHCANO! an outdoor demo of a volcanic eruption — Geology Physics
UIUC Volcano Lab — Good for older students
An outdoor demo simulates explosive volcano eruption, providing visualization for students to get insight into eruptive processes and understand the related basic physical principles. This demonstration is on a scale accessible to students, using trash can, soda bottles, liquid nitrogen etc.

VEX Robotics — Robotics Programming Mechanics
Illini VEX Robotics
Discover autonomous robots using navigational sensors and computer vision to avoid obstacles and play a game of disc golf!

WIA Rockets and Gliders — Outer Space Planes
Women in Aerospace — Good for older students
Explore the skies with WIA! Design, build, and launch your own rockets and gliders, or stop by our wind tunnel demo in Talbot Lab to see how planes fly!

LabEscape
Physics
World-renowned quantum physicist Professor Alberta Pauline Schr√∂denberg is quarantining and desperately needs your help; the fate and security of the entire world hang in the balance. You'll have to search her lab, solve mind-blowing puzzles to reveal clues, and hopefully find a way to complete your mission!

Physics
Art & Design
Good for older students

Augmented Reality Service Information — Programming, Robotics, Smart Technology
Illini VEX Robotics
Augmented Reality Service Information and Virtual Object Manipulation

beLeaf — Programming, Environment, gardening
Women in Computer Science
We are working on beLeaf, a mobile application geared toward beginner gardeners that aims to make gardening accessible to everyone, no matter their lifestyle. With an emphasis on personalization, our app will be implementing a multitude of filter features that allow a user to choose a fruit/vegetable they can grow at home. Additionally, there are other pages that track statistics about the user's garden and environmental impact.

Biological Sensors: EMG Demonstration — Electronics, Health & Medicine, BIology
Biomedical Engineering Society
Biological sensors are instrumental in modern medicine for the development of exciting medical technologies. We are exploring the use of electromyography (EMG) sensors, which enable us to measure signals from our muscles. Come see these sensors in action at our exhibit!

Bringing Back the Bondi Blue: Retrofitting the Original iMac for Next-Gen Computing — Electronics, Sustainable, Art & Design
Electrical & Computer Engineering
Take a trip down memory lane as we modernize the iconic iMac G4! From upgrading the processor and RAM to installing a modern operating system, we'll transform this classic desktop into a fully-functional machine capable of running contemporary applications and breathe new life into a piece of computing history.

Codegreen — Programming, Smart Technology, Data Science
Women in Computer Science
We plan on aggregating and visualizing the occupancy of buildings on campus. Currently, many students have issues finding space on campus in high-traffic areas. To help students make more informed decisions, we hope to use web scraping, crowdsourcing, and Wi-Fi analytics to estimate occupancy.

CS Unplugged — Computing, Kid-Friendly, Programming
CS S.T.A.R.S.
CS STARS students will teach Computer Science through engaging games and puzzles that use cards, string, crayons and lots of running around to promote Computer Science (and computing in general) to young people as an interesting, engaging, and intellectually stimulating discipline.

Digital Notes with Any Pen on Any Surface — Programming, Art & Design, Kid-Friendly
ACM
Using any pen and a webcam, you can draw on any surface without expensive tablets and stylus.

Electric Motors for Electric Vehicles and Electric Aircrafts — Electronics, Mechanics, Planes
ECE
Join to learn how to make an electric motor, how to control it and then how to use it to drive electric cars or electric aircrafts. You can learn the basics of electromagnetism, how to use it to design motor, how to overcome the heat and use it to drive cars and planes.

Engineering Exploration at Illinois!: A Multi-Disciplinary Rube Goldberg Machine — Design Team, Kid-Friendly, Art & Design
Engineering Freshman Council
Designed by a diverse team of engineering freshmen, this Rube Goldberg machine catapults you through a multidisciplinary exploration of Grainger's engineering majors. From computer vision to simulated earthquakes and fluid dynamics, this exhibit is designed to spark your imagination and encourage you to say "Yes!" to engineering at Illinois.

Estimating Tactile Models of Heterogeneous Deformable Objects in Real Time — Robotics, Agriculture, Research
Intelligent Motion Lab
I have been working on plant modeling for agricultural robotic manipulation, like picking fruits. Since robots need to have frequent interaction with leaves and branches to reach in such clutter environment, model the soft/hard regions is important to avoid damage and enable efficient task execution. I proposed a point-based representation of plants that can effectively model the heterogeneous stiffness of plants, and can also be estimated efficiently in real-time using force/torques measurements on the robot.

Exploring the Challenges of Cybersecurity — Research, Cybersecurity, Future-Oriented
Information Trust Institute
The Information Trust Institute presents an introduction to cyber risk and cybersecurity. The Information Trust Institute is leading the campus effort research, educate and impact the protection of an interconnected world reliant on secure critical infrastructure. Please stop by and learn more about the challenges and the many evolving solutions.

Hello World — Programming, Finance, Management, Good for older students
Women in Computer Science
A web app that allows a user to input spendings/earnings; reward by allowing them to build a garden (inspired by Forest study app).

ICON Research Lab — Robotics, Research, Programming
ICON Lab
The UIUC Intelligent Control (ICON) lab develops algorithms for autonomous systems to interact with other agents safely and intelligently. Our goal is to enable autonomous systems to become integrated into the fabric of human life and act in the favor of society.

Illini Solar Car — Sustainable Design Team, Cars
Illini Solar Car
The Illini Solar Car team harnesses the skills of a diverse group of students in engineering and non-engineering fields in pursuit of creating the world's best solar electric vehicle. Through hands-on, interdisciplinary work that fosters real-world applications, we spark sustainable thinking by designing and building a road-legal car to compete in international competitions.

Interactive Octopus Arm Simulation — Biology, Robotics, Mechanics
Rhanor Gillette Lab
Interactive Octopus Arm Simulation: This is an interactive software that simulates the movement of the arms of the octopus. In this simulation, users can play with the arms using virtual odor stimuli and observe the movement patterns of a soft-body robotic arm controlled by the octopus arm nervous system.

ITE@UIUC Public Transportation Systems — Cars, Future-Oriented, Smart Technology
Institute of Transportation Engineers UIUC Chapter (ITE@UIUC)
We will be displaying posters of pictures and comprehensive case studies on public transportation systems along with an autonomous driving simulator and a traffic light. With new technologies emerging in the field of transit, our goal is to emphasize the importance of public transportation systems for smart urban mobility.

