
*Welcome to
The Twenty Eighth Annual
DuPage Engineers Week Expo
February 25, 2012
10:30 AM to 3:30 PM*

*Engineering: The Gateway to
Tomorrow's Technology*

*Presented At The
School of Applied Technology
Daniel F. and Ada L. Rice Campus
Illinois Institute of Technology
201 East Loop Drive
Wheaton, IL 60189*

Some Things to See

On the Second Floor

*300M into Engineering and Design Squad
DuPage Children's Museum
LEGO® Robotics*

On the First Floor

*SciTech Museum — Mr. Freeze Cryogenics
High Rise Building Design — Mission "Not" Impossible
Working Bikes — Chicago Robotics*

Visit our Website - <http://dupageeweek.iit.edu>

2012 Engineers Week Program

SciTECH Room 103

The science and technology museum (*SciTECH*) in Aurora, IL presents several hands-on experiments that are exciting, entertaining and educational. Sample demonstrations are available and will make you want to visit the museum. Be sure to visit SciTech at their website

<http://www.scitechmuseum.org>

11:00 AM TO 3:30 PM

SOCIETY OF MANUFACTURING ENGINEERING Room 111

The Society of Manufacturing Engineering (SME) will have local high school and college students on-hand to show their projects and talk to young attendees. We support local high schools and colleges through mentorship, tours, with grants to upgrade and replace equipment for schools that are STEM and PLTW. Check out our education tab at

<http://www.smechapter5.org/localschools.html>.

11:00 AM TO 3:30 PM

WORKING BIKES Room 112

Come and test a bike powered generator. Working Bikes has several different bike powered systems for you to try out and see how good you are at generating electricity to power a phonograph or water fountain or other electrical devices. Bikes are collected and recycled for use around the world.

11:00 AM TO 3:30 PM

High-Rise Building Design — Mission 'Not' Impossible Room 114

The secret world of how buildings stand up will be revealed. Using such engineering marvels as the world's tallest tower, the Burj Khalifa, and the Trump Tower Chicago, the engineering principles of structures will be discovered. An engineer's tools of the trade such as the amazing strength of shapes, structural materials, wind engineering and sustainability will be uncovered in this interactive and educational program. Concrete beams will be destroyed. A hands-on shake table will allow students to construct their own LEGO® building designs and test them to destruction under a simulated earthquake. The exciting presentation will be geared to inspire students to study math, science, architecture and of course engineering. Prizes will be given to selected kids who can construct an "earthquake resistant" structure! We highly recommend you "choose to accept this mission".

11:30 AM, 12:30, 1:30, 2:30 PM

2012 Engineers Week Program

ASK AN ENGINEER Room 118

AAAEA's PowerPoint presentations on careers in engineering and science. The "Ask An Engineer" event involves a team of engineers from several different fields to answer your questions. An AAEA slideshow features several of entries in the high school bridge contest and display winning entries from their annual essay/poster contest. The tower test takes place in the Atrium at 2:00 PM.

11:15 AM, 12:15, 1:15 PM

COMPUTER HISTORY Room 120

How have computers changed over the years? At the Computer History display are some of the first computers such as the Sinclair, Commodore and original PCs. See how the computer has changed over time leading to the iPad and cell phones of today.

11:00 AM TO 3:30 PM

SWEET FLIGHT Room 123

Learn about what makes objects fly through the air with the Society of Women Engineers. Create your own airborne system and record the flight time and distance. Learn design techniques and engineering terms related to flight. Earn flight wings for your design and evaluation!

11:00 AM TO 3:30 PM

LIGHT AND COLOR Room 141

How do different lights affect your mood? How does your computer printer and color TV mix colors to give a full spectrum result? How do mirrors change the image you see? Step in to work with interactive displays to find the answers to these questions about light, color and optics from members of the Optical Society of Chicago.

11:00 AM TO 3:30 PM

CHICAGO AREA ROBOTICS GROUP Room 142

The Chicago Area Robotics Group (ChiBots) is displaying small clever autonomous vehicles and other robotic devices. ChiBots is a group of amateur robot builders holding monthly meetings at the Schaumburg Library. Information about the organization is available at www.Chibots.org.

