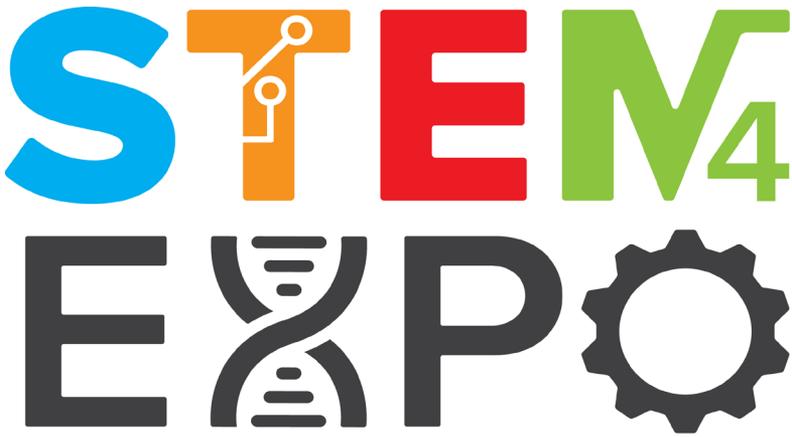

**35th Annual
DuPage Area
STEM Expo**



SCIENCE • TECHNOLOGY • ENGINEERING • MATHEMATICS

February 23, 2019
10:30am - 3:30pm

ILLINOIS INSTITUTE
OF TECHNOLOGY
School of Applied Technology

1st Floor - Atrium

Illinois Tech

1st Floor, Atrium

Visit the Illinois Tech tables for additional information and questions about this years STEM expo. Enter your entry raffle tickets for a chance at a prize! Pick-up your reserved Mr. Freeze wristbands or get added to the waitlist. While there learn more about High School Summer camps, Professional development programs, training and certificates, room rentals here on campus, and IIT courses and programs.

www.iit.edu

(IIT-SAE) IIT Society of Automotive Engineers

1st Floor, Atrium

Want to hear how a race car weighing just 575 lbs could have an acceleration of 0-60 m/s time in 3.2 seconds? Stop by and learn about electric vehicle powertrains, Lithium-ion batteries, electrical motors and transmission design. Learn how engineers take advantage of banked roads to optimize vehicle handling.

fsae.iit.edu

Help support our local Scout Troops!

Boy Scout Troop 263 – Coat and Stroller Check

Atrium/Room 126

Checking of your coats and strollers is strongly encouraged to all the STEM expo to be a more enjoyable experience for all. Donations accepted to support Boy Scout Troop 263 working the room to be able to send scouts to summer camps is highly appreciated.

Girl Scout Troop 1221 – Snack Bar

1st Floor, Atrium

Stop by and support the Girl Scout Troop 1221 raises funds to go on educational trips around the world. This year the following items will be available: All Beef Hot Dogs, freshly popped popcorn, chips, drinks and of course Girl Scout Cookies! Science Fair exhibits and fun STEM patches will also be available.

1st Floor - North Hall

(FLL) First Lego League Team RoyalTech

Room 123

Interact with FLL Robotics game table, see how to build a Lego Robot and program it to perform certain tasks, and learn how it works! Geared towards kids from 4th- 8th grade.

www.usfirst.org

(ANL) Argonne National Laboratory

North Hall

Come hang out with nuclear scientists and try your hand at using a remote manipulator to move impostor nuclear materials. Also stop over to see one of our latest inventions, the Oleo Sponge, that absorbs oil not water, is reusable and can collect oil both above and below the water surface.

www.anl.gov

(JS-NM) Jurica-Suchy Nature Museum

North Hall

Explore Life Science hands-on activities! Learn more about our FREE natural history museum that is open to the public and welcomes school groups.

www.ben.edu/museum

(ASNT) American Society of Nondestructive Testing

Room 120

Energize metallic powder, use black-lights with fluorescent material, measure sound waves with transducers and use scopes to identify defects in metal. Hands on demonstrations of Nondestructive test methods including: Magnetic Particle, Liquid Penetrant, Eddy Current, Visual and Ultrasonic inspection methods.

www.asntchicago.org

PC Technologies

Room 116

Create solar cells using household materials, assemble cells into solar panels, and use it to power electronic devices under sunlight!

www.pc-technologies.us

1st Floor - North Hall

(SWE-CRS) Society of Women

Engineers Chicago Regional Section

Room 118 & North Hall

Get ready to invent something amazing with playdough circuits! This fun activity will let students' imagination run wild while teaching them the fundamentals of completing an electrical circuit.

chicago.swe.org

(SEAOI) The Structural Engineers

Association of Illinois

Room 114 & North Hall

Uncover engineers' tools of the trade, such as amazing strength of shapes, materials, wind engineering and resiliency, through this interactive and educational program. A hands-on earthquake shake table will allow for construction of your own LEGO® Skyscraper and test it to destruction under a simulated earthquake after each lecture.