Job Hunters — Programming, Data Science, Education
Women in Computer Science
Data-Driven EdTech APP

Karaoke Ride to The Future — Future-Oriented, Transportation, Kid-Friendly
ASCE T&DI (ASCE Transportation and Development Institute)
This is a Karaoke singing station, we created an educational song about transportation advancements and how it would look in the future

Nanoparticle Inducing Device (NID) — Mechanics
KESS (Korean Engineering and Science Society) — Future-Oriented
Save the human race with future technology! Have you ever had a dream of becoming a doctor? Come visit our booth to try one of the greatest innovative technologies to see whether this device can help construct better technology for the doctors in the future. — Biology

Pathfinder — Programming
Women in Computer Science — Smart
A mobile application (iOS and Android) that connects all the user's streaming services to show them all the available options in one place. — Technology, Data Science

Power & Energy Demos — Electronics
ECE Power Group — Sustainable
The Power & Energy Group at ECE Illinois is excited to showcase a series of interactive demos that show the wonders of electrical energy! The list of interactive and fun demos include a Magnetic Ring Cannon, Floating Frying Pans, and more! Join us during EOH at the Electrical & Computer Engineering Building, Room 4024! — Fun

Precious Plastic — Environment
Illini VEX Robotics — Sustainable
Plastic waste is generated by our campus maker spaces everyday, Precious Plastic within IVR has been working with SCD to build machines to re-use some of that acrylic waste by melting it back into sheets for maker spaces to use. — Electronics

Robotic Arm — Robotics
Women in Electrical and Computer Engineering — Electronics
Come meet S.U.N.D.A.Y, a fun robotic arm you can control through an app on your phone! It can twist and turn at your command as well as assist you by picking up and moving small objects. — Programming

Smart Balance Board — Smart
I-MADE — Technology
A "smart" balance board that can return live feedback using LED lights and a OLED screen on the angle and balance performance of the patients to the physical therapist, maximizing the training and rehabilitation of the ankle after injuries. — Health & Medicine, Design Team

Smart Future City — Future-Oriented
Korean Engineering and Science Society — Smart
Welcome to the "Smart Future City"! This is our next-generation city that is fully powered by renewable energy. City also provides a smart network of lighting and sensors that will make your life more efficient and convenient. Please stop by our project and see what our future looks like. — Technology, Sustainable

SpaceLab Illinois — Physics
Space Lab Illinois — Good for older students
Inspired by recent space launches? Join us to learn how we use rocketry and avionics to learn data analysis and system engineering. This course allows exploration of Newton's 2nd Law through guided video modules that develop foundation knowledge, building skills, and analysis of predicted and actual data. — Outer Space

Srikar — Robotics
Health Care Engineering Systems Center, CSL — Health & Medicine
Stroke patients usually find difficulty in going to a hospital for obtaining recommended amount of rehabilitation. The scarcity of therapists aggravates this problem. So, a tele-rehabilitation platform is presented here to facilitate recovery of patients from their home. The patient can follow the trajectories of a remote therapist, perceive them visually and also experience force-feedback in the environment they operate. — Good for older students

Synth Phi Delta — Music
Sigma Phi Delta Fraternity — Electronics
Our project team looks to design a retro music synthesizer with intuitive controls and a modern educational display that shows users and on-lookers how an array of common musical instruments can be produced by manipulating the same basic mathematical waves each in unique ways. — Kid-Friendly

The ACM Bazaar
Association for Computing Machinery (ACM)
Come see a working vending machine built by members of ACM! This vending machine dispenses everything from water/drinks to ACM merchandise; these can be purchased using US dollars or through a variety of the point systems that ACM uses for their Special Interest Groups.

Smart
Technology
Programming
Electronics

Zero2One
Zero2One
“Become an entrepreneur today.” Zero2One is the only startup incubator on campus and a pipeline to iVenture/COZAD. It doesn’t matter if you don’t have a startup idea, in fact most of our cohort doesn’t have an idea coming in. We’ll help you design and execute your startup.

Entrepreneurship
Future-Oriented
Tech Startups

Egg-xtra Protection: Engineering a contraption to protect a raw egg from a high fall!
Kid-Friendly
Physics
Art & Design
Engineering Outreach Society
Interested in an egg drop competition and the egg-citing science behind it all? Come by our booth to learn about the challenge we proposed to these students: design a contraption using various recyclable materials to protect a raw egg from a high fall!

History of Bridges
Construction
Environment
Physics
Engineers Without Borders
Bridges are invented several thousand years ago, and our understanding to bridges are still changing today. In this exhibition, we are going to show the structures of bridges in the past, analyze their shortcomings as well as other aspects, and construct a viable structure in the future.

Hybrid (Dynamic-Static) Wireless Charging in the CUMTD Bus System
Smart
Technology
Transportation
Sustainable
Eshana, Logan, Ella and Amy
This research project investigates the technical, financial and operational feasibility of incorporating static-dynamic hybrid wireless charging into the CUMTD bus system on campus. This project examines existing projects, technology infrastructure and design parameters. It also conducts a break-even analysis using cost estimations.

Innovative Illuminations
Electronics
Programming
Art & Design
Open Source at Illinois
Want to discover how open-source technology shapes engineering? Stop by Open-Source at Illinois' exhibit to have fun with interactive LED displays and machine learning-powered camera filters, entirely powered by Open-Source Tech.

Loteria Machine and Robotic Hand 3.0
Robotics
Electronics
Kid-Friendly
Society of Hispanic Professional Engineers (SHPE)
Do you want to play a game against a robot? Come play a friendly game of Loteria, a traditional Mexican game, with us! Don't forget to come high five our robotic hand and learn some letters in ASL (American Sign Language)

Mini Forklift
Electronics
Good for older students
Mechanics
Pi Tau Sigma
Our exhibit is a remote-controlled small-scaled forklift. Although smaller, the forklift will likely still be a decent size. It should be operable with a remote control to drive, turn, and raise or lower the prongs, which we will hopefully be able to demonstrate.

Pulse Smart Watch
Smart
Technology
Electronics
Programming
Pulse Illinois ECE
What goes into building a smart watch technology! Stop by our exhibit to learn more about how we build our smart watch design, and see how you can build it yourself! We use the smallest Arduino with an LCD screen and battery along with our creative design to build it.

Students for Environmental Concerns - Energy Trivia
Environment
Smart
Technology
Kid-Friendly
Students for Environmental Concerns
Come test your knowledge about renewable energy sources!

Virtual Welding Experience
Construction
Smart
Technology
Electronics
ABE 199
Test your hands on skills with our new welding simulator! Don't worry about the fire hazard, as this simulator is purely virtual, but its real world application is anything but!

UIUCFreeFood
Food
Health & Medicine
Programming
UIUCFreeFood
The UIUC Free Food (@UIUCFreeFood) is a crowdsourced community effort, helping thousands of college students at U of I find free food around campus. It's for people who can't afford to eat. It's for people who don't have time to cook. It's for people who love free food. It's for anyone and everyone.

Vertically Landing Rocket — Rockets/ Aerospace / Future-Oriented / Planes
Vertically Landing Rocket
The 21st century will be remembered by self-landing rockets. We built a vertically-landing rocket using fully 3D printed parts and exciting software that together allowed us to achieve the unimaginable fifty years ago.

EVERITT LABORATORY

Amazon Alexa Simbot Challenge - Team Kingfisher — Programming / Robotics / Smart Technology
UIUC Team Kingfisher
Explore the future of computer science by playing a video game using only your voice! UIUC's Team Kingfisher is competing in the Amazon Alexa challenge to help develop computers' ability to understand instructions in natural language and convert it to tasks, and we welcome you to test our agent!

ASL Sign-Along Glove — Health & Medicine / Electronics / Kid-Friendly
Individual
Come check out our ASL Sign-Along Glove! Wear our glove while playing ASL mini-games and learning ASL signs. The glove uses sensors and an ML model to tell you if you got the signs right and how to improve.

