

Northwest Ohio Symposium on Science,
Mathematics, and Technology Teaching

SATURDAY, NOVEMBER 6, 2010
HOSTED AT PENTA CAREER CENTER

Times have changed...



AND SO
HAS OUR
TEACHING!

<http://nwohiosymposium.org>

2010 NWO SYMPOSIUM
on Science, Mathematics, and Technology Teaching

Door Prize Raffle...an opportunity to win great resources for your classroom!

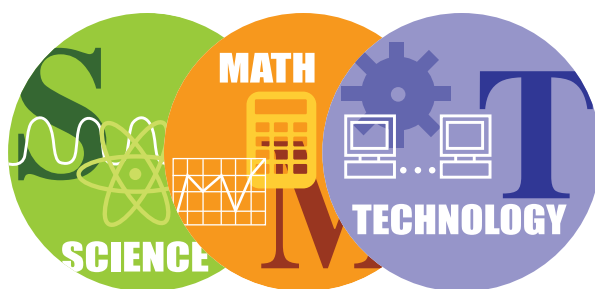
This year's raffle will take place at the end of the day (4:00 PM) in the registration area.

EVALUATION of Symposium

Please complete the online evaluation for the 2010 Symposium.
All who complete the survey will be entered into a drawing for a \$25 Amazon gift card.

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

<http://nwohiosymposium.org>



Northwest Ohio Symposium on Science,
Mathematics, and Technology Teaching

Welcome

We are delighted to once again welcome you to the 2010 Northwest Ohio Symposium on Science, Mathematics, and Technology Teaching. The symposium is sponsored by the Northwest Ohio Center for Excellence in STEM Education (NWO) and its partners throughout the region. This event offers a valuable opportunity for P-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 we had more than 500 attendees at 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 70 sessions. This year, vendors will again participate so as to keep educators abreast of new and exciting classroom materials and opportunities. Additionally, attendees will be allowed to examine new textbooks, pick up equipment for classroom use, and preview some of the new classroom technologies now available.

We are very grateful to Penta Career Center for hosting this year's symposium. We admire their new state-of-the-art building and the wonderful work that they are doing and we look forward to strengthening our partnership with them in advancing STEM education throughout the region. We invite you to pay special attention to their capabilities and programs while you are here.

We hope that you find the 2010 NWO Symposium on Science, Mathematics, and Technology Teaching to be an even more beneficial experience than last year. 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!

Dr. Bob Midden
Director
NWO/COSMOS, BGSU

Jessica Belcher
Assistant Director
NWO/COSMOS, BGSU

Michelle Leow Klinger
Assistant Director
NWO/COSMOS, BGSU



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Conference Agenda

- 7:30 – 8:30 Registration and Refreshments
8:00 – 8:50 Session A
9:00 – 9:50 Session B
10:00 – 10:50 Session C
11:00 – 11:50 Lunch #1
11:00 – 11:50 Session D
12:00 – 12:50 Lunch #2
12:00 – 12:50 Session E
1:00 – 1:50 Session F
2:00 – 2:50 Session G
3:00 – 3:50 Session H
3:50 – 4:00 Raffle Drawing

The limit for all rooms is 30 people, unless specified in the program (excluding 1106 & Auditorium).

Vendors open from 7:30 AM – 4:00 PM

Lunch catered by Penta Culinary Arts Program





Earth/Space Science



Mathematics



Pre-Service



General Science



Pedagogy



Technology



Life Science



Physical Science

Session A (8:00 am - 8:50 am)

A1 Explorations in Earth Science – Through Inquiry Based Activities from Toledo Botanical Garden (LIMIT 20)



Educators from TBG will share highlights from K-6 soil and water activities used in their field trips and classroom programs emphasizing techniques for tackling common misconceptions. Includes take home activities to use in your classroom and a raffle for one free field trip or in-class program.

Presented by: Diane Thurber, Toledo Botanical Garden

Jeanine Roberts, Toledo Botanical Garden

Grade Levels: PK-6

Room: 1106

A2 STEM – Teaching 21st Century Learners



Students are changing! Learn WHY educators need to change along with students and HOW to implement STEM in your classroom to facilitate a learning environment conducive to getting the most out of your 21st century learners. Applications of technology and tools will be demonstrated and practiced by attendees to be used in your classrooms. **Repeated in Session B3.**

Presented by: Kristie Reighard, Penta Career Center

Grade Levels: 4-12

Room: 3123

A3 Handheld Technology and the Golden Ratio (LIMIT 30)



We will explore the Golden Ratio by using the TI-Nspire handheld. The presentation will provide a classroom-ready example of a technology-driven lesson, while also exploring the broader topic of how to use technology effectively in teaching mathematics. Bring an Nspire or borrow one of 30 that the presenter will bring.

Presented by: Daniel Brahier, Bowling Green State University

Grade Levels: 7-12

Room: 2103

A4 Geospatial Technologies: Curriculum Tools for the 21st Century



Geospatial technologies are for the 21st century what computers were for the 20th century. According to the Department of Labor, they are the fastest growing career path in the US. This presentation will introduce you to remote sensing, GPS and GIS and how they can be incorporated into your curriculum. **Repeated in Session B5.**

Presented by: Mikell Lynn Hedley, The University of Toledo
Kevin P. Czajkowski, The University of Toledo

Grade Levels: 4-12, Faculty/Administrator

Room: 2105

A5 “Would You Swim in Shanty Creek?” PBS Lesson



How do you incorporate Project Based Science into your science curriculum? In our lesson, we used PBS principles with high school biology classes to investigate the effects of pollution on a stream that runs through the property of Start High School in Toledo, Ohio. Session will include one hands-on activity and lesson materials.

Presented by: Mary Lynn Muehleisen, Toledo Public Schools
Melissa Hooker, Toledo Public Schools

Grade Levels: 7-12

Room: 2107

A6 Making Technology Work for You in the Science Classroom



Ways to incorporate 21st Century Skills into your science classroom without feeling overwhelmed. Improving communication and engagement with students. Creative ideas to use in your classroom to engage your students in inquiry, collaboration, and authentic assessment.

Presented by: Kathy Laney, Hicksville High School

Grade Levels: 7-12

Room: 2109

A7 Teaching Elementary Linear Algebra with Technology



The presenter and some of his students will show how technology, in particular the computer algebra system Maple, is currently used in his Elementary Linear Algebra course. Several interactive learning objects to help with understanding the key concepts will be demonstrated. Our old friend $(1+\sqrt{5})/2$ will show up as an eigenvalue. **Continued in Session B8.**

Presented by: Friedhelm Schwarz, The University of Toledo
Kevin Gibbs, The University of Toledo
Luke Kwiatkowski, The University of Toledo
Dhruv Sengar, The University of Toledo

Grade Levels: Undergraduate, Faculty/Administrator (M, T, P)

Room: 2110



A8 The BEST Way to Teach Science Courses Online.



