The 2013 NWO Symposium on Science, Technology, Engineering, and Mathematics Teaching is sponsored by the Northwest Ohio Center for Excellence in STEM Education and its partners around northwest Ohio.
Welcome

We are delighted to welcome you to the Northwest Ohio Symposium on Science, Technology, Engineering, and Mathematics Teaching. The Symposium is organized and sponsored by the Northwest Ohio Center for Excellence in STEM Education (NWO) with support from The Andersons, BGSU’s College of Education and Human Development and the Center of Excellence for 21st Century Educator Preparation, BP – Husky, LLC, and PNC Bank.

This event offers a valuable opportunity for PreK –16 educators to share and learn from one another in our common effort to advance science, technology, engineering, and mathematics (STEM) education for people of all ages.

Last year, over 400 people attended this event, including in-service and pre-service teachers, higher education faculty, graduate and undergraduate students, and business and community partners participating in more than 50 sessions. This year, vendors will again participate so as to keep educators abreast of new and exciting classroom materials and opportunities.

We hope you find the 2013 Northwest Ohio Symposium on Science, Technology, Engineering, and Mathematics Teaching to be a beneficial experience, especially those of you here for the first time. With your help, we will continue to make this symposium the premier STEM professional development opportunity for educators in northwest Ohio. Thank you for joining us!

W. Robert Midden  Jessica Belcher  Susan Stearns
Director  Assistant Director  Assistant Director
NWO  NWO  NWO
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Let’s get trending!  
Include #NWOsymposium  
on all of your posts!
Conference Agenda

7:30 – 8:30 AM .......... Registration (Outside Olscamp Hall: Room 101)
8:00 – 9:45 AM .......... Breakfast (Olscamp Hall: Room 101)
8:30 – 9:45 AM .......... Welcome and Keynote Address
10:00 – 10:50 AM ....... Block A
11:00 – 11:50 AM ....... Block B
11:50 AM – 12:40 PM ... Lunch
12:50 – 1:40 PM ....... Block C
1:50 – 2:40 PM ......... Block D
2:50 – 3:40 PM ......... Block E

Vendor Area Open from 8:00 AM – 12:40 PM

OLSC = Olscamp Hall  BA = Business Administration Building

EVALUATION of Symposium

Please complete the online evaluation for the 2013 Symposium. All who complete the survey will be entered into a drawing for a $25 Amazon.com certificate.

Please go to the following website to complete the online evaluation:

www.nwocenter.org/nwoSymposium

Additional, all who complete the individual session evaluations will be entered into a separate drawing for a $25 Amazon.com certificate.
Sessions At A Glance by Block

Block A: 10:00 – 10:50 am

A1  Screencasts and Video Tutorials for Online and Face-to-Face Classes (LIMIT 20)
   Presented by: Kate Dellenbusch, Bowling Green State University
                Peter Blass, Bowling Green State University
   Grade Levels: 5 - 8, 9 - 12, College
   Strand: Integrating Technology in the Classroom
   Room: BA 1002

A2  A Smorgasbord of Active Learning Tools: Appetizers, Entrees, & Desserts
& B2 (Double Session – Block A & B: 10:00 – 11:50 AM)
   Presented by: Chris Boudrie, Lourdes University
   Grade Levels: College
   Strand: Inquiry in the College Classroom: Enhancing the Undergraduate Experience
   Room: BA 1000

A3  Helping Students Construct Models: Modeling Instruction in Physical Science
   Presented by: Mary Kate Hafemann, Ottawa Hills High School
   Grade Level: 9 - 12
   Strand: Teaching and Learning in SCIENCE
   Room: BA 117

A4  Using Augmented Reality to Teach Forces and Motion (Double Session – Blocks A & B: 10:00 – 11:50 am)
& B4
   Presented by: Rick Worch, Bowling Green State University
                Lan Li, Bowling Green State University
   Grade Levels: 5 - 8
   Strand: Integrating Technology in the Classroom
   Room: BA 115

A5  Explore! Plate Tectonics (Double Session – Blocks A & B: 10:00 – 11:50 am)
& B5
   Presented by: Davida Buehler, The Geological Society of America
   Grade Levels: 5 - 8
   Strand: Teaching and Learning in SCIENCE
   Room: BA 114

A6  Get the "Scoop on Soils"! Free Lesson Plans and More for K-4 Soil Study
& B6 (Double Session – Blocks A & B: 10:00 – 11:50 am)
   Presented by: Jodi Haney, Bowling Green State University
   Grade Levels: PreK - 4
   Strand: Teaching and Learning in SCIENCE
   Room: BA 110
Block A: 10:00 – 10:50 am continued

**A7 Zoo Animals Helping STEM Learning**
*Presented by:* Josh Minor, Toledo Zoo
   Nicole Syrek, Toledo Zoo
   Jerran Orwig, Toledo Zoo

*Grade Levels:* PreK - 4, 5 - 8
*Strand:* STEM in the Community: Thinking Outside the Classroom

**A8 G3: Game Design in the Classroom**
*Presented by:* Dean Goon, Mount Vernon Nazarene University/Makeadent Educational Consulting

*Grade Levels:* 5 - 8, 9 - 12, College
*Strand:* Putting Creativity to Work: Teaching STEM With Innovation

**A9 Apps for Science Content, Creation, Connecting, and Collaborating & B9 (Double Session – Block A & B: 10:00 – 11:50 AM)**
*Presented by:* Leah LaCrosse, Huron City Schools

*Grade Levels:* PreK - 4, 5 - 8, 9 - 12
*Strand:* Integrating Technology in the Classroom

**A10 Empowered by Google: Statistics in Real Time**
*Presented by:* Stephanie Buckenmeyer, Anthony Wayne Local Schools
   Lori Williams, Anthony Wayne Local Schools

*Grade Level:* 5 - 8, 9 - 12
*Strand:* Integrating Technology in the Classroom

**A11 CJ STEMM - An Innovative Multifaceted Approach to K-12 STEM Education in the Classroom and Beyond**
*Presented by:* Meg Draeger, Chaminade Julienne Catholic High School
   Christine Evans, St. Albert the Great School

*Grade Levels:* 5 - 8, 9 - 12
*Strand:* Putting Creativity to Work: Teaching STEM With Innovation

**A12 Examining Model Curriculum in Mathematics: 8th Grade**
*Presented by:* (CO)²RES Teacher Participants

*Grade Level:* 8
*Strand:* Teaching and Learning in MATHEMATICS

**A13 Examining Model Curriculum in Mathematics: 5th Grade & Special Education**
*Presented by:* (CO)²RES Teacher Participants

*Grade Level:* 5 & Special Education
*Strand:* Teaching and Learning in MATHEMATICS
Block B: 11:00 – 11:50 am

**B1**  Weaving STEM, Standards, & Inquiry Based Learning for the Real Pre-K Class: Connecting STEM & Ohio’s Preschool Standards Through Inquiry Based Learning for Today’s Preschooler *(LIMIT 20)*