Astronaut Tool Design: Reinventing the Wheel — Outer Space / Future-Oriented / Physics
Illinois Space Society
At the ""Astronaut Tool Design: Reinventing the Wheel" exhibit, students would learn about the process of astronaut tool design and the influence of ergonomics. Additionally, students will be able to experiment with picking items up using astronaut gloves and helmets and using lunar sampling tools!

Autonomous Drone: Road to Artificial Intelligence — Robotics / Future-Oriented / Programming
AE483: Autonomous Systems Lab
Tired of your drone always flying into your furniture and walls? Come check out our drone's ability to autonomously avoid obstacles and redirect itself without crashing. At this exhibit you get to challenge our drone by setting up your own obstacles and seeing if it can fly through them!

Biochemistry in Action! — Biology / Chemistry / Microbiology
Biomedical Engineering Society
Learn about the fascinating world of microbial biochemistry and the newest advances in biology through enzymes, bacteria and exciting chemistry! Experience how bacteria communicate together in an glowing display of quorum sensing or how aerobic cells like yeast can break down toxins in a volcanic reaction!

Bioplastics in Medical Devices — Chemistry / Sustainable / Health & Medicine
Biomedical Engineering Society
Out of the 14,000 tons of waste each hospital puts out per day, one quarter of that waste is plastic. Our exhibit researches how bioplastics can be used in medical devices to offset plastic waste and create a cleaner community for everyone.

Conservation of Clean Water — Agriculture / Water / Environment
Agricultural and Biological Engineering
H20 the source that we all share! Want to learn about clean water resources and what clean REALLY means? Filter water with a Brita, cheesecloth, and hiking filter to see how clean your water really is! Go with the flow with our H2O!

Drone Inverted Pendulum — Robotics / Mechanics / Electronics
Aerospace Engineering
The Balancing Drone, a drone that can fly around while balancing a stick on itself!

Epi-Push: An Innovative Epinephrine Auto-Injector — Health & Medicine / Design Team / Research
BMES
Epinephrine auto-injectors are the primary form of care for life-threatening allergic reactions, however, for the past 20 years, innovation has been stagnant while acquisition cost has skyrocketed. Epi-Push is an innovative solution that aims to make the auto-injector safer, more inclusive, and cost-effective.

Flextris -- Electromyography Controlled Video Games — Health & Medicine, Electronics, Kid-Friendly
Individual
Using electromyography, we created a new way to play Tetris! This uses biofeedback from the muscles in your arms rather than a video game controller to move left, right, or rotate!

Hydrogels in Tissue Engineering — BIology, Chemistry, Health & Medicine
Biomedical Engineering Society
Polymers in the form of hydrogels are very useful materials in tissue engineering and in applications such as wound healing, delivering medicine, and bone repair. Come learn all about hydrogels, how they are used in medicine, and even make your own!

Interactive Synthetic Biology Display — Water, Electronics, Design Team
American Society of Agricultural and Biological Engineers
Mimicking how bacteria can move about in a microscopic world, visitors will be allowed to create their own paper bacterium that swims across the surface of water while learning more about synthetic biology from the American Society of Agricultural and Biological Engineers at Illinois.

It's Not Rocket Science — Outer Space, Future-Oriented, Physics
Illinois Space Society
At "It's Not Rocket Science", students will learn why and how we make rockets, as well as the flight lifecycle of a rocket (from liftoff to landing) and how we can control them. Additionally, students will be able to participate in a parachute bouncy ball landing challenge!

Life on Mars — Outer Space, Future-Oriented, Physics
Illinois Space Society
At this exhibit, students will learn about Scientific Regions of Interest (SROI) on Mars and pretend to be astronauts, excavating and collecting their very own Martian artifacts! Additionally, students will learn how to design a mission to Mars and create schedules for their astronauts to follow!

Monster's Inc Scream Machine — Electronics, Kid-Friendly, Audio
Individual
Monster's Inc Scream Machine, come see how your voice can be converted into power! Speak or scream into the microphone and see the Monster's Inc Energy Canister light up!

OXE Water Electrolysis — Chemistry, Water, Kid-Friendly
Omega Chi Epsilon
Did you know water can be broken apart? Come see how oxygen in the International Space Station and how clean energy can be created through one or two easy steps. Using the same steps, come blow up some bubbles with water electrolysis!

Regenerative Medicine: Hydrogels! — Prosthetics, BIology, Chemistry
AIChE
Want to learn how doctors heal patient's wound quickly? Tissue engineering is an exciting field that often involves the use of biomaterials such as hydrogels to repair damaged tissue. Come learn more about hydrogels and regenerative medicine!

Rocket Candyland — Outer Space, Future-Oriented, Physics
Illinois Space Society
At this exhibit, students will be able to see the technology that goes into designing a solid rocket motor, as well as cast their own solid "propellant" using pancake batter! Additionally, students will learn how Alka-Seltzer reactions relate to rocket fuel.

Rotational Protection System for Bicycle Helmets — Biology, Mechanics, Design Team
BMES
The hidden engineering inside a bicycle helmet.

Self-Playing Electric Bass
Individual
Come watch and listen to our self-playing electric bass! Give our project a song or a tune and it will synthesize some lo-fi beats and play them on the bass. Our project uses raspberry pi, an ML synthesizer and motor rails to play the bass.

Electronics
Art & Design
Robotics

Smart Robotic Car
Alpha Omega Epsilon
Alpha Omega Epsilon presents a smart robot car where kids and teens can get introduced to coding and robotics and get hands-on experience on testing the various functions of the robot! Come to the booth to create your very own slime or take home bath bombs!

Robotics
Kid-Friendly
Cars

Strawberry DNA Extraction
BMES
Cells are the basic form of life and make up all plants, animals, and bacteria. DNA is the instruction booklet that controls and directs everything that happens within a cell and, ultimately, the body. This exhibit demonstrates how DNA can be extracted from strawberries using common household items.

DNA
Kid-Friendly
BIology

The Technology Behind VR and AR
VR Club at UIUC
Virtual and augmented reality is powering our future. With applications in gaming, productivity, fitness, academia, and so much more, these headsets are only getting thinner, lighter, cheaper, and more powerful. Stop by to play some fun VR multiplayer games and learn about the interactive technology that powers these devices.

Virtual Reality
Future-Oriented
Interactive
Technology

WiCyS
Women in Cybersecurity
There's something suspicious going on in the campus dining halls lately, and you're on a mission to find out what. Hidden files, fake ids, and missing packages? Embark on a late-night cybersecurity adventure to get to the root of the problem, and protect your data before it is too late...

Cybersecurity
Good for older students
Kid-Friendly

Working towards Open Access Insulin Production
Biomedical Engineering Society
With the skyrocketing costs of Insulin, scientists have been working tirelessly on open access insulin production methods. This exhibit is not only a showcase of their efforts against the terrifying problem, but includes our only contribution - an attempt to use metabolic engineering to increase the insulin yield of P. Pastoris.