Becoming an Excellent Science Teacher (BEST): An online teacher preparation program has completed its third year. The success of a new course (EDSP610 Modern Concepts in Biology) supported by an NWO grant for curriculum modification will be shared. The pros and cons of running an online program will be discussed.

Presented by: Gwynne Rife, The University of Findlay
Julie McIntosh, The University of Findlay

Grade Levels: Faculty/Administrator

Room: 2111

A9 Jazzin' Up General College Chemistry



Course requirements such as a group research project, service learning, use of a computer interface in the lab, utilization of an online course management system, and inquiry-based learning were added to help make the course more interesting and applicable to everyday life, as well as to enhance students' critical thinking skills.

Presented by: Elizabeth Wise, Lourdes College

Grade Levels: 9-12, Undergraduate

Room: 2113

A10 Exploring Perimeter, Area, and Volume Relationships



How can you seat the most people with the fewest number of tables? How can you package chocolates with the least amount of wrapping paper? How much popcorn will a sheet of paper hold? We will explore these questions and others using hands-on activities that can be used in the elementary or middle school classroom.

Presented by: Sandra Zirkes, Bowling Green State University
Lindsey Haubert, Bowling Green State University
Diane Mott, Bowling Green State University

Grade Levels: PK-6

Room: 2115

A11 Using Singapore Math Model Drawing to Increase Math Achievement (LIMIT 30)



Asian countries have, for years, outscored Americans on math tests. Utilizing Singapore Model Drawing will enable your students to solve and understand abstract math problems with concrete models. I've found this strategy effective with third through seventh grade students and see definite benefits for extended response OAA questions. *Continued in Session B12.*

Presented by: Mike Godfrey, Eastwood Local Schools

Grade Levels: PK-8, Undergraduate, Faculty/Administrator

Room: 2117



A12 CSI in the Classroom (LIMIT 25)



Spark students' interest in science through CSI in the classroom. Simple tests on four powders will provide ideas on how to incorporate scientific exploration with the excitement of crime scene investigation. Chromatography and fingerprint analysis will also be discussed. **Continued in Session B13.**

Presented by: Cynthia Molitor, Lourdes College

Grade Levels: 4-12, Undergraduate

Room: 2118

A13 Have Fun with It! Easy & Free Games for All Subjects & Grade Levels



Tired of the same old lecture or review? Your students probably are, too! This session will show you how to easily turn your lectures, reviews, even tests into games which are fun and educational. Learning (and teaching) has never been so much fun! **Repeated in Session B14.**

Presented by: Julie Maier, Owens Community College

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 2119

A14 How Did They Use to Do That Before Calculators



Have you ever wondered how they used to find things like the square root of 630 in the age BC (Before Calculators)? We will take a look at ways some computations were done BC. These methods make interesting enrichment topics. And, for math people they can be fun. **Repeated in Session B15.**

Presented by: Judith McCrory, The University of Findlay

Grade Levels: 7-12, Undergraduate

Room: 2121

A15 Collaborative Concept Mapping in Calculus



Concept mapping is typically an individual enterprise where students take a set of terms and build a graphical representation of how those terms relate to one another. This presentation discusses how those individual concept maps can be leveraged into meaningful group discussions as sets of students construct a singular map. **Repeated in Session B16.**

Presented by: David Meel, Bowling Green State University

Grade Levels: 7-12, Undergraduate, Faculty/Administrator

Room: 2122

VENDOR SESSIONS

A16 Natural Continuum (LIMIT 15)

We do not need to “go outside” to “see” nature, we are nature! Experience three activities: astronomical, natural, geological. Each will reinforce the fact that nature is universal from the edge of the universe to the center of the earth.

Presented by: Helen Palochko, Outer Spaces

Grade Levels: PK-8

Room: 2123

A17 Let's Play Games! Making Learning Fun with Educational Games

Learning can be more fun using educational games – for all ages in all subject areas! Sample games, such as Smart Mouth, Sum Swamp, Math Noodlers, Spill Your Guts, Planet Quest, and many more, will be explained and demonstrated.

Presented by: Kay Hoane, Mother Hubbard's Learning Cupboard
Stephanie Wendt, Mother Hubbard's Learning Cupboard

Grade Levels: PK-6

Room: 2125



Session B (9:00 am - 9:50 am)

B1 Getting Hired as a New Teacher: What principals are looking for and how you can put your best foot forward



This will be a panel discussion followed by a short question & answer period with three principals from schools around the region. Find out what qualities principals are looking for in a new hire and what kinds of coursework and degrees are needed now. This is specifically designed with pre-service teachers in mind but all educators are welcome.

Presented by: Larry Caffro, Maumee High School
Diane Tache, Bowling Green High School
Sandi Shinaberry, St. Catherine's School

Grade Levels: PK-12, Undergraduate

Room: Auditorium

B2 Explorations in Life Science – Through Inquiry Based Activities from Toledo Botanical Garden (LIMIT 20)



Educators from TBG will share highlights from K-6 plant and animal focused activities used in their field trips and classroom programs emphasizing techniques for tackling common misconceptions. Includes take home activities to use in your classroom and a raffle for one free field trip or in-class program.

Presented by: Jeanine Roberts, Toledo Botanical Garden
Diane Thurber, Toledo Botanical Garden

Grade Levels: PK-6

Room: 1106

B3 STEM – Teaching 21st Century Learners



Students are changing! Learn WHY educators need to change along with students and HOW to implement STEM in your classroom to facilitate a learning environment conducive to getting the most out of your 21st century learners. Applications of technology and tools will be demonstrated and practiced by attendees to be used in your classrooms. **Repeated in Session A2.**

Presented by: Kristie Reighard, Penta Career Center

Grade Levels: 4-12

Room: 3123

B4 Physical Science Modeling Instruction



Have you heard of Modeling Instruction? Come see why many teachers are getting excited about this new way of presenting curriculum. Modeling targets misconceptions and attempts to correct them by having students conduct self-directed labs, participate in whiteboard sessions, and develop models. We will explore two models: velocity and density. *Continued in Session C5.*

Presented by: Mary Kate Hafemann, Ottawa Hills High School
Nate Ash, Perrysburg High School
Sam Evans, Maumee High School

Grade Levels: 7-12

Room: 2103

B5 Geospatial Technologies: Curriculum Tools for the 21st Century



Geospatial technologies are for the 21st century what computers were for the 20th century. According to the Department of Labor, they are the fastest growing career path in the US. This presentation will introduce you to remote sensing, GPS and GIS and how they can be incorporated into your curriculum. *Repeated in Session A4.*

Presented by: Mikell Lynn Hedley, The University of Toledo
Kevin P. Czajkowski, The University of Toledo

Grade Levels: 4-12, Faculty/Administrator

Room: 2105

B6 Quantitative Biology: Data Collection and Modeling



Scientific software has become very accessible for the high school classroom. Biology students at Seneca East High School developed, tested, and then modeled their own hypotheses using the system dynamics software Simulink. A summary of the project and a demonstration of quantitative modeling software products and applications will be given.