11:00 AM TO 3:30 PM

2012 Engineers Week Program

IEEE-WIE Room 159

Amazed at the person on a TV show who can control a satellite out of a tin can and some wire? Or maybe learn how harnessing natural wind power can light up your home? Come and design your own Pac-Man game, create an animated card, or make a cat paint through Scratch's graphical programming blocks. Join our Techno-savvy ladies as they demonstrate how to make a motherboard, illustrate how wind power works, and teach you how to think computationally. These activities are presented by Women in Engineering, a Division of the IEEE: www.ieeechicago.org/wie.

11:00 AM TO 3:30 PM

MR. FREEZE CRYO SHOW Room 166

The 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. Makes learning science fun for everyone and encourages kids to become more interested in science in school. Visit Mr. Freeze at <http://mrfreeze-man.webs.com>.

11:15 AM, 12:30, 2:00 PM

LEGO® ROBOTICS Room 208

LEGO® blocks and laptop computers are used by FRIENDS OF THE GIFTED AND TALENTED (FROG) to demonstrate the principles of robotics. Visitors will have an opportunity to work with the robots and to learn more about their use in industry, science and space exploration.

11:00 AM TO 3:30 PM

ZOOM INTO ENGINEERING 2ND FLOOR ATRIUM

ZOOM into Engineering is a program based on the PBS series ZOOM®. This program is designed to introduce students in the K-6 age group to science and technology. Hands-on projects demonstrating engineering principles are used to hold the interest and challenge the students. Everyone is encouraged to spend time at the ZOOM® AREA. ISPE-Dukane and ASCE are providing assistance for the construction projects and demonstrations. More information is available at <http://www.pbs.org/parents/zoom/engineering/>

11:00 AM TO 3:30 PM

2012 Engineers Week Program

DESIGN SQUAD Room 236

Design Squad is in its fifth successful season! It is a PBS program that enables teenagers to compete to design and build fantastic, whimsical, and fully operational machines and other products. Design Squad first aired on WTTW beginning in March 2007. Today, come and experience activities based on the Design Squad program for 7 to 13-year old future engineers. This event is presented by the Illinois Society of Professional Engineers - DuKane Chapter (ISPE-DuKane). For more information on Design Squad visit <http://pbskids.org/designsquad/>

11:00 AM TO 3:30 PM

DUPAGE CHILDREN'S MUSEUM Room 239

Come try our engineering challenges! Make a boat that's powered by the water it's floating in and a glider made from two strips of paper. Look for more information on the museum's website: <http://www.dupagechildrensmuseum.org>

11:00 AM TO 3:30 PM

ALL ABOUT FLIGHT Room 243

Why does an airplane fly? Learn about different types of planes and why shape is important. Make a "launchable" rocket or airplane to take home. Visit the CAP website at <http://www.ilcap.org>.

11:30 AM, 12:30, 1:30, 2:30 PM

FOOD TO SATISFY YOUR HUNGER HEALTHY ENOUGH FOR MOM, TASTY ENOUGH FOR KIDS

GIRL SCOUTS Room 126, Atrium

As a fund-raiser, Girl Scouts of Greater Chicago and Northwest Indiana will be providing hotdogs, chips and drinks (water and soda) for our visitors and vendors. This year the troop is raising funds for 2012 trips to several colleges to plan for their future education. Your support for this fund raiser is greatly appreciated.

2012 Engineers Week Program

Upcoming Events at the Rice Campus

Thursday, April 5: 6:30-8 PM

How Social Networks are Changing Our Lives & Our Culture

Professor and author, Lori Andrews, will share how our digital identities on the Web are starting to overshadow our physical identities and what we can do about it in this free seminar.

Thursday, June 7: 6:30-8 PM

Programming Your Home

Join Mike Riley, author and software developer, to learn how simple electronics can be used to automate your home through smartphone apps or voice commands.