Health & Medicine
BIology
Future-Oriented

Fluid Mechanics 101
Physics
International Water Resources Association
Water
Here, at the Hydrosystems lab, water is what we are all about. But sometimes, we have to go back to the basics. Come to this exhibit to explore the fundamental properties of fluids and how they flow through simple experiments.
Mechanics

Fluidized Sand
Geology
International Water Resources Association
Construction
We can walk on sand, but we can't walk on water. Sand is a solid then, right? Engineers think that way, since they put our buildings on top of it. However, in some weird cases, sand can behave like a fluid, bringing destruction to all kinds of things engineers build.
Kid-Friendly

Groundwater Flow Model
Water
International Water Resources Association
Environment
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. We explore flow patterns, the travel of pollutants, and how human interaction affects all of it.
Kid-Friendly

Hazards of Modern Spillways
Water
International Water Resources Association
Infrastructure
Spillways are an essential part of dams. During big storm events, they move enormous amounts of water over dams in a controlled way. But these structures, created to keep us safe, can sometimes become dangerous. Do you know why?
Weather

Hydrology Sandbox
Water
International Water Resources Association
Environment
This educational sandbox + flow table model is all about how the shape of the land influences hydrological processes. We can design a sandy landscape to increase or decrease surface runoff, ponding areas, and infiltration rates to recharge the underlying aquifers.
Kid-Friendly

Keeping our rivers green
Water
International Water Resources Association
Environment
To keep our rivers green, we will be dyeing them green! We will inject a small amount of dye in our Boneyard Creek to learn how pollutants travel in rivers. With this knowledge we can avoid the risks that pollution brings to our rivers.
Kid-Friendly

Little big river
Water
International Water Resources Association
Environment
Real rivers are wavy. Our unique meandering flume will allow you to explore the hydrodynamics of big rivers. We will find out about the impact of river bends in human activities, from how we navigate through them to how sedimentation and erosion affects our structures.
Geology

Protecting our coasts from waves
Water
International Water Resources Association
Environment
At beaches around the world, waves and sand are at constant battle. Sand stops the advance of waves, but waves take grains of sand back from the beach. In this exhibit, we see how eco-engineering can help us solve problems that come when we get ourselves mixed in this war.
Geology

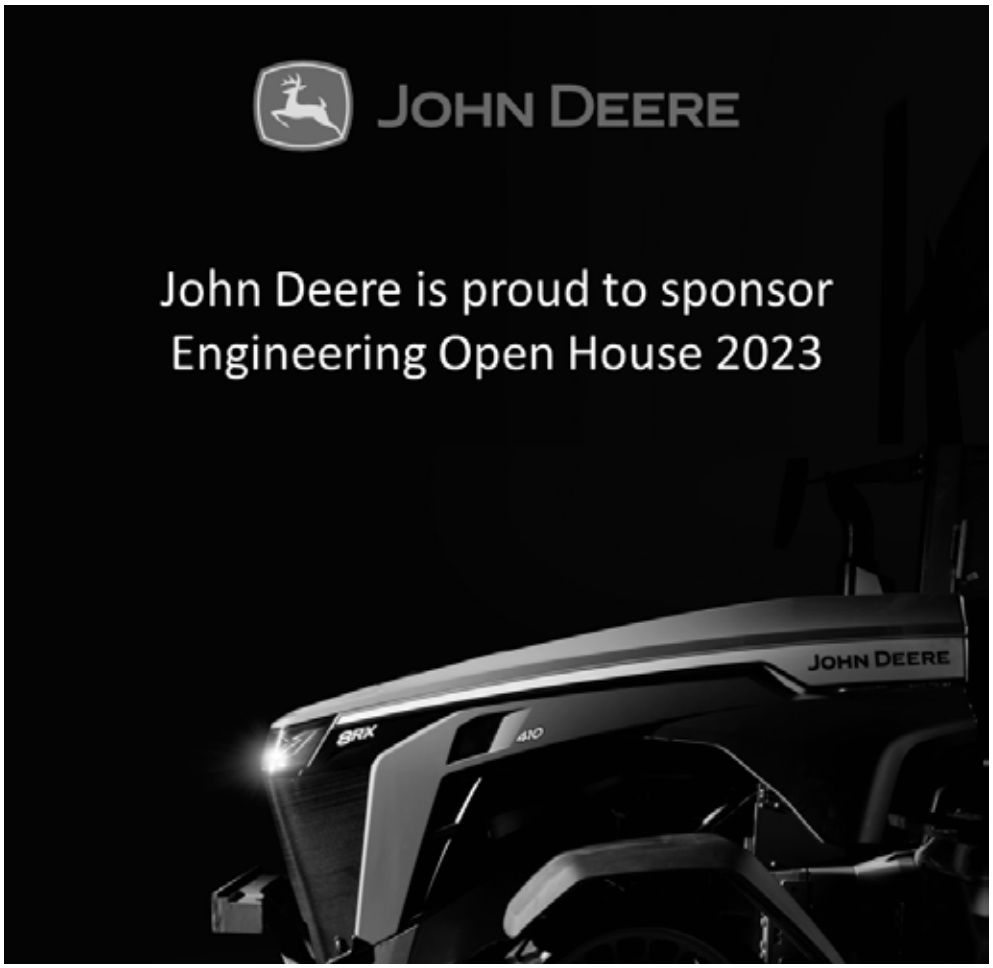
Sedimiment flume
Water
International Water Resources Association
Construction
The bed and banks of rivers are not fixed. Erosion and sedimentation processes are constantly changing their shape. They have impacts on natural processes and manmade structures. This small-scale model shows how these processes happen and allows us to see how structures interact with them.
Geology

The shape of our rivers and coasts
International Water Resources Association
We know the shape of the land tells water where it should go. But water also moves land around. This interaction forms the Earth' everchanging landscape. Our stream table shows how waves and rivers move through land and how they also can change the land.

Water
Environment
Sustainable

Tunnel and Reservoir Plan Scale Model
International Water Resources Association
Chicago sewers still carry both sanitary and stormwater flows (combined sewers). Big storms may overload the drainage system, causing basements, streets and lower building levels to flood. TARP is a system of tunnels and reservoirs where excess water is stored to regulate the inflows of sewage to water treatment plants.

Water
Sustainable
Weather



LOOMIS LABORATORY

Algae Formula 1 — Bio-Fuel, Chemistry, Cars
Alpha Chi Sigma/LCL
Have you wondered about the future of cars, and the way new fuels will impact our lives? By the way, it's not electric. Here today we are presenting an exciting new algae-based biofuel that will one day make its way into Formula 1.

Food Physics with SWIP — Physics, Kid-Friendly, Food
Society of Women in Physics
The only difference between playing with your food and science is writing your results down! Society of Women in Physics is going to teach you the physics behind your food doing strange, new things you wouldn't see at the dinner table.

Marvelous Magnets - Illinois MRSEC — Physics, Kid-Friendly, Good for older students
Illinois Materials Research Science and Engineering Center
Magnetic marvels - the invisible forces that make much of our daily lives possible

Phononic Sonic Crystal - Frequency Band gap Experience — Physics, Music, Mechanics
Wave Propagation and Metamaterials Lab
Can an array of wooden rods prevent certain musical tones from passing through it? Come listen for the band gap in a "Phononic Sonic Crystal" and decide for yourself as you learn the physics of wave propagation that lead to this phenomenon!

Society of Physics Students — Physics, Kid-Friendly, Light
Society for Physics Students
The Society for Physics Students is showing off our awesome physics demos! Come see cool demonstrations using electricity, magnetism, lasers, gravity-defying chains, and more! Learn about the physics of the world around you in an exciting new way! We hope to see you here!