Presented by: Jon Darkow, Seneca East High School

Grade Levels: 9-12, Undergraduate

Room: 2107

B7 Geometry for the Fun of It – Unit Origami (LIMIT 30)



Bow ties, cubes, octahedrons, and icosahedrons will be created in this introduction to paper-folding session. Bring a “crisp” dollar bill for folding. *Continued in Session C8 (Repeated in Sessions E7 & F7).*

Presented by: Sharyn Lininger, St. Wendelin Catholic School

Grade Levels: 7-12

Room: 2109



B8 Teaching Elementary Linear Algebra with Technology



The presenter and some of his students will show how technology, in particular the computer algebra system Maple, is currently used in his Elementary Linear Algebra course. Several interactive learning objects to help with understanding the key concepts will be demonstrated. Our old friend $(1+\sqrt{5})/2$ will show up as an eigenvalue. *Continued from Session A7.*

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Grade Levels: Undergraduate, Faculty/Administrator

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B9 The Pathway to Math Success: Number Sense for Preschool and Kindergarten Classrooms



The three most important components of number sense will be highlighted and illustrated through practical real-world examples. Strategies to prevent math difficulties and improve calculation fluency in preschool through first grade students will also be offered. This workshop is modeled after successful presentations at national conferences. *Continued in Session C10 (Repeated in Sessions E9 & F9).*

Presented by: Ken Newbury, Educational Consultant

Grade Levels: PK-3

Room: 2111

B10 Teaching Science Ethically: Considering Religious Students in the Classroom



As teachers, although we consider the criteria of what constitutes a fact, we fail to consider in what manner our students craft their own. In scientific instruction, logically valid religious viewpoints must be understood when considering the eclectic classroom. Particularly considered: Bertrand Russell's technique in lecturing on origin. *Continued in Session C11 (Repeated in Sessions E10 & F10).*

Presented by: Renton Rathbun, Owens Community College

Grade Levels: 7-12, Undergraduate

Room: 2113



B11 UNIV 1200: Learning-Behavior Assessments (academic counseling in the classroom via the Information Learning-Behavior Scale booklet [IL-BS] on a weekly basis)



UNIV 1200: Learning-Behavior Assessments was designed to help participants with the process of changing their overall learning-behavior to become successful learners in any environment. Students complete the Information Learning-Behavior Scale & Information Learning-Behavior Scale-AMIGO booklets on a weekly basis, and discuss the results in class. **Continued in Session C12 (Repeated in Sessions E11 & F11).**

Presented by: Manny Pomales, Jr., Bowling Green State University

Grade Levels: 11-12, Undergraduate, Faculty/Administrator, High School Counselors/Advisors

Room: 2115

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Grade Levels: 4-12, Undergraduate

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Presented by: Judith McCrory, The University of Findlay

Grade Levels: 7-12, Undergraduate

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B16 Collaborative Concept Mapping in Calculus



Concept mapping is typically an individual enterprise where students take a set of terms and build a graphical representation of how those terms relate to one another. This presentation discusses how those individual concept maps can be leveraged into meaningful group discussions as sets of students construct a singular map. **Repeated in Session A15.**

Presented by: David Meel, Bowling Green State University

Grade Levels: 7-12, Undergraduate, Faculty/Administrator

Room: 2122

VENDOR SESSIONS

B17 Building STEM Learning in K-3 Classrooms



Hands-on activities, real-life materials and plenty of visuals get students excited about science. They become botanists, geologists, etc. as they experiment and research. Learn how elementary teachers can create this learning environment in their classrooms to reach students of all learning styles. Sample lessons available.

Presented by: Kathy Tabor, Nancy Larson Publishers

Grade Levels: PK-3, Undergraduate, Faculty/Administrator

Room: 2123

B18 Academic Support for the New Ohio K-8 Science Standards



What is your plan for meeting the new standards? Whether you are looking for a new curriculum or simply seeking ways to tweak your current program, we can help. We will share what is new. What is your plan for meeting the new standards?

Presented by: Scott Hudson, Delta Education

Grade Levels: PK-8

Room: 2125



Earth/Space Science



General Science



Life Science



Mathematics



Pedagogy



Physical Science



Pre-Service



Technology

Session C (10:00 am - 10:50 am)

C1 Race to the Future: Integrating 21st Century Skills into Science and Mathematics

Instruction (LIMIT 20)



This exciting activity is modeled after the reality television show, The Amazing Race, and exemplifies how 21st century skills can be incorporated into core subject instruction as means to enhance student engagement. *Continued in Session D1.*

Presented by: Emilio Duran, Bowling Green State University

Grade Levels: 9-12, Undergraduate

Room: Auditorium

C2 Elementary GLOBE: A Hands-On Environmental Education Program (LIMIT 40)



Join us for an interactive presentation on the Elementary GLOBE Program, an international environmental education program focusing on soil, weather and atmosphere, water, and earth as a system. Participants will leave with classroom-ready, standards-based lessons that will motivate both students and teachers alike! *Repeated in Session D2.*

Presented by: Jodi Haney, Bowling Green State University

Grade Levels: PK-3

Room: 1106

C3 Just Push Play: Screencasting



A screencast allows the capture of anything that is visible on a computer screen complete with narration. Teachers can use screencasts to extend course content beyond the classroom. Screencasts can be integrated into many assignments to engage our digitally creative students. We will explore a number of free tools that are fun and easy to use for students and teachers alike! *Continued in Session D3.*

Presented by: Terry Herman, Bowling Green State University

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 3123

C4 Reptiles in the Classroom



Having live animals in the classroom can function to spark student interest in science. Reptiles represent a diverse group of organisms easily maintained in the classroom and incorporated into lessons at all levels. A variety of reptiles will be displayed, along with care instructions and lesson plans developed as part of a BGSU Biology course. *Repeated in Session D4.*

Presented by: Eileen Underwood, Bowling Green State University

Grade Levels: PK-12, Undergraduate

Room: 2100



C5 Physical Science Modeling Instruction



Have you heard of Modeling Instruction? Come see why many teachers are getting excited about this new way of presenting curriculum. Modeling targets misconceptions and attempts to correct them by having students conduct self-directed labs, participate in whiteboard sessions, and develop models. We will explore two models: velocity and density. *Continued from Session B4.*

Presented by: Mary Kate Hafemann, Ottawa Hills High School

Nate Ash, Perrysburg High School

Sam Evans, Maumee High School

Grade Levels: 7-12

Room: 2103

C6 Using Formative Assessment Effectively!