*Presented by:* Melissa Romero, Lourdes University  
Christine Knaggs, Lourdes University  

*Grade Levels:* PreK - 4  
*Room:* BA 1002  
*Strand:* Putting Creativity to Work: Teaching STEM With Innovation

**B2 & A2**  A Smorgasbord of Active Learning Tools: Appetizers, Entrees, & Desserts *(Double Session – Block A & B: 10:00 – 11:50 AM)*

*Presented by:* Chris Boudrie, Lourdes University  

*Grade Levels:* College  
*Room:* BA 1000  
*Strand:* Inquiry in the College Classroom: Enhancing the Undergraduate Experience

**B3**  Teaching Simple Machines and Force and Motion using LEGO

*Presented by:* Ivery Toussant, Jr., LEGO Education  

*Grade Level:* PreK - 4, 5 - 8, 9 - 12  
*Room:* BA 117  
*Strand:* Putting Creativity to Work: Teaching STEM With Innovation

**B4 & A4**  Using Augmented Reality to Teach Forces and Motion *(Double Session – Blocks A & B: 10:00 – 11:50 am)*

*Presented by:* Rick Worch, Bowling Green State University  
Lan Li, Bowling Green State University  

*Grade Levels:* 5 - 8  
*Room:* BA 115  
*Strand:* Integrating Technology in the Classroom

**B5 & A5**  Explore! Plate Tectonics *(Double Session – Blocks A & B: 10:00 – 11:50 am)*

*Presented by:* Davida Buehler, The Geological Society of America  

*Grade Levels:* 5 - 8  
*Room:* BA 114  
*Strand:* Teaching and Learning in SCIENCE

**B6 & A6**  Get the “Scoop on Soils”! Free Lesson Plans and More for K-4 Soil Study *(Double Session – Blocks A & B: 10:00 – 11:50 am)*

*Presented by:* Jodi Haney, Bowling Green State University  

*Grade Levels:* PreK - 4  
*Room:* BA 110  
*Strand:* Teaching and Learning in SCIENCE
B7 The University of Toledo ACS STEMM Summer Camp

Presented by: Christina Onyskiw, The University of Toledo
Edith Kippenhan, The University of Toledo

Grade Levels: 9 - 12

Strand: STEM in the Community: Thinking Outside the Classroom

Room: BA 103


Presented by: Sandra Wilder, Bio-Med Science Academy

Grade Levels: 9 - 12

Strand: Teaching and Learning in MATHEMATICS

Room: BA 101

B9 Apps for Science Content, Creation, Connecting, and Collaborating

& A9 (Double Session – Block A & B: 10:00 – 11:50 AM)

Presented by: Leah LaCrosse, Huron City Schools

Grade Levels: PreK - 4, 5 - 8, 9 - 12

Strand: Integrating Technology in the Classroom

Room: BA 1007


Presented by: Jon Darkow, Seneca East Local Schools

Grade Levels: 5 - 8, 9 - 12, College

Strand: Putting Creativity to Work: Teaching STEM With Innovation

Room: BA 2001

B11 What incorporates STEM, gets students excited, students like it because it is fun and hands-on, and it allows students to think outside the box? ROBOTICS!!!!

Presented by: Rob Smith, DEPCO, LLC

Grade Level: PreK - 4, 5 - 8, 9 - 12

Strand: Putting Creativity to Work: Teaching STEM With Innovation

Room: OLSC 117

B12 Examining Model Curriculum in Mathematics: 3rd & 4th Grade

Presented by: (CO)²RES Teacher Participants

Grade Level: 3 - 4

Strand: Teaching and Learning in MATHEMATICS

Room: OLSC 119

B13 Examining Model Curriculum in Mathematics: 7th Grade

Presented by: (CO)²RES Teacher Participants

Grade Level: 7

Strand: Teaching and Learning in MATHEMATICS

Room: OLSC 120
Block C: 12:50 – 1:40 pm

C1  The Chemistry of Art (LIMIT 15)  
Presented by: Elizabeth Wise, Lourdes University  
Grade Levels: 5 - 8, 9 - 12, College  
Strand: STEM in the Community: Thinking Outside the Classroom  
Room: BA 1002

C2  Meeting The Challenges of Beginning STEM Majors - It’s All About Engagement  
Presented by: Andy Jorgensen, The University of Toledo  
Grade Levels: College  
Strand: Inquiry in the College Classroom: Enhancing the Undergraduate Experience  
Room: BA 1000

C3  Explicit Enhancement Tools to Facilitate STEM Content Acquisition (LIMIT 20)  
Presented by: Sekahr Pindiprolu, The University of Toledo  
Grade Levels: PreK - 4, 5 - 8, 9 - 12  
Strand: Putting Creativity to Work: Teaching STEM With Innovation  
Room: BA 117

C4  Population Comparisons in Aphid Resistant and Non-Aphid Resistant Soybeans  
Presented by: Heather Bryan, Education Projects & Partnerships  
Jane Hunt, Education Projects & Partnerships  
Grade Levels: 5 - 8, 9 - 12  
Strand: Teaching and Learning in SCIENCE  
Room: BA 115

C5 & D5  Explore! Rocks Using Inquiry-Based Learning (Double Session – Blocks C & D: 12:50 – 2:40 pm)  
Presented by: Davida Buehler, The Geological Society of America  
Grade Levels: 5 - 8, 9 - 12  
Strand: Teaching and Learning in SCIENCE  
Room: BA 114

C6  Using Fossils to Engage Students in Science Learning  
Presented by: Peg Yacobucci, Bowling Green State University/Paleontological Society  
Grade Levels: PreK - 4, 5 - 8  
Strand: Teaching and Learning in SCIENCE  
Room: BA 112

C7  Comparing Years 1, 2, and 3 of Strategies Modeling and Reading Together Through Integrating Science (SMARTTIS)  
Presented by: Andrea Milner, Adrian College  
Vanessa Morrison, Adrian College  
Grade Levels: PreK - 4  
Strand: Putting Creativity to Work: Teaching STEM With Innovation  
Room: BA 110
Block C: 12:50 – 1:40 pm continued

C8  I Really Do Study and Now I'm Starting To Get It
   Presented by: Debra Bercher, Lourdes University
   Grade Levels: 5 - 8, 9 - 12, College
   Strand: Teaching and Learning in SCIENCE
   Room: BA 103

C9  Teach Your Students to Think Using Programming
   Presented by: Amy Contos, St. Kateri Catholic Academy
   Grade Levels: 2 & up
   Strand: Integrating Technology in the Classroom
   Room: BA 101

C10 Watershed Dynamics for 21st Century Learners
   Presented by: Jon Darkow, Seneca East Local Schools
   Kathy Mohr, North Central Ohio Educational Service Center
   Beth Diesch, Seneca Soil & Water Conservation District
   Grade Level: 5 - 8, 9 - 12
   Strand: STEM in the Community: Thinking Outside the Classroom
   Room: BA 1007