Lectures on the Half Hour in room 114, Brian Dekker presents "Last Brick Standing"

*Lego kits for the winners!

www.seaoi.org

Light & Color - Optical Society of Chicago

Room 111

Learn about light & color in everyday applications around your home, school. Stop in and work with interactive displays.

sites.google.com/site/opticalsocietyofchicago

(ACS) American Chemical Society Chicago Section

North Hall

This year come explore in a paper experiment and a spectroscopy experiment based on this year's "Chemists Celebrate Earth Week" theme "Take Note: The Chemistry of Paper" and the International Year of the Periodic Table.

www.acs.org

1st Floor - North & East Hall

(ANS) American Nuclear Society

North Hall

Hands-on demonstrations for radiation detection, a model fuel bundle for a nuclear power reactor, a worksheet to calculate your annual radiation exposure, and information about careers.

www.nuclearconnect.org

Chicago Area Robotics Group (Chibots)

Room 103

Variety of demonstrations of both autonomous and interactive robotic devices. Including: autonomous vehicle line following and maze tracking, interactive marble maze, and simulated robotic search and rescue.

www.chibots.org

(SFPE) Society of Fire Protection Engineers

Room 141 & East Hall

Learn about Fire Safety! Experience a hands-on demonstration of a modern fire detection and alarm system, and a fire extinguisher simulator unit while exploring various samples of sprinkler heads and related videos.

*Please Note: Demonstrations may be loud. Strobe lights may be used. Those susceptible to flashing lights should take necessary precautions.

www.sfpe.org

(SME) Society of Manufacturing Engineering

Room 142

Come for show and tell of what is and is NOT a manufactured product. You may just be surprised by what you find out!

www.sme.org
www.smechapter5.org

1st Floor - East Hall

(AIChE) American Institute of Chemical Engineers

1st Floor, East Hall

Stop by and dress up as an engineer so you can “wear your PPE” (Personal Protective Equipment)! Learn what chemical engineers do in practice, and learn the breadth of what chemical engineers make.

www.aiche.org

(ISPE) Illinois Society of Professional Engineers – Salt Creek Chapter

**1st Floor,
East Hall**

Explore the exciting, multi-faceted field of environment, electrical, and engineering through interactive displays.

www.ispe-saltcreek.org

The Center for Gifted / Midwest Torrance Center for Creativity

Room 159

Stop by to make slime to take home and enjoy various other interactive displays!

www.centerforgifted.org

(SAE) Society of Automotive Engineers

East Hall

Explore demonstrations of aerodynamic effects on cardboard cars powered by balloons with different size nozzle diameters.

www.sae.org

(ASABE) American Society of Agricultural and Biological Engineering

Room 163 & East Hall

Join us for hands-on exhibits related to agriculture and see a drone demo!

*4 Drone Demos will take place on the exterior East lawn by FX Drone Services Jerry Walton
Demo Times: 10:30 am, 11:15 am, 12:45 pm, and 2:00 pm

www.fxdroneservices.com

1st Floor - East Hall

Mr. Freeze

Room 166

WRISTBANDS REQUIRED! Video Overflow: Room 155

Pick up your reserved wristband at the IIT Table

The Fermilab's Mr. Freeze Demonstration shows the interesting and fun properties of cryogenics using Liquid Nitrogen (LN2). It is an exciting science based demonstration with lots of surprises and a few explosions. Lots of different properties and effects of the extreme cold are demonstrated and explained. Make learning science fun for everyone and encouraging kids to become more interested in science in school. You might get a taste of science in the end.

Pick up wristbands at the Illinois Tech table located in the 1st Floor atrium. Late admittance not permitted.

Reserved tickets **MUST be picked-up by 30 minutes** prior to each show. Pick up your reserved ticket at the IIT table in the 1st floor Atrium. No reservation? Stop by and get added to our waitlist.

NO ONE Admitted without a wristband. Video viewing of the show available in Room 155. No ticket required and is a good option for those with young children or those adverse to loud noises.

