

**Friday – November 2**

**11:30-12:00**

**IDEA Business Meeting** – Marriott Redbird C

**Friday – November 2**

**1:00-2:00pm**

**Jana Sebestik** - Solar Power – Room 132

Investigate the components and circuitry in a solar path light and get insight into how microprocessor-based digital protection relays protect and strengthen the power grid.

**Jason Hlavacs** - Using Social Media to Showcase Your Program and as a Professional Development Tool – Room 208

Social media can be a powerful tool for technology and engineering teachers. From a recruiting standpoint and communication tool, it is a great way to showcase the learning that is taking place in your program. From a professional development angle, it will allow you to stay on the bleeding edge of your discipline as well as teaching and learning methods in a way that you will have complete control. Social media is everywhere... Why not use it to your advantage.

**Chuck Bales** - Fusion 360 – Room 160B

What can you do with Autodesk Fusion 360? Whether you are new to 3D solid modeling or a veteran of Inventor or other programs, Fusion 360 is sure to grab your attention. In this hands-on session, you will introduce Fusion 360 and answer your questions about modeling and sculpting, rendering, assembly, and even moving your designs through the workflow of manufacturability via built-in CAM features such as milling, turning or 3d printing – all possible with Fusion 360.

**Sam Hochberg** - SOLIDWORKS CAD Software in Industry and Education – Room 167

This presentation will include a demonstration of SOLIDWORKS 3D CAD software and a discussion of its use in industry and education, additional benefits, curriculum, and certification testing programs.

**Certiport** – AutoDesk Certification – Room 168

AutoDesk certification testing available, test as a user in many of AutoDesk popular software. Whether you are an educator helping students prepare for college or career, or a student looking for a competitive advantage, or perhaps a company looking for people with the qualifications to make things happen, an Autodesk certification can make a difference.

**Dr. Chris Merrill** - IL CTE Curriculum Project – Room 173

The mission of the *Illinois Career and Technical Education Innovative Curriculum Resources Project* headed by Illinois State University and funded by the Carl D. Perkins Career and Technical Education Improvement Act of 2006, is to facilitate and coordinate Career and Technical Education (CTE) programs in public, secondary schools in Illinois related to (a) Business, Marketing, and Computer Education, (b) Family and Consumer Sciences, (c) Health Sciences Technology, and (d) Technology and Engineering Education.

**Brock Keller and Matt Emberson** - Composites in the Classroom: Molding Minds Part I – Room 169

Teaching cutting operations, mold making, and the use of composite materials to produce manufactured products. This hands-on session will focus on the use of fiberglass and concrete. We discuss various applications and processes use in manufacturing. This session is part one of a two part series of instruction. Part two will be held on Saturday due to curing times of materials used. Limited to 20 participants. Must attend both sessions.

**Friday – November 2**  
**2:30-3:30pm**

**TEECA** – Challenge: Teaching Lessons, Quiz Bowl & Transportation (2:30-7:00)

**Jana Sebestik** - Using Wind Power to Generate Electricity – Room 132

Investigate motors and generators and build a wind powered turbine that produces electricity. Use an engineering design process to create and improve your device.

**Cindy Stover** - Find Your Strengths and Lead With Them – Room 208

Chances are we all spend more time trying to fix our shortcomings instead of developing our strengths. This often prevents people from doing their best. Attend this session to learn about strengths and how to become a more effective leader. Strength based schools will also be discussed. At the end of the session, each participant will be given the “Strengths Finder 2.0 “ book, which contains an access code to take the Strengths Finder 2.0 assessment. This assessment will help you find your strengths. After you complete the assessment, you will receive a personalized strengths-based leadership guide. Use the guide for your own benefit.

**Dave Weidkamp** - Beyond 3D printing Using Rhino – Room 160B

Casting custom chocolate bars on a budget. Using a standard shop vac and common plumbing parts and milk cartons. Using Rhino 3D to generate digital models for 3D printing. Using these models as plugs to vacuum form HDPE (plastic milk cartons) for chocolate molds. Suitable for Middle school through High School.

**Bob Mihelich** - Autodesk Revit Content (Family) Creation and Editing – Room 167

Have you ever downloaded Revit content from a BIM component supplier to find it is not quite right and are unsure on how to edit it for your specific needs? Have you heard of the term parametric, but are not quite sure what it means and how it Revit and BIM? This hands-on session will look to answer these and other questions related to Revit content by focusing on introductory Revit content creating and editing skills necessary to fully utilize the Revit software platform and BIM process. Using the various Revit UI environments, we will create and edit fully parametric models that you can use in your own projects.

**Certiport** – AutoDesk Certification – Room 168

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**Andrew Guetler** - Two Stroke Carburetor Basics – Room 173

This session will discuss the different types of carburetors available on STIHL handheld outdoor power equipment. We will also provide examples for attendees to disassemble in order to identify internal parts, decide whether or not the carburetor is worth repairing, and locate the most commonly worn items.