C11 Help Needed for Building Student Research Skills: NOW!
   Presented by: Judith Tucker, NWOET
   Grade Level: 5 - 8, 9 - 12, College
   Strand: Integrating Technology in the Classroom
   Room: BA 2001

C12 Moving into the New Ohio Learning Standards: Let’s Talk About Motion!
   & D12 (Double Session – Blocks C & D: 12:50 – 2:40 pm)
   Presented by: Mikell Lynne Hedley, ODE Network Leader
   Elizabeth Buckholtz, Toledo Public Schools
   Janet Struble, ODE Network Leader
   Grade Levels: 5 - 8
   Strand: Teaching and Learning in SCIENCE
   Room: BA 2003

C13 A Forensics Approach to STEM
   Presented by: Cynthia Molitor, Lourdes University
   Grade Levels: 3 - 12, College
   Strand: Putting Creativity to Work: Teaching STEM With Innovation
   Room: OLS C 117
C14 Examining Model Curriculum in Mathematics: Kindergarten
Presented by: (CO)^2RES Teacher Participants
Grade Level: Kindergarten
Strand: Teaching and Learning in MATHEMATICS
Room: OLSC 106

C15 Model Curriculum in Mathematics: 3rd Grade
Presented by: (CO)^2RES Teacher Participants
Grade Level: 3
Strand: Teaching and Learning in MATHEMATICS
Room: OLSC 121

C16 Examining Model Curriculum in Mathematics: 6th Grade
Presented by: (CO)^2RES Teacher Participants
Grade Level: 6
Strand: Teaching and Learning in MATHEMATICS
Room: OLSC 119

C17 Examining Model Curriculum in Mathematics: 9th – 12th Grade
Presented by: (CO)^2RES Teacher Participants
Grade Level: 9 - 12
Strand: Teaching and Learning in MATHEMATICS
Room: OLSC 120
Block D: 1:50 – 2:40 pm

D1  STEM Approach to Blended Learning
   Presented by: Marcy Raymond, Reynoldsburg City Schools
   Grade Levels: 9 - 12, College
   Room: BA 1002
   Strand: Putting Creativity to Work: Teaching STEM With Innovation

D2  Did You See/Hear What I Saw/Heard?!
   Presented by: Raymond Heitger, Bowling Green State University
                 Andrea Milner, Adrian College
   Grade Levels: College
   Room: BA 1000
   Strand: Inquiry in the College Classroom: Enhancing the Undergraduate Experience

D3  Macroinvertebrates: Water Quality Indicators
   Presented by: Dennis Clement, Ohio EPA, OEE
   Grade Levels: 5 - 8, 9 - 12
   Room: BA 117
   Strand: STEM in the Community: Thinking Outside the Classroom

D4  COSI Interactive Video Conferencing - Science Delivered at the Speed of Light!
   Presented by: Kurt Huffman, COSI (Center of Science and Industry)
                 Jessica Teng, COSI (Center of Science and Industry)
                 Jordan Rader, COSI (Center of Science and Industry)
   Grade Levels: PreK - 4, 5 - 8, 9 - 12
   Room: BA 115
   Strand: Integrating Technology in the Classroom

D5  Explore! Rocks Using Inquiry-Based Learning (Double Session – Blocks C & D: 12:50 – 2:40 pm)& C5
   Presented by: Davida Buehler, The Geological Society of America
   Grade Levels: 5 - 8, 9 - 12
   Room: BA 114
   Strand: Teaching and Learning in SCIENCE

D6  What’s Different in the New Learning Standards for Mathematics (Double Session – Block D & E: 1:50 – 3:40 PM)& E6
   Presented by: Annika Moore, Ohio Department of Education
   Grade Levels: 5 - 8
   Room: BA 112
   Strand: Teaching and Learning in MATHEMATICS

D7  Who is that Lady, and What Does She Want?
   Presented by: Jennifer Elsworth, Metroparks of the Toledo Area
   Grade Levels: PreK - 4, 5 - 8
   Room: BA 110
   Strand: Teaching and Learning in SCIENCE
Block D: 1:50 – 2:40 pm continued

D8  Science for Upper Elementary Kids with Fun and Purpose!

*Presented by:* Heather Janes, Lake Middle School

*Grade Levels:* 5 - 8

*Strand:* Teaching and Learning in SCIENCE

Room: BA 103

D9  A Tail of Two Homework Programs: Advanced Technologies Utilized at The University of Toledo

*Presented by:* Kristi Mock, The University of Toledo

*Grade Levels:* 9 - 12, College

*Strand:* Integrating Technology in the Classroom

Room: BA 101

D10  Stone Laboratory - OSU's Lake Erie Island Campus for Education and Outreach

*Presented by:* Susan Bixler, Franz Theodore Stone Laboratory

Angela Greene, Franz Theodore Stone Laboratory

*Grade Levels:* 5 - 8, 9 - 12, College

*Strand:* STEM in the Community: Thinking Outside the Classroom

Room: BA 1007

D11  Awesome FREE INFOhio Science Resources — One Returns, Two New

*Presented by:* Judith Tucker, NWOET

*Grade Levels:* 5 - 8, 9 - 12

*Strand:* Teaching and Learning in SCIENCE

Room: BA 2001

D12 & E12  Moving into the New Ohio Learning Standards: Let's Talk About Motion!

(Double Session – Block C & D: 12:50 – 2:40 PM)

*Presented by:* Mikell Lynne Hedley, ODE Network Leader

Elizabeth Buckholtz, Toledo Public Schools

Janet Struble, ODE Network Leader

*Grade Levels:* 5 - 8

*Strand:* Teaching and Learning in SCIENCE

Room: BA 2003

D13  Examining Model Curriculum in Mathematics: 1st Grade

*Presented by:* (CO)²RES Teacher Participants

*Grade Level:* 1

*Strand:* Teaching and Learning in MATHEMATICS

Room: OLSC 106

D14  Examining Model Curriculum in Mathematics: 4th Grade

*Presented by:* (CO)²RES Teacher Participants

*Grade Level:* 4

*Strand:* Teaching and Learning in MATHEMATICS

Room: OLSC 121
E1  Collaborative Action Research Project Part II: Visualization and Processing Speed
Differences in STEM and Literacy Education: When Does Slow Become Good?