AAAEA 1st Floor, Atrium

The Arab American Association of Engineers and Architects is a non-profit, non-political, non-religious professional organization. It is open to all architects, engineers and computer scientists. At this year's DuPage E-Week Expo, the AAAEA display provides you with an opportunity to learn about corrosion protection and how tests for it are done. Learn about surveying and material testing equipment. You will be asked to participate in hands-on activities involving this equipment.

AAAEA will also do a load capacity test on a balsa wood tower structure. Students will be able to guess throughout the day on how many pounds the structure will be able to support. *The tower will be tested at 2:00 PM.* More information about AAAEA is available on the website, <http://www.aaaea.org>.

2012 Engineers Week Program

ACS 1st Floor, North Hall

The American Chemical Society (ACS) encourages the advancement of the chemical enterprise and its practitioners through scholarship and professional services and support. The ACS communicates with various audiences, including students, educators, and those involved in the public policy arena. To get more information, visit either <http://www.acs.org> or <http://www.chicagoacs.org>. At the display this year, experiments involving water will highlight the advantages that chemistry provides.

AICHE 2nd Floor, East Hall

Do you know what a Chemical Engineer does? Come meet some of AIChE's Young Professionals and find out! We will show off all the potential careers for Chemical Engineers and what it takes to get there.

AIChE is the world's leading organization for chemical engineering professionals, with nearly 45,000 members from over 90 countries. AIChE has the breadth of resources and expertise you need whether you are in core process technologies or emerging areas. The Chicago chapter was founded in 1925 and currently has over 1,200 members. For more information, please visit our website at <http://www.iche-chicago.org>.

ANS 1st Floor, North Hall

The American Nuclear Society develops and disseminates nuclear science and technology information. Its members work in such diverse areas as education, research and development laboratories, government, power plant operations, medical and isotope applications, and engineering design and services. The ANS display has information about careers in nuclear power, nuclear medicine and more, plus hands-on demonstrations for radiation detection, a model fuel bundle for a nuclear reactor, and a work sheet to calculate your daily exposure to radiation. More information on ANS can be found at their website, <http://www.ans.org>

2012 Engineers Week Program

ASABE 1st Floor, East Hall

The world will need as much food in the next 40 years as that produced in the last 10,000 years combined! Is that a big enough challenge to capture your creativity and join the cause? Agricultural Engineers are committed to providing food for our world, natural fibers for our clothes, structural lumber to build houses we live in, and renewable fuels to foster our energy supply. At the American Society of Agricultural and Biological Engineers booth, you will have an opportunity to talk with engineers that are finding new ways to feed and clothe our expanding population on shrinking available land. You will also have a unique opportunity to see the evolution of tractor designs over the past 100 years and talk to engineers that have made it possible to replace 450 horses with one tractor and still perform more work in the same period of time. Equally amazing will be the discovery that this tractor can operate on a derivative of the same food ration previously fed to the horse. You can find out more about ASABE at the website <http://www.asabe.org>

ASCE 2nd Floor, Atrium

Civil engineers build the world's infrastructure. The various disciplines within civil engineering include water treatment, wastewater treatment, building and bridge design, transportation systems and more. Civil engineers are creative, people-serving, and problem-solving leaders who make our lives easier to live from one day to the next. Their website is <http://www.isasce.org>

ASME 2nd Floor, East Hall

Help the ASME demonstrate mechanical engineering principles such as Bernoulli's Principle to see "What Keeps Airplanes Flying" and "Why Curve Balls Curve". The American Society of Mechanical Engineers sponsors many programs for students interested in science and engineering. Further information is available at their website, <http://www.sections.asme.org/FoxValley>

CIVIL AIR PARTOL (CAP)-ILLINOIS WING 2nd Floor, East Hall

Make and take airplanes and rockets. See the effects a wind tunnel has on wing design and the effects of shape. Information will be available for teachers and home schooling parents. The CAP website is <http://www.ilcap.org>.

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IDOT/UIC GATEWAY TRAVELER INFORMATION 2nd Floor, East Hall

Where do travel times come from? How can drivers find out the least congested routes? Is there road construction planned for my neighborhood? Learn how to use the travelmidwest.com website to learn about the traffic in your area and where the information came from.