Quantum Information Science Games — Quantum, Physics, Kid-Friendly
Illinois Quantum Information Science and Technology Center
Come play quantum games and expand your quantum knowledge. Experience first-hand through online gaming the exciting world of Quantum Information Science! This opportunity is brought to you by the NSF National Q-12 Partnership and the Illinois Quantum Information Science and Technology Center.

Wonders of Quantum Physics — Quantum, Physics, Good for older students
HQAN
Quantum physics is all around us- you just have to know where to look! Experience the Wonders of Quantum Physics with fascinating demonstrations and hands-on activities, brought to you by the NSF Quantum Leap Challenge Institute HQAN and the Illinois Quantum Information Science and Technology Center.

NORTH QUAD

Baking Soda and Vinegar — Physics, Rockets, Chemistry
THRUST
My club, THRUST, will be exploring the basics of aerodynamics by rockets powered by baking soda and vinegar. We will first explore this reaction and how it creates the necessary force to lift the rocket off. After that we will allow the participants to customize their own baking soda and vinegar rockets by allowing them to choose from a myriad of bottles, nose cones and fins.

Trebuchet — Design Team, Design Team, Mechanics
Pi Tau Sigma
Inspired by the medieval ages, this is a wooden trebuchet that is able to shoot projectiles (kickballs) faster than the traditional trebuchet. It's power by a crank that rotates a shaft and the launching arm. While one cranks, another person can load a projectile.

ACRL Multirotor Team — Robotics
Advanced Controls Research Laboratory — Smart Technology Research
This exhibit shows the latest aerial robotics platform developed in the ACRL Multirotor team.

BCI R/C Car — Programming
Illini VEX Robotics — Health & Medicine; Smart Technology
This year, IVR has explored Brain-Computer Interface (BCI) technology to build an R/C Car that can be controlled with our minds! By leveraging machine learning algorithms & the Neurosity Crown headset, we can now detect small actions and changes in the user's face to fully control our testing car.

Da Vinci Drawing Machine — Mechanics
Society for Engineering Mechanics — Art & Design; Equations of Motion
This interactive exhibit features a robot arm that can draw pictures. What makes this robot different from others is that this one is entirely mechanical, and it does not use any electronics! Learn about mechanical motion and the design process in this exhibit.

Engineers in Action Bridge Program — Construction
Engineers in Action Bridge Program — Future-Oriented; Kid-Friendly
The UIUC Engineers in Action Bridge Program is a student chapter of the Engineers in Action Bridge Program, a non-profit organization that designs and constructs footbridges over impassable rivers. We work alongside rural communities worldwide to strive for a world with equal opportunity and resources!

Exploring New Frontiers with SWE — Mechanics
SWE Illinois — Kid-Friendly; Outer Space
Explore new frontiers with SWE! Your mission, should you choose to accept it, is to travel by rocket to Mars, build your colony, and explore the terrain! We will be joined by Team Tech, giving a presentation sponsored by John Deere.

Gear Exposition Exhibit — Mechanics
American Society of Mechanical Engineers — Kid-Friendly; Cars
Gears, gears and more gears! At this exhibit you will have the opportunity to learn about various gear mechanisms used in everyday life such as mechanical clocks, bikes, cars, airplanes, etc. Visitors will get hands-on experience via dynamic 3D-printed models of the different mechanisms.

Happy Trains/Train Puzzle — Trains
AREMA Student Chapter — Kid-Friendly; Sustainable
Come learn what each type of railcar carries!

Hydro Grow — Agriculture
Illini Urban Farmers — Sustainable Environment
Illini Urban Farmers is proud to present a hydroponic display that can grow crops year-round! You can also build your very own mini microgreen kit to take home with you. It's a great hands-on experience of the future of sustainable agriculture!

Intermodal Game — Trains
AREMA Student Chapter — Kid-Friendly; Boats
Come learn about how containers move across the country!

iRobotics - Competition Robot Showcase — Robotics
iRobotics — Electronics; Mechanics
Showcasing robots that compete in several national and international robotics competitions! Come learn what mechanical, electrical, and software skills go into building competitive robots in this interactive display!

KIMLAB (Kinetic Intelligent Machine LAB) Robot Demo — Robotics
KIMLAB (Kinetic Intelligent Machine LAB) — Research; Smart Technology
TBD (KIMLAB will run a series of robot demos as we did.)

King Booleans
Women in Computer Sciencev
Programming
Future-Oriented
Fashion
We are looking to create either a web or mobile app that serves as a digital closet. It will store information about individual pieces of clothing within a user's closet such as color, type, material, design, etc. It can generate outfits for the user or the user can manually put clothes together and it will determine if it's a fit or a miss.

Liquefaction Tank
Geotechnical Engineering Student Organization (GESO)
Construction
Geology
Physics
Demonstrate performance of small scale mechanically stabilized earth wall build with paper reinforcement and sand under static and impact loading. Demonstrate liquefaction behavior of saturated sand subjected to dynamic loading. Present posters on the research efforts by the geotechnical department.

Magical Chladni Plate
ASME
Art & Design
Kid-Friendly
Physics
Come see incredible salt formations created by the music of your choice. This exciting Chladni exhibit will have speakers playing songs that will cause salt to form itself into cool shapes due to the resonant frequencies of a metal plate.

Melodic Eyes
ACM SIGCHI (Association for Computing Machinery, Special Interest Group on Computer-Human Interaction)
Programming
Art & Design
Smart
Technology
Experience art and music in a whole new way! With 'Melodic Eyes', you can look at historic art pieces in a completely new light - or should we say, sound. Using an eye tracker and an image-to-music algorithm, you control the music in this modern art exhibit!

Ocean Exploration!
R.E.A.C.T. Program
Environment
Chemistry
BIology
Dive in and explore the chemistry going on in our oceans! Come stop by and take a trip under the sea with R.E.A.C.T. to learn all about oil spills, glow in the dark creatures, and more!

Programming puzzles
Women in Computer Science
Programming
Kid-Friendly
Good for older students
Build a website which would contain programming puzzle games (an example, Tower of Hanoi)

Rube Goldberg Society
Rube Goldberg Society
Kid-Friendly
Mechanics
Outer Space
UIUC's Rube Goldberg Society's large sci-fi themed Rube Goldberg machine tells the story of some fruity aliens. Taking inspiration from the popular Rube Goldberg comics, the society creates one new giant machine of chain reactions every year to complete one simple task. Watch their machine run every half hour.

ScribeAR: Augmented-Reality Captioning
ScribeAR
Programming
Smart
Technology
Accessibility
Come and try out ScribeAR, a cutting-edge augmented-reality platform for real-time captioning! By combining advanced speech-to-text and sound visualization tools with the latest in augmented-reality headsets, ScribeAR is rethinking what accessible captioning looks like. Learn how ScribeAR is improving communication access, from classrooms to coffee shops.

She-Hulk, Smash!
Women in Mechanical Science and Engineering
Mechanics
Physics
Kid-Friendly
Come test your strength! See for yourself how the power of pulleys can make you as strong as She-Hulk! Our revolutionary compound pulley system allows you to lift yourself off the ground as if you were a fraction of your weight.