Presented by: Richard Oldrieve, Cleveland State University
Cynthia Bertelsen, Bowling Green State University

Grade Levels: PreK - 4
Room: BA 1002
Strand: Putting Creativity to Work: Teaching STEM With Innovation

E2  Growing Ohio

Presented by: Jane Hunt, Education Projects & Partnerships
Heather Bryan, Education Projects & Partnerships

Grade Levels: 5 - 8, 9 - 12
Room: BA 117
Strand: Teaching and Learning in SCIENCE

E3  Immersion of Learning - Take a Field Trip That Immerses Students in STEM Education

Presented by: Kurt Huffman, COSI (Center of Science and Industry)
Robin Dungan, COSI (Center of Science and Industry)

Grade Levels: 5 - 8, 9 - 12
Room: BA 115
Strand: STEM in the Community: Thinking Outside the Classroom

E4  Claim, Evidence, Reasoning

Presented by: Elizabeth Buckholtz, Toledo Public Schools

Grade Levels: 5 - 8, 9 - 12
Room: BA 114
Strand: Teaching and Learning in SCIENCE

E5  Exercise Science: What does it take to be a world-class marathon runner?

Presented by: Frederick Andres, Bowling Green State University
Matt Laurent, Bowling Green State University

Grade Levels: 5 - 8, 9 - 12, College
Room: BA 110
Strand: Teaching and Learning in SCIENCE

E6  What’s Different in the New Learning Standards for Mathematics (Double Session – Block D & E: 1:50 – 3:40 PM)

Presented by: Annika Moore, Ohio Department of Education

Grade Levels: 5 - 8
Room: BA 112
Strand: Teaching and Learning in MATHEMATICS
Block E: 2:50 – 3:40 pm continued

E7 Engaging the Technologically Augmented Student

Presented by: Jerry Schnepp, Bowling Green State University

Paul Cesarini, Bowling Green State University

Grade Levels: 9 - 12, College

Strand: Integrating Technology in the Classroom

Room: BA 103

E8 Differentiated Instruction in Lesson Planning

Presented by: Amy Biggs, Mount Vernon Nazarene University

Amanda Barrell, Mount Vernon Nazarene University

Grade Levels: 5 - 8

Strand: Putting Creativity to Work: Teaching STEM With Innovation

Room: BA 101

E9 Examining Model Curriculum in Mathematics: 2nd Grade

Presented by: (CO)²RES Teacher Participants

Grade Level: 2

Strand: Teaching and Learning in MATHEMATICS

Room: OLSC 106

E10 Examining Model Curriculum in Mathematics: 5th Grade

Presented by: (CO)²RES Teacher Participants

Grade Level: 5

Strand: Teaching and Learning in MATHEMATICS

Room: OLSC 121
Overhauling the Transmission Model: Teaching your students to be active meaning makers

The traditional “bunch o’ facts” model of education applied to STEM subjects consists of filling students with information about decimals and variables, cells and minerals. The process typically relies on lectures, worksheets, grades, tests, and homework. But our challenge is to help students think like scientists and mathematicians so they can actively make sense of ideas – and, ideally, to take pleasure in doing so. In his keynote address, Alfie Kohn invites us to reflect on how we can bring about just such a shift in our classrooms.


Kohn has been described by Time magazine as “perhaps the country’s most outspoken critic of education's fixation on grades [and] test scores.” His criticisms of competition and rewards have helped to shape the thinking of educators – as well as parents and managers – across the country and abroad. He has appeared on numerous TV and radio programs, including the “Today” show and two appearances on “Oprah.” He lectures widely at universities and to school faculties, parent groups, and corporations, as well as speaking at staff development seminars and keynoting national education conferences. Kohn’s articles include “Turning Children into Data” in Education Week; “Five Reasons to Stop Saying Good Job” in Young Children; and “The Case Against Grades” in Educational Leadership.
Inquiry in the College Classroom: Enhancing the Undergraduate Experience

Double Session – Block A & B: 10:00 – 11:50 AM

A2  A Smorgasbord of Active Learning Tools: Appetizers, Entrees, & Desserts
& B2  Using a menu approach, we will sample a variety of the tools I use to tempt the appetite for active learning of the contemporary student. We will explore ways to insert new flavors into a busy and demanding course schedule from ice-breakers (‘appetizers’) to major projects (‘entrees’) to summary. Participants can direct which ‘menu items’ we focus upon.

Presented by: Chris Boudrie, Lourdes University

Grade Level: College

Room: BA 1000

Block C: 12:50 – 1:40 PM

C2  Meeting The Challenges of Beginning STEM Majors - It’s All About Engagement

Examples of engagement in large general chemistry classes will be detailed using videos and data from grades and student surveys.

Presented by: Andy Jorgensen, The University of Toledo

Grade Level: College

Room: BA 1000

Block D: 1:50 – 2:40 PM

D2  Did You See/Hear What I Saw/Heard?!

A problem arises when students in a methods class display incorrect content. We will be leading a discussion about how to handle this situation. Does a methods course become a content course? Is it ignored? Do we jump down the throat of the content instructor? Hopefully a spirited discussion will transpire.

Presented by: Raymond Heitger, Bowling Green State University
Andrea Milner, Adrian College

Grade Level: College

Room: BA 1000
Integrating Technology in the Classroom

Block A: 10:00 – 10:50 AM

A1 Screencasts and Video Tutorials for Online and Face-to-Face Classes (LIMIT 20)
In this presentation we will give an overview of how to create narrated videos for your courses, similar to Kahn Academy videos. We will discuss some popular applications for creating videos on your computer or iPad as well as strategies and the pedagogical benefits of creating and using these types of whiteboard videos. Finally, we will provide an opportunity for you to try making your own video using an iPad. Bring your own iPad if you have one!
Presented by: Kate Dellenbusch, Bowling Green State University
Peter Blass, Bowling Green State University
Grade Levels: 5 - 8, 9 - 12, College
Room: BA 1002

A10 Empowered by Google: Statistics in Real Time
This session will explore one method of utilizing Google in order to teach Statistics. While in the session, participants will be: (1) Taken through the process from beginning, collecting data, to end, analyzing the data from both the teachers and a students perspective. (2) Discover the capabilities of Google Spreadsheets and how to utilize the technology in the classroom. This project has been used in an 8th grade classroom, but is adaptable for various levels.
Presented by: Stephanie Buckenmeyer, Anthony Wayne Local Schools
Lori Williams, Anthony Wayne Local Schools
Grade Levels: 5 - 8, 9 - 12
Room: BA 2001

Double Sessions – Block A & B: 10:00 – 11:50 AM

A4 & B4 Using Augmented Reality to Teach Forces and Motion
This is a hands-on experience using augmented reality to learn about forces and motion with roller coasters. Augmented reality is a digital technology that enhances learners’ perceptions by enabling them to simultaneously experience physical and digital reality. We will employ augmented reality to enhance the participants’ learning experience by providing them with digital media to replay their hands-on experiences with roller coasters with an enhanced tutorial overlay.
Presented by: Rick Worch, Bowling Green State University
Lan Li, Bowling Green State University
Grade Levels: 5 - 8
Room: BA 115
A9 **Apps for Science Content, Creation, Connecting, and Collaborating**

This presentation will highlight apps that can be utilized in Math, Science, and Engineering to support student learning. Apps for managing work flow, documenting learning, exploring science, and creating projects to show understanding will be discussed. Simple ways to utilize the iPad for labs will also be addressed.

