2017 EVENT PROGRAM

EXHIBITS SORTED BY PROGRAM

AERONAUTICS & ASTRONAUTICS

- Aircraft Icing - Investigate the impact of ice on wing performance using 3D printed models. Friday only.
- Computational Plasma Dynamics Lab - Learn how computers are used to help solve real-world problems in plasma physics.
- Design Build Fly @ UW - Learn how RC planes are designed and built for the AIAA competition. Friday only.
- Drones & Unmanned Aerial Systems - Examine and interact with unmanned aerial systems (drones), including simulation, hardware, and flight simulators. Friday only.
- Fusion Z-Pinch Experiment (FuZE) - Learn about compressing million degree Fahrenheit gas to achieve nuclear fusion conditions. See a live demonstration of the power of magnetic fields.
- Future of Composite Structures - We show various prototypes of fiber reinforced composite structures. Friday only.
- Ram Accelerator Impulsive Space Launcher - The ram accelerator apparatus fires jet engines through a tube to reach hypersonic velocities. Tours every 1/2 hour.
- Rotating Detonation Engine - We are developing an advanced rocket engine that utilizes rotating detonation waves to pressurize the combustion chamber.
- Swimming with the Robofish - Understand the basics of swimming locomotion and see the UW robofish swim autonomously in the outdoor pool.
- The HIT-SI3 Plasma Physics Experiment - Learn about a unique magnetic confinement experiment for fusion energy.
- Water Bottle Rockets - Discover the basics of rocketry. Design, build, and launch a water bottle rocket!
- ZaP Flow Z-Pinch - From lightning, to the stars, to rocket propulsion: learn about plasma, the state of matter that makes up 99% of our visible universe! Exhibit includes a laboratory tour and demonstration.

BIOENGINEERING

All exhibits will be on Rainier Vista on Friday & Foege Hall on Saturday.
- BioE Pop-up Exhibits - Learn about microfluidic devices, their healthcare applications, and current UW microfluidics research. Friday only.
- Bioengineers Without Borders - Hear how bioengineering students are applying engineering and science to solve global health problems. Projects include an anesthesia device, accessible prosthetics, a hydration monitor, and a fork! Saturday only.
- BMES Strawberry DNA - Join UW's Biomedical Engineering Society to extract DNA from your favorite berry!
- Body in a Bag - A hands-on look at some of the awesome innovations bioengineers have developed to solve challenging biomedical problems! Come ready to ask plenty of questions.
- Build a Prosthetic - Build a model prosthetic device and learn about the factors that bioengineers consider when designing prosthetics for humans and animals.
- Discovering DNA - Ever wonder how DNA comes about and where it goes? We discuss the exciting uses of DNA once it's extracted - from sequencing, to fluorescent marking, to genome editing. All ages welcome!
- DNA Detectives - Come explore the mysterious world of DNA and learn how the Lutz Lab uses biology to detect infectious disease!
- Enzymes Delivered - Enzymes are proteins in the body that start and speed up chemical reactions. Join us for a hands-on activity demonstrating how the liver uses an enzyme to break down hydrogen peroxide! Friday only.
- Huskies ADAPT (Adaptive Design and Play Technologies) - Toys are important for how a child learns and plays. Many toys are inaccessible to children with disabilities. We adapt them with a headphone jack to make them accessible for everyone!
- Making Molecules from Bugs - Join ACES in our mission to find out how really big problems can be made smaller! Our exhibit will feature hands-on DNA extraction and other activities related to genetic engineering.
- Paper Microfluidics - Join the Yager lab to learn how we use paper to bring the clinical laboratory to people wherever they are. You can even use your cell phone to read your results!
- Playing with Ultrasound - Learn how ultrasound waves let you see inside your body! We will use an ultrasound machine to see the pulsating blood vessels under your skin. Saturday only.
- Regenerating the Heart - Learn about the heart and how we are working to help rebuild it through a video, fun activity and competition!
- UW iGEM Team - iGEM is an undergraduate competitive team that performs independent research in synthetic biology. Our exhibit will feature hands-on DNA extraction and other activities related to genetic engineering.