We will look at what formative assessment is, and how to use it effectively in the classroom. Examples will be shown and shared along with the opportunity to develop some formative assessments to use in your own classrooms. *Repeated in Session D6.*

Presented by: Lisa Bartholomew, Regina Coeli School

Grade Levels: 4-10

Room: 2105

C7 Incorporating Nutrition Information in Science Lesson Plans



Our doctors and the media tell us we should “eat better” and often to “lose weight.” However, practical ideas may be elusive. With the current interest in childhood obesity, students can learn and practice basic nutrition information and skills which will help them maintain health and a healthy body weight. *Repeated in Session D7.*

Presented by: Christine Huth, Pyramid Nutrition Services

Grade Levels: 7-12

Room: 2107

C8 Geometry For the Fun of It – Unit Origami (LIMIT 30)



Bow ties, cubes, octahedrons, and icosahedrons will be created in this introduction to paper-folding session. Bring a “crisp” dollar bill for folding. *Continued from Session B7 (Repeated in Sessions E7 & F7).*

Presented by: Sharyn Lininger, St. Wendelin Catholic School

Grade Levels: 7-12

Room: 2109



C9 The Case for Cases in Mathematics Teacher Professional Development



Presenter will explain what cases are and how they can be used in mathematics teacher professional development/preparation programs. Implementation guidelines will be provided. Finally, presenter will share personal experiences in using mathematics cases. **Repeated in Session D9.**

Presented by: Victor Odafe, Bowling Green State University-Firelands

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 2110

C10 The Pathway to Math Success: Number Sense for Preschool and Kindergarten Classrooms



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Grade Levels: PK-3

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Presented by: Renton Rathbun, Owens Community College

Grade Levels: 7-12, Undergraduate

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Presented by: Manny Pomales, Jr., Bowling Green State University

Grade Levels: 11-12, Undergraduate, Faculty/Administrator, High School Counselors/Advisors

Room: 2115



Earth/Space Science



General Science



Life Science



Mathematics



Pedagogy



Physical Science



Pre-Service



Technology

C13 “TOP” THIS! Toys, Tops and Other Gyroscopes (LIMIT 15)



This workshop will focus on the Ohio Standards for Mathematics and Science actively engaging in-class learning experiences and discussions. Using tops, participants will conduct inquiry investigations into force and motion, create a top using recycled materials and advance the thinking of others and self through reflective science journals. *Repeated in Session D13.*

Presented by: Michele Duck, Defiance College

Grade Levels: PK-3, Undergraduate

Room: 2117

C14 Enhancing Metacognitive Understanding with Puzzle Games – The Multiple Aspects of Goo



This presentation will review the use of the puzzle game, The World of Goo, for teaching metacognitive processing and awareness in a graduate reading course. Applications to personal and professional development in pedagogy will be provided as well. *Repeated in Session D14.*

Presented by: Michael P. French, Lourdes College
Jennifer L. Fong, Lourdes College

Grade Levels: Undergraduate, Graduate Students

Room: 2118

C15 Ohio Total Science Safety System (OTSSS)



OTSSS is a comprehensive safety tool designed by Jakel, Inc. and SECO to aid educators in following safety regulations in Ohio science classrooms. Each Ohio public or private middle/junior high and high school can receive one CD. Learn how you can keep your science classroom safe and pick up a CD for your school. *Continued in Session D15.*

Presented by: Janet Struble, SECO (Science Education Council of Ohio)
Gene Lynn, SECO (Science Education Council of Ohio)

Grade Levels: 4-12

Room: 2119

C16 How to Fuel Up Interest in Your Classroom and Beyond: Making Biodiesel (LIMIT 20)



In this presentation learners will be learning how to make biodiesel using everyday products. This will be a lecture as well as a hands-on workshop that teachers can take back to the classroom. This simple activity has caused alot of my “non-chemistry” Autotech students to look at chemistry and enviromental issues in a whole different light! *Continued in Session D16.*

Presented by: Paul Waldman, Findlay City Schools

Grade Levels: 7-12, Undergraduate

Room: 2121



C17 MESSENGER: Mission to Mercury



This is a very exciting time for the MESSENGER satellite. Come learn about the Mission to Mercury and the orbit of the MESSENGER satellite around Mercury in March, 2011. Participants will experience hands-on learning activities that will engage students in grades 4-10. Each participant will receive a CD with four complete teaching Modules. *Repeated in Session D17.*

Presented by: Debra Gallagher, Ohio Northern University

Grade Levels: 4-10, Undergraduate

Room: 2122

C18 Incorporating STEM Activities into Academic Classes



Learn how using WIKIS, Excel, movies, and Podcasts in academic classes can help your students learn academic content. Social Studies lesson plan ideas incorporating both math and technology will be shared and modeled. Lesson ideas can be adapted for other academic subject areas.

Repeated in Session D18.

Presented by: David Harms, Penta Career Center

Grade Levels: 7-12, Undergraduate, Faculty/Administrator

Room: 2123

VENDOR SESSIONS

C19 What's New and What To Do at the Zoo



Learn about new programs and new approaches for using The Toledo Zoo for hands-on teaching opportunities. New tours, scavenger hunts and inquiry-based programs will all make Zoo visits even more effective and fun. In addition to two Toledo Zoo education managers presenting, a few remarkable animals will show how easily they engage your students.

Presented by: Linda Calcamuggio, The Toledo Zoo

Joshua Minor, The Toledo Zoo

Grade Levels: PK-12, Undergraduate

Room: 2125



Session D (11:00 am - 11:50 am)

D1 Race to the Future: Integrating 21st Century Skills into Science and Mathematics

Instruction (LIMIT 20)



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Room: 3123

D4 Reptiles in the Classroom



Having live animals in the classroom can function to spark student interest in science. Reptiles represent a diverse group of organisms easily maintained in the classroom and incorporated into lessons at all levels. A variety of reptiles will be displayed, along with care instructions and lesson plans developed as part of a BGSU Biology course. *Repeated in Session C4.*

Presented by: Eileen Underwood, Bowling Green State University

Grade Levels: PK-12, Undergraduate

Room: 2100



Earth/Space Science



General Science



Life Science



Mathematics



Pedagogy



Physical Science



Pre-Service



Technology

D5 Top 10 Tools for Teachers



Learn how a handful of technology tools can make your students a little more engaged, your teaching a little more effective, and your life a little simpler. Ten tools (many free) will be the focus, but others will be discussed as well. Come share your favorites! Handout provided.