**Friday – November 2**  
**3:30-4:30pm**

**Gary Cotie and Corey Duzan** - Updates to PLTW IED, POE and DE Curriculum – Room 132

PLTW curriculum has evolved over the last four years. This presentation will discuss new activities and philosophy behind the new activity. Discuss new equipment and software for IED, POE, and DE. The presentation will also discuss the new Courses tool to deliver curriculum.

**Anthony Tegtmeyer** - The Instant Challenge Library – Room 208

Want to take a day away from the grind and let the students have some fun, but still learn and practice important curricular concepts? Need something fun to do for the first day of school? Are you and your students tired of the bridge-building or tower-building activities and looking for something different? In this session, you will experience some fun, one-day activities that reinforce the important concepts you want to teach and get access to a library of instant challenges that provide a variety of ideas and are easy on the budget.

**Dave Weidkamp** - Using Rhino 3D to drive your CNC & FAB LAB tools – Room 160B

Using Rhino 's 2D tools to generate geometry to drive Laser cutters, WaterJet, PlasmaCAM, and Vinyl cutters. Tips and tricks for getting the 3D mesh model for 3D printing.

**Dan Ludwigen** - ChallengeUSA High Mileage Vehicle Competition – Room 167.

The goal of these programs is to bring attention to the environmental problems of conventional cars and demonstrate the viability of alternative transportation methods such as electric vehicles and higher mileage. Both programs provide a means of teaching young people how to evaluate alternatives and make sustainable lifestyle choices and use a problem-solving discipline to design and build these efficient vehicles, all in a hands-on and team-oriented approach. Students are combining both mental and physical skills through applying Manufacturing and Engineering concepts and equipment to accomplish their tasks.

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**Michael DeWees** - Small Electronics – Room 169

Using small electronics to teach reverse engineering. Start with a full size lamp, investigate it, tear it down, and then redesign it to be a working four inch model.

**Friday – November 2**

**5:00 – 7:30pm**

Destihl Factory Tour and Light Dinner 1st Bus leaves the Marriott @ 5:00pm - 2nd bus @ 5:30

**Friday – November 2**

**8:00 – 10:00pm**

Reception at Marriott

**Saturday – November 3**

**8:00 – 9:00am**

Light Breakfast Turn Hall – Room 168 Available for seating  
Refreshments – Room 168

**Saturday – November 3**

**9:00 – 10:00am**

**Bob Mihelich** - Spatial Visualization and Sketching – Room 167

What are spatial visualization skills (SVS); can they be assessed, and, more importantly, can they be improved? This session will build upon last year's session trying to further answer these and related questions on how we can effectively incorporate traditional and digital approaches to teaching these important, foundational skills, including a new (updated) interactive, media-rich Android, iPhone, and iPad sketching application that mimics the natural, hand drawing experience that provides immediate feed-back for students and learning assessment for instructors. A hands-on test drive of the technology will be available to participants.

**David Taylor** - The Foundry- Pouring Molten Aluminum – Room 132

I will present how to design, construct, and operate a shop fabricated aluminum melting foundry that operates off of free waste motor oil. I will bring in the foundry tools to demonstrate what it looks like but for practical reasons we would not fire up the foundry. This project incorporates design, metallurgy, welding, and fabricating areas.

**Corey Duzan** - Hologram Engineering – Room 160B

Showcasing student work is important for student morale and program growth. Your students are doing great things with CAD software in your classrooms but are often left with limited ways to display that great work to others. Wouldn't it be cool if students had the ability to display their work as holograms for others to see? Come and check out this session on Hologram Engineering. Be ready to create a hologram projector to take with you and find out how to use Autodesk products,

Powerpoint, and YouTube to show off your work to others as a hologram. It is strongly recommended that you bring a laptop with Autodesk Inventor and Microsoft Powerpoint installed.

**Brock Keller and Matt Emberson** - Composites in the Classroom: Molding Minds Part II – Room 169

This session is part two of Friday's session. Mold removal and finishing process. Must attend both sessions.

**Saturday – November 3**

**10:00 – 11:00am**

**Don Whitman** - Sweet Success of Engineering Design – Advanced Top-Down Design Process using candy – Room 167

STEM Activities Incorporating Geometric Shapes of Candy Using an advanced “Top-Down” design workflow using Autodesk Inventor to teach advanced mathematics.

**Kurt Sanderson** – Sheetmetal Middle School STEM Curriculum – Room 169

The three Middle School teachers from district 205 in Elmhurst Illinois would like to share with you what curriculum we have developed to incorporate CAD, 3D printing for prototyping, and sheet metal working. We will show the process of 3D design of car parts, and the assembly of a sheet metal racecar.