CHEMICAL ENGINEERING

All exhibits will be at Benson Hall

- Chemical Wizardry - Have fun writing secret messages with invisible ink and learn about the chemistry behind this and its potential applications.
- Cloud in a Bottle - Learn about phase changes and see a cloud form right in front of your eyes!
- Cooler than Ice - What happens when a racquetball is frozen solid by liquid nitrogen? Join ACES in our mission to find out how really low temperatures affect material properties!
- Ensuring a Sustainable Supply of Seafood with Human Food Waste - Senior engineering project in which our team designed and implemented a process to convert human food waste into sustainable fish feed for hatcheries and aquaculture.
- Hydrogen from Water - This demo will show how water electrolysis, the use of electricity to split water into hydrogen and oxygen, works and its potential use as a source for renewable fuels.
- Making Molecules from Bugs - Come see how we engineer microbes to solve the world's biggest problems.

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(Chemical Engineering cont.)

Paper Plate Ferrofluids - Printer ink and oil aren’t magnetic on their own, but what happens when you mix them? Come to this exhibit to play with magnets and ink – you’ll even get to take home your own magnetic masterpiece.

The Power of Polymers - Have fun playing with polymers and learn how they can absorb hundreds of times their weight in water to create fake snow!

Walk on Water - Come “walk on water” and explore the mysteries of non-Newtonian fluid behavior.

CIVIL & ENVIRONMENTAL ENGINEERING

Beyond Red Light, Green Light - Have you ever wondered how traffic lights are controlled? Come see a demonstration and learn how engineers work to solve traffic problems! Friday only.

Engineering Plants to Fight Pollution - Learn about using genetically modified plants to degrade pollutants from military live fire training ranges, home air and greenhouse gases.

Fantastic Modes and Where to Find Them - Games and puzzles allow students to consider the tradeoffs of time, money and emissions that occur when deciding how best to transport people and goods through a city.

Industrial X-ray Scanner - Engineers and scientists use x-rays to inspect the insides of specimens without destroying them. Learn the science behind this machine and scan some of your stuff!

Lock Exchange - Investigate the interactions between fresh and salt water using a small tank, salt and food colors. Friday only.

Make It and Shake It: Your Buildings, Our Earthquakes - Design and construct your own building, then test its earthquake resistance on our shake table. Can your building survive Seattle’s Big One?

Mountain Hydrology Research Group - This exhibit will explore the water resources and electromagnetic properties of snowpack common in mountainous areas.

Pacific Northwest Transportation Consortium - Transportation engineering, science and technology. Friday only.

Protecting Structures with Base Isolation - Base isolation may help significantly lower forces in buildings during earthquakes. We will demonstrate structural response with and without isolation. Saturday only.

SASWE Research Group - Learn about the application of satellites in hydrology to better manage water. Saturday only.

Tsunami Generation and Impact on Coastal Infrastructure - See a hands-on demonstration of how a tsunami is generated offshore through ground motions on the ocean floor and how these waves propagate and influence coastal communities.

Water in Distant Lands - Water is a scarce resource. See how engineers meet water challenges in different environments around the world.

Watershed Dynamics - We will exhibit a model of a watershed and demonstrate how rain enters streams. Come find out how plants, soil and glaciers play a role in this dynamic! Friday only.

Wetland Chemistry and Greenhouse Gases - Wetlands are important and unique habitats for plants and animals, but their waterlogged soils are also home to bacteria that produce lots of greenhouse gases! Friday only.

What’s in Your Drinking Water? - Students will learn how drinking water is treated and why it is important. Test tap water for chlorine and treat a small sample of raw water. Friday only.

COMPUTER SCIENCE & ENGINEERING

All exhibits will be in the CSE Atrium

Chat with a CSE Peer Advisor - Talk with CSE peer advisors about our undergraduate program! Our peer advisors are CSE seniors who can talk about courses, internships, research, and our community.

DawgBytes: A taste of CSE - Come play some games and activities and in the process learn about becoming a computer scientist.

The Allen Center from the Ground Up (and Down!) - CSE student tour guides show you what makes this world-class facility for computing education unique. Saturday only.

The UbiComp Lab - Computer science doesn't only happen on big, bulky desktop computers. Come see how the UbiComp lab uses smartphones and sensors to solve problems. Saturday only.

ELECTRICAL ENGINEERING

50 Shades of Green: Environmental Impacts of Electric Cars - Are electric cars green everywhere they go? Or are they more eco-friendly in some states than others? Join us as we explore fifty shades of green among electric cars in the United States. Saturday only.