Presented by: Carrie Rathsack, Rossford Schools

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 2103

D6 Using Formative Assessment Effectively!



We will look at what formative assessment is, and how to use it effectively in the classroom. Examples will be shown and shared along with the opportunity to develop some formative assessments to use in your own classrooms. **Repeated in Session C6.**

Presented by: Lisa Bartholomew, Regina Coeli School

Grade Levels: 4-10

Room: 2105

D7 Incorporating Nutrition Information in Science Lesson Plans



Our doctors and the media tell us we should “eat better” and often to “lose weight.” However, practical ideas may be elusive. With the current interest in childhood obesity, students can learn and practice basic nutrition information and skills which will help them maintain health and a healthy body weight. **Repeated in Session C7.**

Presented by: Christine Huth, Pyramid Nutrition Services

Grade Levels: 7-12

Room: 2107

D8 Project-Based Science Units for Environmental Science and Physical Science (LIMIT 30)



We developed and taught these project-based science units for our own classrooms during our involvement in The University of Toledo’s IMPACT program. We would like to share our units, our experiences, and our tips for making PBS work for you and your classroom.

Presented by: Jahnine Blosser, Toledo Public Schools

Erin Spetz, Toledo Public Schools

Grade Levels: 9-12

Room: 2109

D9 The Case for Cases in Mathematics Teacher Professional Development



Presenter will explain what cases are and how they can be used in mathematics teacher professional development/preparation programs. Implementation guidelines will be provided. Finally, presenter will share personal experiences in using mathematics cases. **Repeated in Session C9.**

Presented by: Victor Odafe, Bowling Green State University-Firelands

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 2110

D10 Click Here If You Like School: What Educators Can Learn from Facebook About Student and Parent Engagement



Facebook now draws half a billion users, each averaging an hour per day on the site. How does it attract so much attention from so many people? This session will explore Facebook's strategies for engaging users that educators can adapt to improve school and class climates, energize teachers, and increase student engagement and parent involvement.

Presented by: Eric Calvert, Bowling Green State University

Rachel Smethers-Winters, Portage County Educational Service Center

Grade Levels: 7-12

Room: 2111

D11 Inquiry Masters Program for Advancing Content for Teachers (IMPACT) U.S. Department of Education Scholarship Program



IMPACT offers Toledo area science teachers in grades 4-12 the opportunity to earn a Master of Science degree in Biology (Ecology track) from the University of Toledo. IMPACT provides scholarships to cover financial costs, academic assistance, and professional support, a value of over \$15,000.

Presented by: Michelle Reed, Toledo Public Schools

Branden May, Toledo Public Schools

Christine Hablitzel, Toledo Public Schools

Grade Levels: 4-12

Room: 2113



D12 Pod-sibilities for STEM Education Are Endless



Learn how NWOCE grant awardees provided educators with training on using podcasts in their own learning process as well as creating and publishing podcasts. You will learn the basics of podcasting, hear ideas on using podcasts in the classroom, and see some applications used with iPod Touch mobile devices.

Presented by: Chad Rex, Lucas County Educational Service Center
 Lisa Morse, Lucas County Educational Service Center
 Jean Kornowa, Teacher
 Daneen Cole, Teacher
 Kathleen Herrmann, Lucas County Educational Service Center

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 2115

D13 "TOP" THIS! Toys, Tops and Other Gyroscopes (LIMIT 15)



This workshop will focus on the Ohio Standards for Mathematics and Science actively engaging in-class learning experiences and discussions. Using tops, participants will conduct inquiry investigations into force and motion, create a top using recycled materials and advance the thinking of others and self through reflective science journals. *Repeated in Session C13.*

Presented by: Michele Duck, Defiance College

Grade Levels: PK-3, Undergraduate

Room: 2117

D14 Enhancing Metacognitive Understanding with Puzzle games – The Multiple Aspects of Goo



This presentation will review the use of the puzzle game, The World of Goo, for teaching metacognitive processing and awareness in a graduate reading course. Applications to personal and professional development in pedagogy will be provided as well. *Repeated in Session C14.*

Presented by: Michael P. French, Lourdes College
 Jennifer L. Fong, Lourdes College

Grade Levels: Undergraduate, Graduate Students

Room: 2118

D15 Ohio Total Science Safety System (OTSSS)



OTSSS is a comprehensive safety tool designed by Jakel, Inc. and SECO to aid educators in following safety regulations in Ohio science classrooms. Each Ohio public or private middle/junior high and high school can receive one CD. Learn how you can keep your science classroom safe and pick up a CD for your school. *Continued from Session C15.*

Presented by: Janet Struble, SECO (Science Education Council of Ohio)
Gene Lynn, SECO (Science Education Council of Ohio)

Grade Levels: 4-12

Room: 2119

D16 How to Fuel Up Interest in Your Classroom and Beyond: Making Biodiesel (LIMIT 20)



In this presentation learners will be learning how to make biodiesel using everyday products. This will be a lecture as well as a hands-on workshop that teachers can take back to the classroom. This simple activity has caused alot of my "non-chemistry" Autotech students to look at chemistry and enviromental issues in a whole different light! *Continued from Session C16.*

Presented by: Paul Waldman, Findlay City Schools

Grade Levels: 7-12, Undergraduate

Room: 2121

D17 MESSENGER: Mission to Mercury



This is a very exciting time for the MESSENGER satellite. Come learn about the Mission to Mercury and the orbit of the MESSENGER satellite around Mercury in March, 2011. Participants will experience hands-on learning activities that will engage students in grades 4-10. Each participant will receive a CD with four complete teaching Modules. *Repeated in Session C17.*

Presented by: Debra Gallagher, Ohio Northern University

Grade Levels: 4-10, Undergraduate

Room: 2122

D18 Incorporating STEM Activities into Academic Classes



Learn how using WIKIS, Excel, movies, and Podcasts in academic classes can help your students learn academic content. Social Studies lesson plan ideas incorporating both math and technology will be shared and modeled. Lesson ideas can be adapted for other academic subject areas. *Repeated in Session C18.*

Presented by: David Harms, Penta Career Center

Grade Levels: 7-12, Undergraduate, Faculty/Administrator

Room: 2123



Session E (12:00 - 12:50 pm)

E1 What to Expect Your First Year of Teaching: Things I Wish I Had Known Walking into the Classroom



This will be a panel discussion followed by a question and answer session with three teachers who have been in the classroom less than three years. Find out tips to make your first years of teaching a success and the typical pitfalls of being a new teacher.