IEEE-EMC SOCIETY 2nd Floor, North Hall

The Institute of Electrical and Electronic Engineers (IEEE) Electromagnetic Compatibility (EMC) Society is concerned with designing and testing/measuring radio waves from electronic equipment so that the radio waves from the equipment do not interfere with the correct operation of other electronic equipment. The exhibit includes examples of electronic interference to radios from common household electrical products, showing how radio waves can be eliminated from causing interference, and a static electricity generator. More information about the Chicago Chapter of the IEEE is available at the website, <http://www.emcchicago.org>

IIE 2nd Floor, North Hall

The Institute of Industrial Engineers is the society for engineers who work on improving productivity and quality. The IIE is demonstrating robotics and the use of robotics in automated operations. More information about Industrial Engineering is available at their website, <http://www.iienet.org>

ISPE - DuKANE CHAPTER 2nd Floor, Atrium

The Illinois Society of Professional Engineers (ISPE) in association with the national organization (NSPE) is comprised of professional engineers (PEs) representing engineers from all fields of engineering. The DuKane Chapter is presenting two sets of activities. Visitors can "ZOOM into Engineering" or become part of the Design Squad with activities that allow kids the opportunity to experience engineering principles through the use of hands-on projects. Information regarding ISPE is available at the ISPE-DuKane website , <http://www.ispe-dukane.org/>

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ISPE - SALT CREEK CHAPTER 1st Floor, East Hall

The Salt Creek Chapter is part of the Illinois Society of Professional Engineers and the national organization. This display includes many common everyday utensils, tools, and curiosities to demonstrate engineering principles and the broad range of the engineering profession. Visitors can look at, hold or operate most of the display items, including a Van de Graaf generator, which “generates” static electricity. Engineers explain the exciting, multi-faceted field of environmental engineering. Mussels, photo ionization detectors, field equipment for stream surveys, and more will be on display for demonstrations. More information about the Salt Creek Chapter is available on their website, <http://www.ispe-saltcreek.org>

SAE 1st Floor, East Hall

Highlighted at the Society of Automotive Engineers display is their (AWIM) A World in Motion Program that provides material and information to middle schools for the study of many different modes of transportation and the scientific principles behind their function. More information about this program is available at the SAE website, <http://www.awim.org>

SEAOI 1st Floor, North Hall

SEAOI is a professional association representing the licensed structural engineers in the State of Illinois. Visit our hands-on display of structural models of buildings and bridges. Literature on structural engineering will also be distributed. Visit their website at <http://www.seaoi.org>.

WHEATON POLICE DEPT. 1st Floor, Atrium

Wheaton Police Department officers will be distributing information and answering questions about community programs.

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SFPE 1st Floor, East Hall

The Society of Fire Protection Engineers is an organization that promotes fire safety. Come and learn about sprinklers, fire detectors, portable fire extinguishers, halon systems and more! More information about the SFPE is available at their website, <http://www.chicagosfpe.org>

SWE 1st Floor, North Hall

The Society of Women Engineers is an organization for engineers and computer scientists in all stages of education and career. SWE once again is conducting a **ScavEngineer** hunt where students search for various types of engineers to learn about their work and win a prize sponsored by local engineering companies. Visit the national organization website, <http://www.swe.org>, or the Chicago Regional Section website, <http://www.swe.org/chicago>, for more information about SWE.

GOOGLY-EYES 2nd Floor, East Hall

Hanging out with the Real-Time Communications Lab can change your life – or at least your face! You can change your eyes, your glasses or your hat! You might morph into a monster or a mouse. You can make some strange things happen. How? APPS!... Who? YOU! Come hang out with us. We will show you what happens behind the APPS as well as what is in front of your face!

WORKING BIKES 1st Floor, North Hall

Working Bikes collects about 7000 used bicycles a year in the midwest and distributes them locally as well as to bike projects in developing countries. We also show how bicycles can be adapted to power appliances as part of an energy education curriculum. Checkout our website, <http://workingbikes.org>

There are many new and fun exhibits at both the DuPage Children's Museum and the SciTech Hands-On Museum. We urge you to assist these organizations through your attendance, membership and/or contributions. These two organizations are doing a great job of increasing interest in science and engineering among young people.