*Presented by:* Leah LaCrosse, Huron City Schools

*Grade Levels:* PreK - 4, 5 - 8, 9 - 12

*Room:* BA 1007

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**Block C: 12:50 – 1:40 PM**

C9 **Teach Your Students to Think Using Programming**

Check out some of the key ideas behind programming in Scratch, explore some possible tasks that 4 – 6 grade students could be given to encourage problem solving and higher level thinking, and find out how students feel Scratch is making a difference to their learning.

*Presented by:* Amy Contos, St. Kateri Catholic Academy

*Grade Levels:* 2 & up

*Room:* BA 101

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C11 **Help Needed for Building Student Research Skills: NOW!**

Attend this session to learn about two FREE tools available through INFOhio to help build research skills of today’s students and supports the emphasis on inquiry and research in Ohio’s New Learning Standards. We’ll explore Go! Ask, Act, Achieve, for grades 4-10 by presenting the research process as a series of small steps. This tool for beginning researchers helps with skills needed to manage a project and introduces a variety of INFOhio digital resources as well as websites with mind-mapping tools, note-taking strategies, and presentation ideas. The second tool, for grades 11 and 12, Research 4 Success is a blended-learning course, presented in six modules, that teaches juniors and seniors rigorous research skills needed for college and careers.

*Presented by:* Judith Tucker, NWOET

*Grade Levels:* 5 - 8, 9 - 12, College

*Room:* BA 2001
Block D: 1:50 – 2:40 PM

D4  COSI Interactive Video Conferencing - Science Delivered at the Speed of Light!

COSI Interactive Videoconferencing delivers STEM education to students with unforgettable, hands-on activities and demonstrations all across the United States and Canada. From an INTERACTIVE LIVE KNEE SURGERY, to a KIDNEY TRANSPLANT for older students all the way down to an INTERACTIVE SIMPLE MACHINES program where students get to identify simple machines with our presenters, these programs are all aligned with the Ohio New Revised Science Standards. They are also interactive and each classroom receives a STEM kit of materials. Learn more about these programs and try out the activities that we present to the students.

Presented by: Kurt Huffman, COSI (Center of Science and Industry)
Jessica Teng, COSI (Center of Science and Industry)
Jordan Rader, COSI (Center of Science and Industry)

Grade Levels: PreK - 4, 5 - 8, 9 - 12
Room: BA 115

D9  A Tail of Two Homework Programs: Advanced Technologies Utilized at The University of Toledo

Technology was introduced into the classroom as a way to help hold students accountable. It was utilized as a way to make sure that students were practicing problems without the need for extensive hours of hand grading and also became useful in giving instant feedback to the students about their understanding of the material. Advances in technology have created ways to move beyond these benefits. Traditional online homework systems are beginning to move toward adaptive learning. These new programs have many advantages. Tutorial problems help students understand concepts by working through problems instead of just passively reading. Lessons tailored to individual students allows them to focus on what will benefit them the most as opposed to spending time on lessons that are too easy or fighting with material that they are not yet ready for. Finally, with the ability to test retention, they help students learn that the old pattern of learning for the lesson or the test and forgetting is not beneficial. The University of Toledo both ALEKS and Mastering Chemistry are used as examples of such technologies.

Presented by: Kristi Mock, The University of Toledo

Grade Levels: 9 - 12, College
Room: BA 101

Block E: 2:50 – 3:40 PM

E7  Engaging the Technologically Augmented Student

While personal technology affords access to a multitude of internet resources, it also provides persistent connection to social media, games, entertainment, and other diversions. Students with smartphones, tablets, and laptops can easily become distracted during class. How can teachers keep these students engaged? In this presentation, we introduce recommendations to deal with this daunting challenge. Moreover, we offer suggestions to leverage students’ personal technology to enhance the classroom experience.

Presented by: Jerry Schnepp, Bowling Green State University & Paul Cesarini, Bowling Green State University

Grade Levels: 9 - 12, College
Room: BA 103
Putting Creativity to Work: Teaching STEM With Innovation

Block A: 10:00 – 10:50 AM

A8  G3: Game Design in the Classroom
   Teachers and instructors have been playing games for years as a method of instruction. How does today's emerging game based learning strategies connect to 21st Century skills? The G3: Game Design in the Classroom presentation will provide an overview of game-based learning, gamification, game design, web-based game design tools, and reasons why we should play more games. A brief look at the Zulama Game Academy and curriculum will be presented.
   Presented by: Dean Goon, Mount Vernon Nazarene University/Makeadent Educational Consulting
   Grade Levels: 5 - 8, 9 - 12, College
   Room: BA 101

A11  CJ STEMM - An Innovative Multifaceted Approach to K-12 STEM Education in the Classroom and Beyond
   The mission of the CJ STEMM initiative is to empower students to serve the world. Inside and, perhaps more significantly outside, the classroom, we offer opportunities for middle and high school students and their families to interact with, and learn from, practicing STEM professionals who serve the world, and know and apply the science, technology, engineering, and math content that teachers strive to teach and students are challenged to make sense of. Learn from the CJ STEMM Coordinator and partner middle grade science teacher about the program elements of CJ STEMM and three nationally researched STEM education quality rubrics.
   Presented by: Meg Draeger, Chaminade Julienne Catholic High School
   Christine Evans, St. Albert the Great School
   Grade Levels: 5 - 8, 9 - 12
   Room: OLSC 117

Block B: 11:00 – 11:50 AM

B1  Weaving STEM, Standards, & Inquiry Based Learning for the Real Pre-K Class: Connecting STEM & Ohio’s Preschool Standards Through Inquiry Based Learning for Today’s Preschooler (LIMIT 20)
   This presentation will demonstrate how to connect Ohio's preschool standards, STEM through practical Inquiry Based Learning strategies.
   Presented by: Melissa Romero, Lourdes University
   Christine Knaggs, Lourdes University
   Grade Levels: PreK - 4
   Room: BA 1002
B3 Teaching Simple Machines and Force and Motion using LEGO

Hands-on session where the least-science oriented educator will feel confident learning how to teach pulleys, levers, gears, wheels and axles, force and motion and a little energy using a wonderful manipulative-LEGO. Focus for this session is gears.

Presented by: Ivery Toussant, Jr., LEGO Education

Grade Levels: PreK - 4, 5 - 8, 9 - 12

Room: BA 117


Technology can be more than bells and whistles as an instructional aid. Modern software allows students to construct computer models of complex interactions that demonstrates important concepts including, diversity, thresholds, and feedback loops. Students can have a concrete, creative, and interactive experience investigating complex systems such as climate change, forest fires, natural selection, sugar metabolism, and neighborhood segregation. Modeling systems allows students to investigate the interconnections of "big ideas" in a visual way.