Presented by: Angie Robinson, Sylvania Schools
Adam Russell, Maumee High School
Bethany Munn, Springfield High School

Grade Levels: Undergraduate, Faculty/Administrator

Room: Auditorium

E2 Naturally Diverse – Ohio Animals (LIMIT 24)



Bats, beavers and badgers, oh my! What animals are native to Ohio and why? The answer to this question can be found by identifying Ohio habitats. The many varied habitats found in Ohio are the home to an amazing diversity of native animals. Come find out what the Metroparks has to offer. **Repeated in Session F2.**

Presented by: Karen Mitchell, Metroparks of the Toledo Area
Jennifer Berk, Metroparks of the Toledo Area

Grade Levels: PK-6

Room: 1106

E3 Virtual Field Trips with Google Earth for Instruction and Assessment



Learn how to find and use existing virtual field trips (.kmz files) in Google Earth for any subject matter and any grade level (K-12). Also learn how to create your own .kmz file, customized to your own instructional needs. We will also discuss how to use Google Earth and .kmz files for assessment in the older grades (6-12). **Repeated in Session F3.**

Presented by: Susan Bastian, Sylvania Franciscan Academy

Grade Levels: PK-12, Undergraduate

Room: 3123

E4 Humans at the Earth's Extremes: Mt. Everest – the Good, the Bad and the Deadly



From the earliest explorers to the modern adventurer, the attraction of the mountains is undeniable. Although humans are adaptable to high altitude, there are limits; dangers such as frostbite, acute altitude sickness, HACE and HAPE can be life threatening. Come; join us on a scientific excursion to the highest point on earth, Mt. Everest. *Repeated in Session F4.*

Presented by: Fredrick Andres, Bowling Green State University
K. Todd Keylock, Bowling Green State University

Grade Levels: 9-12, Undergraduate

Room: 2100

E5 I Really Do Study



"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 differences between these students and more successful students, and how teachers can move these novice learners toward becoming experts. *Repeated in Session F5.*

Presented by: Debra Bercher, Lourdes College

Grade Levels: 7-12, Undergraduate

Room: 2103

E6 Beyond the Music, Movies and TV: iTunes U and Ohio's Perfect Balance



Apple's iTunes platform is known worldwide for the content it has available for purchase. But did you know that there is an entire realm of iTunes that contains educational content for grades P-20, and it's all FREE!! We will explore all that is available in Ohio and throughout iTunes U and how to get iTunes set-up on your Mac or PC. *Repeated in Session F6.*

Presented by: Steve Crumbacher, eTech Ohio

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 2107

E7 Geometry for the Fun of It – Unit Origami (LIMIT 30)



Bow ties, cubes, octahedrons, and icosahedrons will be created in this introduction to paper-folding session. Bring a "crisp" dollar bill for folding. *Continued in Session F7 (Repeated in Sessions B7 & C8).*

Presented by: Sharyn Lininger, St. Wendelin Catholic School

Grade Levels: 7-12

Room: 2109



E8 Random Segregation and Meiosis (LIMIT 14)



We will explore an interesting way to teach random segregation in meiosis using an unusual model system. Students will be able to see the production of a variety of gametes and offsprings as a result of this approach.

Presented by: Anjali Gray, Lourdes College

Grade Levels: 9-12

Room: 2110

E9 The Pathway to Math Success: Number Sense for Preschool and Kindergarten Classrooms



The three most important components of number sense will be highlighted and illustrated through practical real-world examples. Strategies to prevent math difficulties and improve calculation fluency in preschool through first grade students will also be offered. This workshop is modeled after successful presentations at national conferences. **Continued in Session F9 (Repeated in Sessions B9 & C10).**

Presented by: Ken Newbury, Educational Consultant

Grade Levels: PK-3

Room: 2111

E10 Teaching Science Ethically: Considering Religious Students in the Classroom



As teachers, although we consider the criteria of what constitutes a fact, we fail to consider in what manner our students craft their own. In scientific instruction, logically valid religious viewpoints must be understood when considering the eclectic classroom. Particularly considered: Bertrand Russell's technique in lecturing on origin. **Continued in Session F10 (Repeated in Sessions B10 & C11).**

Presented by: Renton Rathbun, Owens Community College

Grade Levels: 7-12, Undergraduate

Room: 2113

E11 UNIV 1200: Learning-Behavior Assessments (academic counseling in the classroom via the Information Learning-Behavior Scale booklet [IL-BS] on a weekly basis)



UNIV 1200: Learning-Behavior Assessments was designed to help participants with the process of changing their overall learning-behavior to become successful learners in any environment. Students complete the Information Learning-Behavior Scale & Information Learning-Behavior Scale-AMIGO booklets on a weekly basis, and discuss the results in class. **Continued in Session F11 (Repeated in Sessions B11 & C12).**

Presented by: Manny Pomales, Jr., Bowling Green State University

Grade Levels: 11-12, Undergraduate, Faculty/Administrator, High School Counselors/Advisors

Room: 2115



Earth/Space Science



General Science



Life Science



Mathematics



Pedagogy



Physical Science



Pre-Service



Technology

E12 Rain Gardens: Nature's Way of Clearing the Storm



The Rain Garden Initiative (RGI) promotes rain gardens as a natural way of managing stormwater. Rain gardens offer the educational benefits of gardening while addressing issues of water quality. Learn rain garden basics and explore curriculum and loaner boxes available from RGI that provide hands-on learning experiences in the sciences. **Repeated in Session F12.**

Presented by: Marilyn DuFour, City of Toledo Environmental Services
Jamie Kochensparger, Lucas Soil & Water Conservation District

Grade Levels: 4-12

Room: 2117

E13 A Transdisciplinary Course in Introductory Biology for Non-Science Majors that Guides Creative Learning



Biology 1120 uses constructivism and metaphorical, conceptual thinking to facilitate students understanding scientific ideas in terms of their personal experiences. Universal evolution is a creative process described as Order, Chaos, hierarchal New Order that students experience as Life, Death, Rebirth, which is human individuation. **Repeated in Session F13.**

Presented by: Donald Pribor, The University of Toledo

Grade Levels: 11-12, Undergraduate, Faculty/Administrator

Room: 2118

E14 SMART Board Strategies for Math



Learn new strategies for the SMART Board to use in math instruction and explore some outstanding resources for this curricular area – ALL FREE!