Crowd Sensing - Learn about a platform for estimating the air quality in an urban environment. Saturday only.

Exploring Nanoscience and Molecular Engineering - Learn about work done at the MoiES Institute, Washington Nanofabrication Facility, and the Molecular Analysis Facility.

Fashioning Jewelry from Electronic Waste - Missing a pair of earrings? Looking for a brand new look for school? Need a Mother’s Day gift? In this workshop, we’ll repurpose electronic waste into custom designed, homemade earrings. Friday only. Tickets required - pick up at the EE Welcome Table in the CSE building, room AE100.

Racing with Light - Join us in learning how light plays an important role in our daily lives, from solar powered cars to holograms. Light can be used to power our devices, to see very small objects, or to color the world!

RoboMasters at UW - Come see our fighting robots!

Sensor Systems Lab - See a demonstration of wireless power transfer, wireless sensing, and personal robotics.

The Glowing Pickle - What happens to an ordinary pickle when you plug it in to an ordinary wall outlet? Don't try it at home, but we invite you to watch what happens when we try it! Tickets required - pick up at the EE Welcome Table in the CSE building, room AE100.

Video Games for Dynamic Human/Machine Interaction - People are interfacing with intelligent, robotic systems at an ever-increasing rate. Come test out a video game that will help us understand the dynamics behind human control of these systems.

HUMAN CENTERED DESIGN & ENGINEERING

Design Thinking Workshop - A hands-on workshop in designing and prototyping mobile applications. Tickets required and may be picked up at the exhibit table.

Sketches to Interactive Prototypes - Learn how to design mobile apps using simple drawings. Watch HCDE students take your sketches and turn them into interactive prototypes.
Edible Engineering: Five-Minute Ice Cream

There are many recipes out there for making your own ice cream at home, but did you know that you can make your own ice cream in five minutes using two Ziploc bags? Come find out how!

Engineearings

Learn how electrochemistry creates thin titanium dioxide films on titanium, why the transparent films look colorful, and walk away with a unique pair of titanium earrings. Friday only.

SARO Sounding Rockets

The Society for Advanced Rocket Propulsion is designing, building and launching a rocket to 30,000 feet! Come see our hardware and learn more about what makes rockets fly.

Satellite Team

The Satellite Team is developing the UW’s first satellite which will be launched in 2018. Come learn about our team’s progress and the challenges of developing a spacecraft. Saturday only.

Engineers Without Borders

Explore ways to work around obstacles with our marble wall and learn about EBW’s current projects.

SWE Presents Engineers Toy Shoppe

Join SWE as we teach you about real-world applications of engineering, how to think like engineers, build prototypes of accessible engineering products, and most importantly how you can make an impact!

(cont. on back)
Biogas Powered Food Cart Experience - Learn about the process of biogas production and see plans for our biogas powered food cart. Saturday only.

Bioresource Science & Engineering - Learn about the sustainable production of fuels, chemicals, and products from biomass. Make your own paper from different kinds of materials and test your paper’s properties.

Catapults and Codes: STEM in Antiquity - Travel back in time to the world of the ancient Romans to make your own catapult and learn how people used to send secret messages.

Engineering Batman - If Batman was real, explore the science and engineering behind many of Batman’s tools. From the Batsuit to the Batmobile, learn about the innovative technologies used by the Caped Crusader.

Making STEM Accessible - Learn how we promote science and engineering to people with disabilities and try our cool and accessible science equipment! Friday only.

Racing with the Sun - Build a solar car and race them on a track. Find out what new solar technology is emerging from UW research.

Wide World of Sound - Come see demonstrations related to underwater sounds, speech simulation in various environments and ultrasound. Friday only.

KEY:
- Engineering Building
- Non-emergency Medical
- Picnic Area
- Food Option

A. E18 Welcome Tent
B. Loew Hall Welcome Tent (Information, Lost Children)
C. Engineering Library
D. Guggenheim Hall and Lawn
E. Aerospace & Engineering Research
F. Mechanical Engineering Building
G. Electrical Engineering Building
H. Computer Science & Engineering Atrium
I. Drumheller Fountain Tent
J. Rainier Vista Tent
K. AERB Lawn Tent
L. More Hall
M. Mueller Hall and Mueller Courtyard
N. Benson Hall and Patio
O. Foege Hall
P. Maple Hall
Q. Sieg Hall

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