Presented by: Jon Darkow, Seneca East Local Schools

Grade Levels: 5 - 8, 9 - 12, College

Room: BA 2001

B11 What incorporates STEM, gets students excited, students like it because it is fun and hands-on, and it allows students to think outside the box? ROBOTICS!!!!

Robotics is the buzz word right now! Students are energized as they immerse themselves in this fun and exciting environment that reinforces all the aspects of STEM education. What is holding you back from introducing robotics to your students? This presentation will show you how to easily implement robotics into your classroom whether you are in elementary, middle, or high school. We will discuss what tools are available to you and what you will need to get started. After reviewing our STEM online curriculum you will have the option to experience the hands on robot activities. Information on in-class competitions and local competitions will be made available to you. This will include costs to enter, how to enter, what to expect and what tools are available to help you prepare for competition.

Presented by: Rob Smith, DEPCO, LLC

Grade Levels: PreK - 4, 5 - 8, 9 - 12

Room: OLSC 117
Block C: 12:50 – 1:40 PM

C3  Explicit Enhancement Tools to Facilitate STEM Content Acquisition (LIMIT 20)

Given the abstract nature of the STEM content and the non-observable nature of the underlying processes, teachers need to use explicit enhancements to re-present information in an unambiguous way. This is especially paramount for students with high incidence disabilities and for students who are at-risk for academic failure. In this presentation, evidence-based strategies/tools that teachers can use to enhance STEM instruction are discussed.

Presented by: Sekahr Pindiprolu, The University of Toledo
Grade Levels: PreK - 4, 5 - 8, 9 - 12
Room: BA 117

C7  Comparing Years 1, 2, and 3 of Strategies Modeling and Reading Together Through Integrating Science (SMARTTIS)

This presentation will share the results of a comparison of three years of a summer camp component of a larger study: “Strategies Modeling and Reading Together Through Integrating Science” (SMARTTIS). This research centers around the integration of science and reading, teacher beliefs, student content knowledge, and student attitudes. Curriculum reform, state and national standards, and research have argued for cross-curricular integration among different subject areas, more specifically in science and reading. Classroom teachers play a critical role in the successful implementation of reform and research-based best practices; and their beliefs strongly influence their practice.

Presented by: Andrea Milner, Adrian College
Vanessa Morrison, Adrian College
Grade Levels: PreK - 4
Room: BA 110

C13  A Forensics Approach to STEM

CSI and forensics can spark students’ interest in science. Ideas will be presented from the crime scene to qualitative and quantitative testing. Quantitative tests allow students to apply their math skills, adding to an appreciation for math and science.

Presented by: Cynthia Molitor, Lourdes University
Grade Levels: 3 - 12, College
Room: OLSC 117

Block D: 1:50 – 2:40 PM

D1  STEM Approach to Blended Learning

Blended learning combines two things in a way that makes each better than they are on their own: teachers’ talent and technology tools. Blended learning allows teachers to do what they do best – work directly and closely with individual students and small groups – by harnessing the adaptive power and precision of technology.

Presented by: Marcy Raymond, Reynoldsburg City Schools
Grade Levels: 9 - 12, College
Room: BA 1002
Block E: 2:50 – 3:40 PM

**E1 Collaborative Action Research Project Part II: Visualization and Processing Speed Differences in STEM and Literacy Education: When Does Slow Become Good?**

This Collaborative Action Research project is a continuation from the work we presented last year. We would like to again encourage conference attendees to voluntarily stop by our room throughout the day to test their 3-D visualization ability and cognitive processing speed. It will take approximately 20 minutes for individuals to complete both tests on an Apple ipad. During the last session of the day, we will present our findings. Individuals who volunteer to participate in this collaborative action research project will be entered into a raffle.

*Presented by:* Richard Oldrieve, Cleveland State University
Cynthia Bertelsen, Bowling Green State University

*Grade Levels:* PreK - 4

*Room:* BA 1002

**E8 Differentiated Instruction in Lesson Planning**

Differentiated instruction has many values to student learning. When used throughout instruction, students are exposed to a variety of activities and objectives. The key is using curriculum that is inherently diversified therefore making differentiated instruction a natural part of teaching. This presentation will feature excerpts from three graduate students’ lesson plans.

*Presented by:* Amy Biggs, Mount Vernon Nazarene University
Amanda Barrell, Mount Vernon Nazarene University

*Grade Levels:* 5 - 8

*Room:* BA 101
**STEM in the Community: Thinking Outside the Classroom**

**Block A: 10:00 – 10:50 AM**

**A7 Zoo Animals Helping STEM Learning**

The Toledo Zoo animals are excellent living examples of how science and technology is important. Join the Zoo and learn about cool ways the Zoo uses science and technology to help animals and how animals can help your students learn!

*Presented by:* Josh Minor, Toledo Zoo  
Nicole Syrek, Toledo Zoo  
Jerran Orwig, Toledo Zoo

*Grade Levels:* PreK - 4, 5 - 8  
*Room:* BA 103

**Block B: 11:00 – 11:50 AM**

**B7 The University of Toledo ACS STEM Summer Camp**

Exposing educators to a different way of reaching out to local high school students. Help students gain an understanding on what STEM knowledge can lead them to. Use summer camp curricula and concepts to focus on teaching the students how to balance a STEM education with everyday life. Applying the information taught in a classroom to an industrial or laboratory setting.

*Presented by:* Christina Onyskiw, The University of Toledo  
Edith Kippenhan, The University of Toledo

*Grade Levels:* 9 - 12  
*Room:* BA 103

**Block C: 12:50 – 1:40 PM**

**C1 The Chemistry of Art (LIMIT 15)**

The general format of this introductory chemistry course for non-science majors will be described, a mini lecture will be presented, and salt tests done at the Toledo Museum of Art will be performed by attendees. The course applies basic principles of chemistry to the topics of color, paint, clay, glass, metals, photography, and art restoration.

*Presented by:* Elizabeth Wise, Lourdes University

*Grade Levels:* 5 - 8, 9 - 12, College  
*Room:* BA 1002
C10 Watershed Dynamics for 21st Century Learners

Our Watershed Dynamics project created flipped lessons and iPad app for collected physical, chemical, and biological samples for stream quality assessments. In this project, funded by an Ohio EPA OEEF grant, 8 educators collaborated creating a water quality assessment program. This presentation will review the curriculum that is freely available and easily accessible for all school districts. The curriculum integrated resources from the NSTA Press Watershed Dynamics, The GLOBE Program, and the Ohio Stream Quality Monitoring Program.

Presented by: Jon Darkow, Seneca East Local Schools
Kathy Mohr, North Central Ohio Educational Service Center
Beth Diesch, Seneca Soil & Water Conservation District

Grade Levels: 5 - 8, 9 - 12

Room: BA 1007

Block D: 1:50 – 2:40 PM

D3 Macroinvertebrates: Water Quality Indicators

Session will provide hands-on equipment use, calculations of cumulative index values, identifying preserved macroinvertebrates, and showing participants how their students or groups can become citizen scientists. Additional resources will be provided for follow-up and who to contact in your local area for additional help. Participants will also see/use a new application for compiling their field data on an iPad.