Shows will be full and admittance is NOT guaranteed.

SHOW TIMES:

11:45 am

1:15 pm

2:30 pm

mrfreezeman.webs.com

1st Floor



Public Safety

1st Floor, Atrium

See for Lost and found, lost parents/child, and any other public safety concerns.

2nd Floor

Second Floor Rooms 203 - 256



2nd Floor - Atrium & East Hall

ZOOM® - ASCE Illinois Section

Atrium, 2nd Floor

Based on the PBS television series, ZOOM®, activities introduce science and technology through hands-on activities that demonstrate engineering principles.

pbskids.org/zoom

DiscoverE/ISPE - DESIGN Squad Global

Room 236

Engage in hands-on engineering activities to open your imagination to designing, building and testing designs, and even competing for the best, fastest, highest, and/or farthest going design! Discover the power of teamwork.

www.discovere.org/discover-engineering
www.pbskids.org/designsquad

(DROE) DuPage Regional Office of Education

Room 239

“Toying with STEM”, Come play with us! The STEM Team of DuPage Regional Office of Education will engage you with science, technology engineering and mathematics activities.

www.dupageroe.org

SciTech Hands on Museum

2nd Floor, East Hall

Tackle the SOMA Cube Challenge! There is often more than one way to reach a successful result. There are 240 different ways to arrange the seven pieces of the SOMA Cube into a 3x3x3 cube. Try dozens of other possible 3D challenges with the SOMA Cubes!

www.scitechmuseum.org

(EAA-YE) EAA - Young Eagles

2nd Floor, East Hall

Introduce and inspire kids of all ages to the world of aviation through flight! Stop by and sign-up for EAA Young Eagles Program. Youth ages 8-17 can sign-up for a free flight!

2nd Floor - East Hall

(CAP) Civil Air Patrol

Room 243 & East Hall

Join us to see demonstrations on aviation, interact with a flight simulator, a robotic arm, and more. Stop by and make a rocket or airplane and learn why an airplane flies. There will be demonstrations throughout the day on CAP'S STEM Kits.

Presentation Times:

10:30 am and 1:30 pm - Toys in Space -

Demo of several toys that were taken on the space shuttle & space station and the effects of microgravity on them.

11:00 am and 2:00 pm - Space Shuttle Tile Demonstration -

Demonstration on how the tiles are made and how the heat is absorbed into them.

12:00-1:30 - Make & Take - Introduction to rocketry, including a brief discussion and demonstration on how model rockets are made and how to launch them properly.

**(ASME) American Society of Mechanical Engineers,
Fox Valley Section**

**2nd Floor,
East Hall**

Explore what keeps airplanes flying through Principles of Mechanical Engineering and engage in other hands-on activities demonstrating simple machines.

[www.community.asme.org/fox_valley_section/
groupleadership.aspx](http://www.community.asme.org/fox_valley_section/groupleadership.aspx)

Computer History

Room 247

My how Computers have changed over the years! Come see some of the 1st computers such as Sinclair, Commodore, and original PC's. See how computers evolved to the iPad and smart phones of today.

www.iit.edu

2nd Floor - East Hall

**(MED) Möbius
Educational Design**

2nd Floor, East Hall

Be an engineer in real time: Design, Build & Test a model suspension bridge!

(DCM) DuPage Children's Museum

Room 252

It's Fan-tastic! DuPage Children's Museum believes that children learn best by doing. Come test out Bernoulli's Principle of flight with fans and balloons and make a pinwheel that will spin in the wind!

www.dupagechildrens.org

**(ForenSec) IIT Forensics and
Security**

**2nd Floor,
East Hall**

Come test your Detective skills using our 360° camera! Can you solve a bank robbery, catch the thief and figure out where the stolen money might be? Use our 360° camera to search a room to identify items and solve the puzzle!

www.appliedtech.iit.edu/cyber-forensics-security

**(ISMA) Illinois Math and
Science Academy**

**2nd Floor,
East Hall**

Come build and launch a working catapult and race solar cars!

www.imsa.edu/site_section/stem-k-12

2nd Floor - North Hall

**(IEEE-EMC) The Institute of
Electrical and Electronic Engineers**

**2nd Floor,
North Hall**

Experience electrical noise, EMC shielding, and interact with a Van de Graff generator to create static electricity.

www.emcchicago.org

(KUC) KIDS Urgent Care

2nd Floor, North Hall

Come join us for puzzles, games, coloring, and crafts and learn more about Kids Urgent Care!

kidsurgent.care

**(FPDDC) Forest Preserve District of
DuPage County**

**2nd Floor,
North Hall**

Explore how the Forest Preserve District of DuPage County is helping freshwater mussels - one of the most imperiled groups of animals in North America - through propagation and conservation efforts. Examine freshwater mussel specimens plus the equipment engineered to raised them and use a microscope to count glochidia just like freshwater mussel ecologists do.

www.dupageforest.org

**(ASCE-GI) American Society of
Civil Engineers - IL Geo-Institute**

**2nd Floor,
North Hall**

Hands on Soil and Rock engineering experiments.