Soft Robotics
ASME
Come and see soft robotics in action! Use our claw to pick up and move objects around the table. We will also have another soft gripper you can manually actuate to understand how it differs from traditional robotics.

Robotics
Mechanics
Electronics

TAM Toys
SEM
TAM Toys: Come check out our interactive exhibits. Take a spin on our angular rotation and momentum demo, try and get the same motion twice out of our chaos pendulum, and power our real life differential.

Mechanics
Cars
Kid-Friendly

The Rheology Zoo
Ewoldt Research Group
We demonstrate simple and complex materials (water, sand, therapy putty, polyethylene oxide solution) to show different rheological phenomena, like how these materials under different conditions can behave like a solid or a liquid, and see these phenomena in daily life products such as toothpaste, hand sanitizer, chocolate, ketchup, etc.

Physics
Kid-Friendly
Mechanics

Thetau Waves
Kappa Theta Tau Professional Engineering Fraternity
Create art with your mind! Unlock your creative potential by using our custom-built EEG to generate art with your brainwaves, powered by AI image generation technology. Paint unique masterpieces with every thought, and see the impact your mood makes on the result.

Art & Design
Future-Oriented
Electronics

Women in MechSE: Impact Through Research
Mechanical Science and Engineering
For many decades, MechSE has made an impact on the world through fundamental contributions to mechanical engineering. Talented women in our department are fueling the field of engineering with a wide array of research and innovations that impact society every day.

Mechanics
Robotics
Kid-Friendly

OBSERVATORY

Spectacular Solar Observing
University of Illinois Astronomical Society
Get a chance to look at our blazing Sun through U of I's 125-year-old Dome Telescope! Along with solar observing, learn more about how our Sun provides the energy for all life on Earth! Finally, explore the chemical composition of different materials using a spectroscope. All right at the Observatory!

Outer Space
Light
Kid-Friendly

SIEBEL CENTER FOR COMPUTER SCIENCE

Escape ACM!
Association of Computing Machinery (ACM)
Try your best to escape from ACM! We will turn all three of our rooms in the Siebel Center for Computer Science into a multi-puzzle, multi-room escape experience where groups of individuals can get "locked in" and try their best to solve the riddles necessary to escape our lounge!

Good for older students
Fun!
Programming

EXHIBITS MATERIALS SCIENCE AND ENGINEERING BUILDING: MSEB

Foot Lightning — Electronics, Molecular Scale, Smart Technology
MSE 183
Come visit our exhibit to learn about Materials Science and power a lightning bolt with the power of your steps!

Musical Materials — Music, Kid-Friendly, Art & Design
MSE 183
Interested in learning more about why certain materials are used for instruments and the importance of choosing the right materials? Feel free to interact with our "homemade" xylophones and learn more about the acoustic properties of the materials around us.

Oobleck — Kid-Friendly, Chemistry, Mechanics
Keramos
Have you ever seen a mixture that acts both like a solid and a liquid? Named after a Dr. Sues book, Oobleck acts like it's straight from a children's book. Come play with Oobleck to learn how non-Newtonian fluids change viscosity with a change in the force applied to them!

Solar Baking! — Food, Sustainable, Chemistry
Material Advantage
Come grab some delicious treats and learn about the wonders of sustainable energy. See how solar oven works and check out our live baking sessions!

Sweet Science — Food, Kid-Friendly, Mechanics
MSE 183
Ever wondered why some candies snap while other candies stretch? Visit Sweet Science to learn about material properties and experiment what happens to candy under extreme conditions.

The Mystery of the Floating Train — Physics, Trains, Smart Technology
MSE 183
Have you ever seen a floating train and are curious about how it works? Come build your own floating train by designing a magnet path by yourself. Observe how superconductors levitate on the path and explore the principles behind it!

The Science Behind Marshmallows — Physics, Molecular Scale, Food
Material Advantage
Come learn about the extraordinary science behind marshmallows! You will discover how marshmallows are made and what is so unique about their structure. In addition, we will simulate what happens to a marshmallow in space!

The Thermoelectric Effect — Smart Technology, Chemistry, Electronics
Materials Advantage
A demonstration of the thermoelectric effect, also known as the seebeck and peltier effects. See how temperature can be measured, how to power something with body heat, and more!

Thermochromic Paint — Thermochromism, Chemistry, Kid-Friendly
MSE 183
Witness thermochromism, the ability of a material to change colors with changes in temperature. Just the body temperature from your hands will be able to affect the color of these materials. Also get the chance to paint something with color changing paint.

Water You Afraid Of? — Molecular Scale, Future-Oriented, Kid-Friendly
MSE 183
We've always learnt that water is shapeless, so how about we make shapes out of it today? Make your favorite 2-D shapes out of water and solve water droplet mazes while exploring and learning about an interesting property called hydrophobicity!

AVUSL-Ground Vehicle Team — Robotics
AUVSL — Research
This exhibition will introduce the variety of applications of unmanned ground vehicles in agriculture and construction. The booth will exhibit different sizes of ground vehicle platforms statically and actively. Maybe some lucky visitors can try to operate those big remote-control vehicles in our booth. — Agriculture

Demo of IRIS-made Lunar Rover — Robotics
Illinois Robotics in Space — Design Team
Illinois Robotics in Space is an organization at UIUC that participates in NASA's annual Robotic Mining Competition. IRIS will be Our IRIS XIII fully autonomous robot we built this year will demonstrate the functionality of the robot. Our robot will demo how it can pick up sand, simulating space environment. — Outer Space

Department of Atmospheric Sciences — Weather
Department of Atmospheric Sciences — Data Science
Do you want to understand the power of mother nature? If so, come visit our exhibit to get experience with cloud identification, how atmospheric measurements are taken, and make tiny tornadoes! — Kid-Friendly

Eco Illini Supermileage — Design Team
Eco Illini Supermileage — Cars
Showcasing our high efficiency gas and electric vehicles — Sustainable

Illini Formula Electric — Design Team
Illini Formula Electric — Cars
Illini Formula Electric (IFE) is the University of Illinois Urbana-Champaign's electric Formula SAE team. We design, build, and race electric formula cars. This Year IFE is Presenting our 4-wheel drive race-car which we created for our yearly competition. — Sustainable

Illini Motorsports — Cars
Illini Motorsports — Design Team
Students on the Illini Motorsports racing team work hard to develop a competitive race car every single year. Come by our exhibit to view our championship winning 2022 car, view and interact with interesting parts from past vehicles, and see the brand new car during its testing and development phase. — Mechanics

Illini Pullers — Design Team
Illini Pullers — Mechanics
The Illini Pullers are an engineering design club competing in the ASABE International Quarter Scale Tractor design competition. Every year we are given a set of tires and a 31 Horsepower engine and tasked with designing and building a powerful pulling tractor from the ground up. — Cars

Illini Solar Car — Sustainable
Illini Solar Car — Design Team
The Illini Solar Car team harnesses the skills of a diverse group of students in engineering and non-engineering fields in pursuit of creating the world's best solar electric vehicle. Through hands-on, interdisciplinary work that fosters real-world applications, we spark sustainable thinking by designing and building a road-legal car to compete in international competitions. — Cars

Incredible Iron — Good for older students
MSE 183 — Mechanics
Witness sparks fly as we perform the Grind Test, and bend different samples of steel to see the physical differences between them. Also, we'll also be doing live knife sharpening to show how flawlessly knives really cut! Come on down and witness it all here! — Physics

Off-Road Illini Baja SAE — Cars
Off-Road Illini Baja-SAE — Mechanics
UIUC's Off-Road Illini car team that designs, builds, and competes an off-road vehicle! — Design Team

National Center for Supercomputing Applications (NCSA)
NCSA
At NCSA, our advanced cyberinfrastructure and expertise provide a hub for transdisciplinary research that unites academic institutions and global companies in search of the answers to the world's most challenging problems and help us meet the needs of future generations.