Presented by: Dennis Clement, Ohio EPA, OEE

Grade Levels: 5 - 8, 9 - 12

Room: BA 117

D10 Stone Laboratory - OSU’s Lake Erie Island Campus for Education and Outreach

Bring science alive for your students and yourself! Learn about our hands-on aquatic Workshop Field Trip Program for grades 4 - 12, summer class opportunities for high school juniors and seniors, college students, and of course professional development to enrich your teaching skills, all in an island setting.

Presented by: Susan Bixler, Franz Theodore Stone Laboratory
Angela Greene, Franz Theodore Stone Laboratory

Grade Levels: 5 - 8, 9 - 12, College

Room: BA 1007
Block E: 2:50 – 3:40 PM

**E3** Immersion of Learning - Take a Field Trip That Immerses Students in STEM Education

At COSI, the Center of Science and Industry, we invite field trip groups to have a learning experience that immerses them in STEM education. Through the 21st Century Learning Labs, students get to experience everything from a plant dissection, to a videoconferencing live knee surgery, to a lab experience that shows the effects of different drugs on neuronal communication! This presentation will showcase some of these components/activities and the different educational methods we use to teach our field trip groups.

**Presented by:** Kurt Huffman, COSI (Center of Science and Industry)
Robin Dungan, COSI (Center of Science and Industry)

**Grade Levels:** 5 - 8, 9 - 12

**Room:** BA 115
Teaching and Learning in MATH EM ATICS

Block A: 10:00 – 10:50 AM

A12 Examining Model Curriculum in Mathematics: 8th Grade
The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)²RES Teacher Participants
Grade Level: 8
Room: OLSC 119

A13 Examining Model Curriculum in Mathematics: 5th Grade & Special Education
The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)²RES Teacher Participants
Grade Level: 5 & Special Education
Room: OLSC 120

Block B: 11:00 – 11:50 AM

A successful integration of multiple disciplines may be achieved by adopting a strong belief that no content can truly stand alone without supporting or leaning on topics or applications spanning across several subjects or even the entire curriculum. This is most easily recognized in mathematics, for this discipline on its own can be seen as beautiful, but rather misplaced pieces, with no puzzle to complete. In a PBL environment, an integrated project was designed to effectively merge mathematics, literature, history, and technology, while strengthening the collaboration, communication, and presentation skills, essential for the 21st century. This was accomplished through the tale of “The Man Who Counted”, and his collection of mathematical adventures. This presentation offers a description of this project and how it was implemented and received in a sophomore class in a local STEM high school.

Presented by: Sandra Wilder, Bio-Med Science Academy
Grade Level: 9 - 12
Room: BA 101
B12  Examining Model Curriculum in Mathematics: 3rd & 4th Grade

The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)²RES Teacher Participants

Grade Level: 3 - 4 Room: OLSC 119

B13  Examining Model Curriculum in Mathematics: 7th Grade

The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)²RES Teacher Participants

Grade Level: 7 Room: OLSC 120
**Block C: 12:50 – 1:40 PM**

**C14 Examining Model Curriculum in Mathematics: Kindergarten**

The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

*Presented by:* (CO)²RES Teacher Participants  
*Grade Level:* Kindergarten  
*Room:* OLSC 106

**C15 Examining Model Curriculum in Mathematics: 3rd Grade**

The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

*Presented by:* (CO)²RES Teacher Participants  
*Grade Level:* 3  
*Room:* OLSC 121

**C16 Examining Model Curriculum in Mathematics: 6th Grade**

The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

*Presented by:* (CO)²RES Teacher Participants  
*Grade Level:* 6  
*Room:* OLSC 119

**C17 Examining Model Curriculum in Mathematics: 9th – 12th Grade**

The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

*Presented by:* (CO)²RES Teacher Participants  
*Grade Level:* 9 - 12  
*Room:* OLSC 120
Double Session – Block D & E: 1:50 – 3:40 PM

D6 & E6 What’s Different in the New Learning Standards for Mathematics
Implementation of the New Learning Standards is in full force in schools around Ohio. The new standards for mathematics include standards for content as well as standards for mathematical practices. We need to teach our students both. In this session you will get information on the major instructional shifts in teaching mathematics. You will be introduced to a deep dive into a few of the eight mathematical practices and discuss how this might require a change in the design of lessons. You will be introduced to the Ohio Quality Review Rubric that can be used when deciding if current lessons are aligned to the new standards or as a guide to design new lessons.

Presented by: Annika Moore, Ohio Department of Education
Grade Levels: 5 - 8
Room: BA 112

Block D: 1:50 – 2:40 PM

D13 Examining Model Curriculum in Mathematics: 1st Grade
The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)²RES Teacher Participants
Grade Level: 1
Room: OLSC 106

D14 Examining Model Curriculum in Mathematics: 4th Grade
The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)²RES Teacher Participants
Grade Level: 4
Room: OLSC 121
Block E: 2:50 – 3:40 PM

E9  Examining Model Curriculum in Mathematics: 2nd Grade
The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)²RES Teacher Participants
Grade Level: 2
Room: OLSC 106

E10  Examining Model Curriculum in Mathematics: 5th Grade
The (CO)²RES sessions are led by grade level teams of teachers who participated in the program. These teachers designed and implemented Common Core aligned mathematics lessons. Each session will target specific grade level content from the Common Core State Standards (CCSS) for grades K-12. Presenters will share their experiences of learning about the CCSS and challenges associated with teaching new standards.

Presented by: (CO)²RES Teacher Participants
Grade Level: 5
Room: OLSC 121

The “Common Core for Reasoning and Sense Making” [(CO)²RES Elementary and (CO)²RES Secondary] programs are funded by the Ohio Board of Regents. The purpose of these programs is to familiarize teachers with the Common Core Standards and to support their growth in two content domains. Teachers participating in the program deeply explored researched based classroom practices, which led to the engagement of students in the Standards for Mathematical Practice.
Block A: 10:00 – 10:50 AM

A3 Helping Students Construct Models: Modeling Instruction in Physical Science

Have you heard about Modeling Instruction and wondered what it’s all about? Whiteboard sessions, Socratic questioning, and graphical analysis have been a part of my classroom since 2007. Come and participate in a unique hands-on, inquiry approach where misconceptions are confronted and students construct a series of carefully coordinated models to represent an observable event or concept.

**Presented by:** Mary Kate Hafemann, Ottawa Hills High School

**Grade Levels:** 9 - 12

**Room:** BA 117

Double Sessions – Block A & B: 10:00 – 11:50 AM

A5 & B5 Explore! Plate Tectonics

This workshop will present numerous inquiry-based activities for you to use in your classroom that will keep your students engaged throughout your plate tectonic lesson. Free plate tectonic resources are provided for each participant.