[www.asce.org/geotechnical-engineering/
geotechnical-engineering](http://www.asce.org/geotechnical-engineering/geotechnical-engineering)

(ASQ) American Society for Quality

2nd Floor, North Hall

Stop by for information on how quality works and get free promotional books.

www.asq-foxvalley.org

2nd Floor - North Hall

Illinois Institute of Technology (IIT)

SAT/ITM

Room 203

Come explore an Augmented Reality and Immersive Holograms Demonstration.

What happens when you move computing from 2D environments to 3D environments? Come see the Microsoft HoloLens technology paving the way for Immersive Holograms and the future of computing.

Must be 13+ to wear the headset, but all ages are welcome to come and see and interact with the exhibit.

Armour College of Engineering

Room 203

Come see 3D Printers in action and personalize a pencil with our Laser Cutter.

What do engineers make? Everything! Join the students from the Armour College of Engineering for hands-on demonstrations and activities across a broad range of engineering disciplines – Civil, Chemical, Mechanical, Biomedical and more!

Visit the following student organizations for interactive activities:

Illinois Tech Railroad Club – Interact with a model train

IIT EWB (Engineers Without Borders) – presents Food Gates

IIT BMES (Biomedical Engineering Society) – EKG machine

IIT Eta Kappa Nu – LED Breadbox

IIT SWE (Society of Women Engineers) and NSBE (National Society of Black Engineers) – visit and make Lip balm!

IIT SHPE (Society of Hispanic Professional Engineers) –

Makey makey games

www.engineering.iit.edu

PLAN YOUR DAY

The following are set presentation times for this year's STEM expo. Don't miss out! See each presenter's description within the program for additional details.

SEAOI's "Last Brick Standing", Room 114

10:30 am (Alumni only), 11:30 am, 12:30 pm, 1:30 pm, 2:30 pm

Fermilab's Mr. Freeze (Wristbands required for entry), Auditorium/ Room 166

10:30 am (Alumni only), 11:45 am, 1:15 pm, 2:30 pm

ASABE's Drone Demonstrations, East Lawn

10:30 am , 11:15 am, 12:45 pm, 2:00 pm

CAP's Presentations, Room 243

10:30 am and 1:30 pm – Toys in Space

11:00 am and 2:00 pm – Space Shuttle Tile Demo

Lunch seating: Room 203 or in the snack shop off the 2nd floor Atrium

Is This Campus Conveniently Located For You?

Get more information on room rentals for your next meeting, get details on corporate training and employee development, OR have your High School student join us for Summer camps!

Room rentals – email ricerentals@iit.edu or call 630-682-6000

Summer camps – visit www.appliedtech.iit.edu/nxtgen and www.engineering.iit.edu/summer/pre-engineering for more info!

Corporate Training/Employee Development – visit www.pl.iit.edu for information on workshops, customized short courses/programs, PMP® Exam Prep, and PE Review Online Exam Prep for companies and organizations seeking to enhance the professional skills and effectiveness of their employees.

Special Thanks

Platinum Donor

Daniel F. and Ada L. Rice Foundation

Donors

Institute of Electrical and Electronics Engineers (IEEE)
Chicago Section

American Institute of Chemical Engineers (AIChE)

Illinois Society of Professional Engineers (ISPE) -
Salt Creek Chapter

American Society of Mechanical Engineers (ASME) -
Fox Valley Section

Society of Manufacturing Engineering (SME)

American Society for Quality (ASQ) - Fox Valley

Society of Automotive Engineers (SAE) - Chicago section

Recognition

Thank you to all of our volunteers and donors who helped make this event possible.

Program designed by Deborah Barndt,
Bachelor and Master's in ITM '19

Expo Hosted By

ILLINOIS INSTITUTE
OF TECHNOLOGY
School of Applied Technology