Research
Cutting-edge
Kid-Friendly

AI Teaching Assistant for Engineering Courses
Center for AI Innovation, NCSA
Tired of doing your own homework? AI can help with that! We're better than Google at answering engineering questions because we *generate* custom, highly detailed, responses to any question you ask.

Data Science
Programming
Future-Oriented

AI, Extreme Scale Computing and Scientific Visualization for Gravitational Wave Astrophysics
NCSA Gravity Group
Visit our exhibit and learn how students are developing world class artificial intelligence solutions to study the universe through the observation of gravitational waves produced by the collision of black holes. Play black hole ping pong and take a selfie where you see yourself embedded in a black hole. It will be an out of the world experience!!

Physics
Data Science
Kid-Friendly

4K 3D Theater Demo of Scientific Data Visualizations
Advanced Visualization Lab
Come see 3D scientific data visualizations created in a Hollywood movie style. These visualizations have been included in IMAX films, museums, and TV documentaries. We will show a variety of visualizations including galaxies, tornadoes, molecular structures, and more.

Data Science
Outer Space
Design Team

"Atlas of a Changing Earth" documentary screening
Advanced Visualization Lab
Plays every 30 minutes, last screening at 3 pm
"Atlas of a Changing Earth" is a documentary co-produced by NCSA about the dynamic processes causing coastal glaciers to melt. It's the story of how a revolution in the making of maps is shedding new light on our planet's evolution in the wake of rising global temperatures.

Data Science
Environment
Design Team

Data Analytics Group at NCSA
NCSA
Using Data Analytics to explore exciting research topics and industry projects across many fields. This includes exploring the targeting methods for refugees in humanitarianism programs, pre-processing geospatial data for Deep Learning models, developing a more user-friendly Machine Learning Framework, and so on.

Data Science
Programming
Research

NCSA Genomics Presents: The Fascinating World of Genetics
NCSA
We will be displaying and discussing various ways genetics influence life, from looking at strands of actual DNA, to running computer simulations of genetic mutations and even learning how computers can help us assemble tiny fragments of DNA into a complete genome.

DNA
Data Science
Programming

NCSA Students Pushing Innovation Internship Program
NCSA Research and Education
The National Center for Supercomputing Applications (NCSA) has a rich history of nurturing innovative concepts, and some of the best ideas have come from highly motivated, creative undergraduates. NCSA launched the Students Pushing INnovation (SPIN) internship program in 2012. Our program's mission is to provide University of Illinois undergraduates the opportunity to apply and develop skills that address real challenges aligned with their interests. SPIN interns work on research projects involving high-performance computing, data analysis and visualization, cybersecurity, and other areas of interest to NCSA. Want to know more about SPIN projects? Join us for in-person demos and meet outstanding SPIN interns who make this program a success!

Research
Cutting-age
Programming

A journey to the dynamic Earth's interior — Geology, Physics, Environment
Geodynamics (Liu's) Lab
Ever wondered how the deep part of the Earth works? Does it look the same millions of years ago? Let us bring you to the deep time and deep depth of Earth through a virtual tour! Have a sip of how the "deep" Earth shape our home today.

Care for the Air — Environment, Research, Kid-Friendly
American Association for Aerosol Research (AAAR@UIUC)
We will show air pollution research in an accessible way. Visitors could see the mini smog in a jar, air quality sensor, and way to "catch" them

Detecting Arctic Change with Drones — Environment, Research, Kid-Friendly
The Lara Spatial Ecology Lab
Come experience how researchers use drones to see how permafrost melt is changing the Arctic landscape, where you can view yourself as LiDAR data points and witness a block of permafrost melt in real time!

Dynamic Sandbox! — Kid-Friendly, Environment, Good for older students
Surface Processes Lab/Geology Department
Come make mountains in our sandbox and watch how our projected topography changes!

Frontiers of Geospatial Data Science — Environment, Research, Data Science
Dept of Geography and Geographic Information Science, Health Regions & Policies Lab
What is geospatial data science, and how is it shaping our future? Play a Geoguesser game and learn how AI could help. Add your pandemic story to a living Atlas. Map an index to plant trees for social justice. Learn how researchers are extending computer science with geography and spatial thinking.

Geology in Space! — Kid-Friendly, Outer Space, Geology
Earth Science Research
In the 50 years since the Apollo missions captured the imagination of the world our exploration of the solar system has exploded! Come play with our 'space-time' simulator to see how the solar system formed, learn how the exploration of the moon helped us understand the formation of the Earth, and see how our rovers on Mars are helping detect Mars quakes and unlock the secrets of its past.

Integrated Assessment of Climate Change — Research, Agriculture, Environment
Atmospheric Sciences
The exhibit would represent the impact of changes in the land use land cover on fluxes associated with the atmosphere and the feedback effect of the atmosphere on managed and unmanaged ecosystems.

Radioactive Decay and Geology — Chemistry, Geology, Research
Helium Analysis Laboratory--Guenthner Research Group
Have you ever wondered how we know how old rocks are? Come learn about how we use lasers and radioactive decay to date rocks! You can also take a look at our cloud chamber to see radioactive decay in real time!

Rocks & Minerals — Kid-Friendly, Geology, Outer Space
Department of Geology
Come and explore Earth's wonders! Engage with a hands-on display of rocks and minerals, including meteorites, fossils, huge crystals, and volcanic rocks!

Stream Table and the California Gold Rush — Kid-Friendly
Fluvial Geomorphology — Good for older students
Want to know more about river systems or how to search for gold in a river? Stop by our exhibit to learn how and why alluvial rivers change shape over time and how prospectors use to search for gold in rivers! Visitors will be able to interact with our physical model of a river system and sieve for gold. If you find the specially marked "gold" piece(s), you will be able to choose a small prize from our prize box! — Water

The Power of Clean Water — Environment
Tom Johnson Lab — Water
See how water, the most important resource for life, goes from dirty to clean using a powder with a flocculant in it. — Kid-Friendly

Under the Lights: At a Nano Scale — Geology
Craig Lundstrom Lab — Good for older students
Let's explore the world at the nano scale. We will be looking at fossils and volcanic rocks under the Scanning Electron Microscope. — Environment

Watching Sedimentary Rocks Form — Kid-Friendly
Surface Processes Lab — Geology
Visit our thin flume, make ripples in the sand, and learn about how these features become rocks! — Environment

NEWMARK CIVIL ENGINEERING LABORATORY

American Concrete Institute - UIUC Student Chapter — Construction
American Concrete Institute — Sustainable
You will know about the construction and civil engineering through our organization. You will have the chance to enjoy making your coaster gift by mixing a fast-hardening cement in a zip bag. You will also have the chance to know a little about forensic engineering by using a non-destructive instrument. — Infrastructure engineering