2012 Engineers Week Program

ADDITIONAL PROGRAMS AND RESOURCES

Many programs besides our E-Week Expo are open to students in all age groups. Below is a list of some of these programs and sources for further information on available programs.

AAAEA Essay/Poster Contest

The contest is open to all students in the 3rd through 8th grades in the Chicagoland area schools. Students submit an essay and a poster about an engineer who has made an impact on their lives. The purpose of the contest is to stimulate students to consider careers in engineering. For more information, visit our website at www.aaaea.org or e-mail us at aaaea@aaaea.org

IIT Bridge Contest for High School Students

The construction and testing of model bridges promotes the study and application of fundamental principles of physics and helps high school students develop "hands on" skills through bridge construction. More information about the bridge building contest is available at <http://www.iit.edu/~hsbridge>

Mathcounts — <http://www.mathcounts.org>

A nationwide math competition for middle school students concentrating on improving math skills.

Future City Competition — <http://www.futurecity.org/Illinois-Chicago> or www.futurecitychicago.org

National competition sponsored by the National Engineers Week Committee for 6th, 7th and 8th grade students. Students design and present their concepts of the city of tomorrow.

JETS TEAMS — <http://www.jets.org>

The JETS program is an academic challenge for teams of math and science students from high schools throughout the area. Information about the exam is available at their website.

Design Imagination (DI®) — <http://www.destinationimagination.org>

A global competition with both STEM and Fine Arts that build skills in teamwork, creativity and problem solving.

Engineer Girl — <http://www.engineergirl.org/>

A website dedicated to introducing girls to opportunities in engineering.

2012 Engineers Week Program

February 23, 2013

Keep this date open for next year's E-Week Expo.

Some of your favorites will be returning along with new exhibitors and programs.

Open to everyone! FREE!

*Pre-School, Grammar School, Junior High, High School
Students and their Parents.*

Websites of Interest for E-Week Activities

Several E-Week sites are available for "surfing" and we recommend that you take time to look over the following websites.

DuPage E-Week Committee — <http://dupageeweek.iit.edu> This DuPage website has links to other sources of information.

Chicago E-Week Committee — <http://www.chicagolandeweek.org>

National E-Week Committee — <http://www.eweek.org>

Illinois Engineering Hall of Fame — <http://iehof.com>

US FIRST (Robotics Competition) — <http://www.ilfirst.org/>

Discover-e — A website well worth investigating. <http://www.mydiscover-e.org> provides information on events and places throughout the country that are of interest to both parents and students.

SciTech Museum — <http://www.scitechmuseum.org>

DuPage Children's Museum — <http://dupagechildrensmuseum.org>

**Our Special Thanks to the Daniel F. and Ada L. Rice
Foundation for their very generous gift to the E-Week Expo.**

Engineers Week 2012

DuPage Engineers Week Committee
School of Applied Technology
Illinois Institute of Technology
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Sustaining Partner (\$1000 and above)

Daniel F. and Ada L. Rice Foundation

Sponsoring Partner (\$500-999)

Illinois Society of Professional Engineers — Salt Creek Chapter

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American Institute of Chemical Engineers
American Society of Civil Engineers
American Society of Mechanical Engineers — Fox Valley
Christopher Burke Engineering
Illinois Society of Professional Engineers — DuKane Chapter
IEEE-EMC Society — Chicago Chapter
Society of Automotive Engineers
Society of Fire Protection Engineers
Society of Manufacturing Engineers
Society of Women Engineers
Structural Engineers Association of Illinois

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American Nuclear Society
American Society of Agricultural and Biological Engineers
Arab American Association of Engineers and Architects
Institute of Industrial Engineers
Optical Society of Chicago
Working Bikes

Partner

American Chemical Society — Chicago Section
IEEE-Women in Engineering

Visit our Website - <http://dupageweek.iit.edu>