**Presented by:** Davida Buehler, The Geological Society of America

**Grade Levels:** 5 - 8, 9 - 12

**Room:** BA 114

A6 & B6 Get the "Scoop on Soils"! Free Lesson Plans and More for K-4 Soil Study

Elementary GLOBE is designed to introduce K-4 students to the study of Earth System Science. The complete instructional unit includes: (1) Science-based storybooks designed to introduce students to key concepts in water, soil, clouds, seasons, and Earth system studies. (2) Classroom learning activities complementing the science content covered in each storybook that are designed to further engage students in GLOBE’s 5 investigation areas (air, soil, water, life, and earth as a system). In this session, we will investigate the "Scoop on Soils" unit. Participants will learn through hands-on activities and interactive discussions. Free materials through GLOBE website and other related resources will be provided.

**Presented by:** Jodi Haney, Bowling Green State University

**Grade Levels:** PreK - 4

**Room:** BA 110
**Block C: 12:50 – 1:40 PM**

**C4**  **Population Comparisons in Aphid Resistant and Non-Aphid Resistant Soybeans**

Population estimation methods will be demonstrated using aphids on soybeans. Lesson plans for using soybeans in your classroom for population studies, algebra, and inquiry-based science will be highlighted. Sponsored by the Ohio Soybean Council.

*Presented by:* Heather Bryan, Education Projects & Partnerships  
Jane Hunt, Education Projects & Partnerships

*Grade Levels:* 5 - 8, 9 - 12  
*Room:* BA 115

**C6**  **Using Fossils to Engage Students in Science Learning**

Fossils provide a fascinating window into Earth's ancient past and are a great way to excite kids about scientific discovery. We’ll discuss hands-on activities using fossils that target general science skills and specific content standards in life and earth sciences. Every participant will receive lesson plans and resource guides.

*Presented by:* Peg Yacobucci, Bowling Green State University/Paleontological Society

*Grade Levels:* PreK - 4, 5 - 8  
*Room:* BA 112

**C8**  **I Really Do Study and Now I'm Starting To Get It**

"I really did study." How many times have teachers heard this statement from students after a poor performance on a test? Student perception of their mastery of content does not always match reality. Explore the strategies 3 students have used to improve their mastery of content and improve their self-monitoring to be more academically successful. Also explore the relationship between self-monitoring and post exam reflection. Finally, take a minute to examine your own teaching style as it influences self-monitoring and the goal of moving students from being novice learners toward becoming experts.

*Presented by:* Debra Bercher, Lourdes University

*Grade Levels:* 5 - 8, 9 - 12, College  
*Room:* BA 103
Double Sessions – Block C & D: 12:50 – 2:40 PM

C5 & D5 Explore! Rocks using Inquiry-Based Learning
Through a series of inquiry-based learning activities, teachers will walk away with a unit plan that will help their students learn the characteristics of rocks and how to identify rocks with ease. Additionally, the lessons include ties to plate tectonics, environments of formation, and geologic time.

Presented by: Davida Buehler, The Geological Society of America
Grade Levels: 5 - 8, 9 - 12
Room: BA 114

C12 & D12 Moving into the New Ohio Learning Standards: Let’s Talk About Motion!
Build your vehicle! Test the effects of force and mass on it as you engage in Project Based Science lessons teaching motion. These lessons, written in the 5-E Learning Model format, address the new Ohio Science Standards in Grade 5, but the concept activities can be used at any grade level.

Presented by: Mikell Lynne Hedley, ODE Network Leader
Elizabeth Buckholtz, Toledo Public Schools
Janet Struble, ODE Network Leader
Grade Levels: 5 - 8
Room: BA 2003

Block D: 1:50 – 2:40 PM

D7 Who is that Lady, and What Does She Want?
Learn how to use games, songs, and visuals to quickly focus your students’ attention in new situations, environments, and subject matter. Take home a CD.

Presented by: Jennifer Elsworth, Metroparks of the Toledo Area
Grade Levels: PreK - 4, 5 - 8
Room: BA 110

D8 Science for Upper Elementary Kids with Fun and Purpose!
This session will include discussion and presentations focused on science resources, inquiry, 21st century skills and their importance, and more!

Presented by: Heather Janes, Lake Middle School
Grade Levels: 5 - 8
Room: BA 103

D11 Awesome FREE INFOOhio Science Resources — One Returns, Two New
Participants will explore many features of the comprehensive resource returning for this school year — Science Online, grades 4-12, with articles on major topics and issues in science, math, and technology, plus diagrams, illustrations, experiments, videos, and more. New this year are two additional EBSCO products, Science Reference Center and Points of View Reference Center, grades 9-12. Attend this session to find out how these two additions will support Ohio's New Learning Standards with valuable resources in helping students analyze and evaluate non-fiction materials. Science Reference Center, for grades 4-12, contains full text for hundreds of science encyclopedias, reference books, and periodicals.

Presented by: Judith Tucker, NWOET
Grade Levels: 5 - 8, 9 - 12
Room: BA 2001
Block E: 2:50 – 3:40 PM

E2  Growing Ohio
An introduction to Ohio corn and how it can be used in the classroom to teach plant biology, environmental issues, and math. Teachers will receive lessons and materials used in the workshop. Sponsored by the Ohio Corn Marketing Program.

Presented by: Jane Hunt, Education Projects & Partnerships
Heather Bryan, Education Projects & Partnerships

Grade Levels: 5 - 8, 9 - 12

E4  Claim, Evidence, Reasoning
The claim, evidence, reasoning (CER) format provides students a framework for talking about, and writing about science concepts. Students learn important core science ideas and concepts when students engage in the cogitative processes involved in making a claim, citing the evidence that led them to make the claim, and explaining why the evidence supports the claim (McNeil & Krajcik, 2012.) The CER framework supports the new Common Core English Language Arts Standards for Science and Technical Subjects pertaining to Argumentation (Writing, Text Type and Purpose). The goal of this session is to introduce teachers to the CER framework and explore how to apply the CER framework in the classroom including: summarizing experimental results, answering research questions, and reviewing released OAA/OGT test questions.

Presented by: Elizabeth Buckholtz, Toledo Public Schools

Grade Levels: 5 - 8, 9 - 12

E5  Exercise Science: What does it take to be a world-class marathon runner?
The legendary marathon requires a blend of good genes, physiology, biomechanics, nutrition, training, and luck. Explore the lore of the marathon and the characteristics needed to run a competitive 42 km race. Follow the quest from the next hurdle...running a marathon in less than two hours.

Presented by: Frederick Andres, Bowling Green State University
Matt Laurent, Bowling Green State University

Grade Levels: 5 - 8, 9 - 12, College

Room: BA 117
Room: BA 114
Room: BA 110
Vendors

**Appold Planetarium**
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**Usborne Books & More Independent Educational Consultant**
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