Presented by: Judith Tucker, Northwest Ohio Educational Technology

Grade Levels: PK-12

Room: 2119

E15 Bar Modeling: A Problem-Solving Tool



Picturing a problem is often the key to helping students understand the problem and identify a solution. Discover how various types of bar models can be used to solve mathematical word problems and learn the techniques of deriving, drawing and manipulating bar models. **Repeated in Session F16.**

Presented by: Oxana Grinevich, Lourdes College

Grade Levels: PK-6

Room: 2122



E16 Inquiry-Based Science Using Household Items – Exploring Inquiry with Materials Found in Your Home or Garage



This session is designed for elementary science teachers looking for strategies to foster inquiry driven learning. Materials for these activities are easily obtained and inexpensive. Participants will be provided with ideas they can implement in their classroom on Monday! **Repeated in Session F17.**

Presented by: Jen Harraman, Liberty Benton Local Schools

Grade Levels: PK-6

Room: 2123

E17 Using GIS to Supplement Math and Science Lessons



This presentation will run through free GIS applications that can be downloaded and used to show how math and science are being used in the emerging career of Geospatial Information Systems. The computer mapping makes it fun and interesting for students as they visualize math and science concepts via a GIS project. **Continued in Session F18.**

Presented by: Daniel Wyandt, Penta Career Center

Grade Levels: 7-12

Room: 2220



VENDOR SESSIONS

E18 Using Public Media to Teach Literacy (LIMIT 25)

Good educational media addresses multiple learning styles, models reading and attracts young children to books. This workshop is full of video and Web-based examples tied to Ohio's Early Learning Content Standards for Language Arts, and suggests those examples as a strong component in a well-built lesson plan. Step-Up to Quality approved workshop. **Continued in Session F20.**

Presented by: Kathy Smith, WGTE Public Media

Grade Levels: PK-3

Room: 2105

E19 Acquiring Technology Tools to Support Your K-8 FOSS and Delta Science Module Inquiry Program

Explore many new technology aids available for FOSS and Delta Science Module users. Look at the new On-line FOSS teacher, Aôs guide, changes on FOSSweb, and the new interface with SmartBoard. You will see the new assessment analysis tool (FOSSMap), some new teacher-prep videos for DSM and FOSS Middle School, and Taking Science Outdoors.

Presented by: Scott Hudson, Delta Education

Grade Levels: : PK-8

Room: 2125



Session F (1:00 pm - 1:50 pm)

F1 Exploring Educational Theater Through the Theater Vision: Educational Theater Series at Lourdes College

In this interactive presentation, explore the exciting world of educational theater and discover ways to enrich your teaching and expand your curriculum through the arts. Learn how other subjects can be integrated with educational theater. Presented by a member of the staff of Lourdes College's Theater Vision: Educational Theater Series. *Repeated in Session G1.*

Presented by: Jule Horn, Lourdes College

Grade Levels: PK-12, Undergraduate (Arts Education: Theater Arts)

Room: Auditorium

F2 Naturally Diverse – Ohio Animals (LIMIT 24)



Bats, beavers and badgers, oh my! What animals are native to Ohio and why? The answer to this question can be found by identifying Ohio habitats. The many varied habitats found in Ohio are the home to an amazing diversity of native animals. Come find out what the Metroparks has to offer.

Repeated in Session E2.

Presented by: Karen Mitchell, Metroparks of the Toledo Area
Jennifer Berk, Metroparks of the Toledo Area

Grade Levels: PK-6

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Grade Levels: PK-12, Undergraduate

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From the earliest explorers to the modern adventurer, the attraction of the mountains is undeniable. Although humans are adaptable to high altitude, there are limits; dangers such as frostbite, acute altitude sickness, HACE and HAPE can be life threatening. Come; join us on a scientific excursion to the highest point on earth, Mt. Everest. **Repeated in Session E4.**

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Presented by: Sharyn Lininger, St. Wendelin Catholic School

Grade Levels: 7-12

Room: 2109



F8 What Do Geometry Proofs, Mazes, and Flow Charts Have in Common?



This presentation will show how to do Geometry proofs using the ideas from mazes and flow charts. Students seem to have a hard time determining what to do next after they have written down all of the given information. This method will hopefully help the student understand the connection between the givens and the rest of the proof.

Presented by: Beryl Stemen, Lourdes College and Owens Community College

Grade Levels: 7-12, Undergraduate

Room: 2110

F9 The Pathway to Math Success: Number Sense for Preschool and Kindergarten Classrooms



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Grade Levels: PK-3

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Presented by: Manny Pomales, Jr., Bowling Green State University

Grade Levels: 11-12, Undergraduate, Faculty/Administrator, High School Counselors/Advisors

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Presented by: Marilyn DuFour, City of Toledo Environmental Services
Jamie Kochensparger, Lucas Soil & Water Conservation District

Grade Levels: 4-12

Room: 2117

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Presented by: Donald Pribor, The University of Toledo

Grade Levels: 11-12, Undergraduate, Faculty/Administrator

Room: 2118

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Learn new strategies for the SMART Board to use in science instruction and explore some outstanding resources for this curricular area – ALL FREE!

Presented by: Judith Tucker, Northwest Ohio Educational Technology

Grade Levels: PK-12

Room: 2119

F15 Using Facebook as a Learning Management System



Anthony Fontana will present best practices developed using Facebook as a Learning Management System in his art classes at Bowling Green State University. This lecture will also cover the advantages and disadvantages of using social networks in an educational environment.

Presented by: Anthony Fontana, Bowling Green State University

Grade Levels: 9-12, Undergraduate, Faculty/Administrator

Room: 2121

F16 Bar Modeling: A Problem-Solving Tool



Picturing a problem is often the key to helping students understand the problem and identify a solution. Discover how various types of bar models can be used to solve mathematical word problems and learn the techniques of deriving, drawing and manipulating bar models. **Repeated in Session E15.**

Presented by: Oxana Grinevich, Lourdes College

Grade Levels: PK-6

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Grade Levels: PK-6

Room: 2123

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This presentation will run through free GIS applications that can be downloaded and used to show how math and science are being used in the emerging career of Geospatial Information Systems. The computer mapping makes it fun and interesting for students as they visualize math and science concepts via a GIS project. **Continued from Session E17.**

Presented by: Daniel Wyandt, Penta Career Center

Grade Levels: 7-12

Room: 2220

VENDOR SESSIONS

F19 Blend Science and Literacy by Using Informational Texts and Disciplinary Reading Skills



Supplemental readers are just one of the many strategies we will explore. Examine Delta Science Readers and Content Readers with TGs and Skillbuilders, as well as readers from Seeds and Roots with Strategy Guides. Investigate research to support the use of literacy to help inquiry science instruction and other aspects of literacy in science.