American Society of Civil Engineers — Construction
American Society of Civil Engineers — Physics
Did you know that some of the tallest skyscrapers in the world had Illini on their design team? Test your construction skills and build a gravity-defying tower made out of marshmallows! Then, test your structural engineering skills in a game of giant Jenga. — Design

CN Railway Dispatching Display — Trains
AREMA Student Chapter — Good for older students
Come learn about how a Class 1 Railroad dispatches their trains! — Sustainable

Grade Crossing Prediction and Warning Devices — Trains
AREMA Student Chapter — Electronics
Come learn about highway-rail crossing warning devices! — Good for older students

JR Central Maglev Display — Trains
AREMA Student Chapter — Sustainable
Come learn about how a Japanese Superconducting Maglev train works! — Future-Oriented

Train Simulator — Trains
AREMA Student Chapter — Kid-Friendly
Come find out what it is like to drive a train locomotive around the country! — Sustainable

Train Switching and Sorting — Trains
AREMA Student Chapter / Illini Railroad Club — Good for older students
Come learn how railcars are sorted and switched into trains! — Models

TALBOT LABORATORY

Explore Nuclear Science with American Nuclear Society!
American Nuclear Society
Interactive projects exploring everything nuclear!

Physics
Environment
Sustainable

Explore Nuclear Science with WIN!
Women In Nuclear
Interactive projects exploring everything nuclear!

Environment
Physics
Kid-Friendly

WIA Rockets and Gliders
Women in Aerospace
Explore the skies with WIA! Design, build, and launch your own rockets and gliders, or stop by our wind tunnel demo in Talbot Lab to see how planes fly!

Outer Space
Planes
Good for older students

TRANSPORTATION BUILDING

AUVSL-Drone Team
AUVSL
The exhibition is about the application of drones in terrain mapping and characterization. The booth will show the various type of drones and the sensors on the self-made payload.

Robotics
Research
Construction

AUVSL-Underwater Vehicle Team
AUVSL
The exhibition is about the simulation of an underwater vehicle for pipeline inspection. The simulated underwater vehicle, underwater environment, and vehicle control mechanism will be shown in a demo video.

Robotics
Research
Water

Egg Drop Competition
Institute of Industrial and Systems Engineers
Interested in finding the most efficient way to design and create something with limited resources? Come join us and build a contraption to help an egg survive a two-story drop off the Transportation building using the least amount of materials!

Art & Design
Design Team
Kid-Friendly

Senior Design Storyboards
Industrial and Enterprise Systems Engineering
Our Industrial and Systems Engineering Design students will showcase their yearlong senior design projects. Senior design students developed solutions to real-world engineering problems provided by industry-partnering companies, subject to realistic constraints and supported by economic analyses and recommendations for implementation.

Art & Design
Design Team
Good for older students

Supply Chain Maze
Institute of Industrial and Systems Engineers
Join us to try to figure out the most efficient path through a supply chain maze to win the most amount of prizes! Also, be sure to stop by to check out some 3D modeled projects and designs from CAD!

Kid-Friendly
Design Team
Art & Design

EOH THROUGH THE YEARS

For over 100 years, Engineering Open House has been a place to showcase innovation where students from every discipline of engineering can highlight the cutting-edge technology they get to work on every day.

The first open house at the University of Illinois Urbana-Champaign began in 1906 with only the physics department, with the electrical engineering and mechanical engineering departments starting their own annual showcases in 1907 and 1914 respectively. EOH then premiered in 1920 with 60 exhibits, designed to combine individual department events across the Grainger College of Engineering. Although EOH was put on hiatus during World War I, it became an annual event featuring hundreds of exhibits in 1952. Many of the events featured during that time, such as the concrete crusher, continue to be fan favorites today. In the past 50 years, EOH attendance has nearly doubled, with over 50,000 visitors and students from 600+ high schools across the Midwest.

1918. The humble beginnings of Engineering showcases.

1955. Engineering students inspect a 120,000 pound testing machine.

1956. Concrete cyclinder “Fran” bursts under 1,660,000 pounds of force.

1959. Attendees gather around a turbojet engine at the Transporation Building

EOH CENTRAL COMMITTEE

Mary Ehmann
Co-Director
Chemical Engineering
Senior

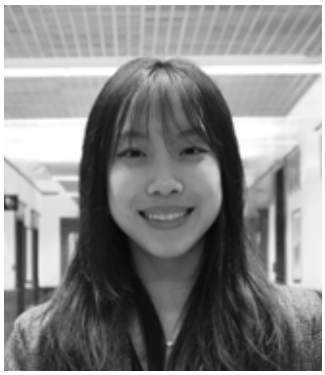
Riccelo Guidorizzi
Co-Director
Industrial Engineering
Senior

Rohini Ramesh
Director of Exhibits
Aerospace Engineering
Junior

Paymon Sadat
Director of Facilities and Equipment
Bioengineering
Junior

Bhavika Kagathi
Special Events Director
Bioengineering
Masters

Kavya Sudhir
Special Events Director
Bioengineering
Senior



Alyssa Huang
Secretary/Treasurer
Electrical Engineering
Sophomore

Ramya Gandhi
Startup Showcase Director
Systems Engineering and Design
Senior

Oviyan Rathi
HSDC Director
Industrial Engineering
Sophomore

Elizabeth Farah
MSDC Director
Industrial Engineering
Sophomore

Saagar Kolachina
Director of Robotics
Material Science and Engineering
Junior

Shivaditya Gohil
Community Outreach Director
Computer Engineering
Sophomore

EOH CENTRAL COMMITTEE

Victoria Kindratenko
Community Outreach Director
Bioengineering
Senior

Nikita Pawar
Director of Advancements
Mechanical Engineering
Junior

Kiran Kaur
Director of Hospitality
Industrial Engineering
Junior

Jasmine Varghese
Director of Judging and Awards
Bioengineering
Senior

Anushka Desai
External Marketing Director
Bioengineering
Senior

Arya Haria
Junior External Marketing Director
Mechanical Engineering
Sophomore

Rachel Huang
Director of Visitor Information
Computer Science
Sophomore

Shivani Ramesh
Senior Corporate Director
Civil and Environmental Engineering
Senior

Alice Getmanchuk
Director of Technology
Computer Engineering
Senior

Nakul Iyer
Director of Technology
Computer Science
Junior

Clara Lynk
Director of Creative
Bioengineering
Senior

Abbie Kim
Junior Corporate Director
Chemical Engineering
Junior

EOH CENTRAL COMMITTEE

Anushri Mittal
Junior Corporate Director
Computer Science
Sophomore

Dylan Hsu
Junior Corporate Director
Material Science and Engineering
Senior

#BIOH23

Beckman Institute

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OPEN HOUSE 2023

Barrier-busting, interdisciplinary science.

MARCH 31 & APRIL 1

9 a.m. to 4 p.m. 9 a.m. to 3 p.m.

Encounter insects up close with Bugscope.
Explore the magic of MRI.
Extract DNA from strawberries.
Engage with molecules in virtual reality.

Learn about 3D-printing with chocolate.
See how scientists create greener plastics.
Look inside bones and the brain.
Test your emotions with a lie detector.

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