Presented by: Scott Hudson, Delta Education

Grade Levels: : PK-8 (P, GS)

Room: 2125

F20 Using Public Media to Teach Literacy (LIMIT 25)



Good educational media addresses multiple learning styles, models reading and attracts young children to books. This workshop is full of video and Web-based examples tied to Ohio's Early Learning Content Standards for Language Arts, and suggests those examples as a strong component in a well-built lesson plan. Step-Up to Quality approved workshop. **Continued from Session E18.**

Presented by: Kathy Smith, WGTE Public Media



Earth/Space Science



General Science



Life Science



Mathematics



Pedagogy



Physical Science



Pre-Service



Technology

Session G (2:00 pm - 2:50 pm)

G1 Exploring Educational Theater Through the Theater Vision: Educational Theater Series at Lourdes College

In this interactive presentation, explore the exciting world of educational theater and discover ways to enrich your teaching and expand your curriculum through the arts. Learn how other subjects can be integrated with educational theater. Presented by a member of the staff of Lourdes College's Theater Vision: Educational Theater Series. *Repeated in Session F1.*

Presented by: Jule Horn, Lourdes College

Grade Levels: PK-12, Undergraduate (Arts Education: Theater Arts)

Room: Auditorium

G2 Applets and Videos for Calc



Have you spent hours searching for the perfect applet or video? Or would you like an applet but haven't found the right one? If so, come to this session where you will walk away with a list of links for online applets, videos, etc. that experienced calculus teachers have tried and actually use. Also share your favorite link with everyone!

Presented by: Ann Darke, Bowling Green State University

Grade Levels: 11-12, Undergraduate

Room: 2100

G3 Research-Based Physical Science Experiences for K-3 Teachers (LIMIT 20)



This presentation will highlight hands-on, inquiry-based forces and motion lessons for K-3 teachers. Interactive demonstrations will be conducted with lesson plans provided for each participant. *Repeated in Session H2.*

Presented by: Tracy Huziak-Clark, Bowling Green State University

Katie Singer, Teacher

Chauntelle Flack, Teacher

Grade Levels: PK-3, Undergraduate

Room: 2103

G4 Online Engagement: Tools for Making Parents Partners



Parent involvement is critical to student success. How can teachers help parents get beyond the, "How was school today? Is your homework done?" stage to become more active and effective partners with you? In this session we will share easy, free online tools and resources to help you engage parents in supporting and extending the curriculum. *Repeated in Session H3.*

Presented by: Terry Herman, Bowling Green State University

Eric Calvert, Bowling Green State University

Grade Levels: PK-12 (M, T, P, GS)

Room: 2105



G5 Bringing Oceanographic Research to the Classroom



This interactive session will demonstrate how science research, technology and engineering aboard the research vessel JOIDES Resolution can be brought to the classroom to excite students about science research, and extend the teaching of fundamental concepts already in the curriculum. It is based on the presenter's recent shipboard experience. **Repeated in Session H4.**

Presented by: Jackie Kane, St. Ursula Academy

Grade Levels: 4-12

Room: 2107

G6 Electricity from the Sun: Solar Energy Activities for the Classroom



We will perform activities to learn about what factors affect the way solar panels work. Activities that I use with my high school students as well as activities for younger students that my classes performed with children at Imagination Station will be discussed. **Repeated in Session H5.**

Presented by: Scott Secrest, St. Francis de Sales High School

Grade Levels: 4-12

Room: 2109

G7 Factoring Polynomials Made Simple



We have rules for factoring numbers, so I used the same concept for factoring polynomials. It all depends on the number of terms in the polynomial expression. **Repeated in Session H6.**

Presented by: Beryl Stemen, Lourdes College and Owens Community College

Grade Levels: 7-12, Undergraduate

Room: 2110

G8 STEM: Engineering, The Designed World, and Technological Literacy



Presenters will unfold a practical view of STEM and how it is applied to Engineering, The Designed World, and Technological Literacy. The audience will gain new insight into contexts related to STEM. It will open minds and create new viewpoints of this developing area of study beyond the classroom walls. **Repeated in Session H7.**

Presented by: Albert Rossner, Bowling Green State University

Grade Levels: 4-12, Undergraduate

Room: 2111



G9 Teaching Math Facts Using Strategies



Are you tired of watching students count to solve simple math facts? Would you like your math students to feel more confident? Come and learn how to teach your students addition and subtraction facts using strategies and games. Also, learn an alternative way to solve multiplication and division facts for those who cannot memorize them. *Repeated in Session H8.*

Presented by: Desi Ruiz, Sylvania Schools

Grade Levels: 1-5

Room: 2113

G10 Engaging Students with Wildlife (LIMIT 25)



Students can make real world connections through exciting learning experiences tied to the revised standards-based Life Sciences curriculum. Nature's Nursery custom programs feature live animals to stimulate questioning and observation of adaptations, behaviors, survival strategies, life cycles, predator-prey, food webs, and environmental changes. *Repeated in Session H9.*

Presented by: Laura Zitzelberger, Nature's Nursery Center for Wildlife Rehabilitation and Education
Bill Hoefflin, Nature's Nursery Center for Wildlife Rehabilitation and Education

Grade Levels: PK-12, Undergraduate

Room: 2115

G11 Making Sense of Number Sense Using the Developmental Mathematics Assessment



The Developmental Math Assessment (DMA) is a diagnostic measure of students' number sense understanding. In this session, learn about the research that explains the learning progression of Number Sense concepts and try out some aspects of the DMA and Classroom Interventions associated with the program. *Repeated in Session H10.*

Presented by: Michelle Shafer, Rossford Schools
Diane Burtchin, Rossford Schools

Grade Levels: PK-3

Room: 2117

G12 Ohio Total Science Safety System (OTSSS)



OTSSS is a comprehensive safety tool designed by Jakel, Inc. and SECO to aid educators in following safety regulations in Ohio science classrooms. Each Ohio public or private middle/junior high and high school can receive one CD. Learn how you can keep your science classroom safe and pick up a CD for your school. *Continued in Session H11 (Repeated in Sessions C15 & D15).*

Presented by: Janet Struble, SECO (Science Education Council of Ohio)
Gene Lynn, SECO (Science Education Council of Ohio)

Grade Levels: 4-12

Room: 2119



G13 Locally Focused Modules: Science Teachers, Science Students, and Scientists Collaborating for Understanding



TPS teachers were aligned with UT scientists to collaborate during science units with local focuses and videotaped to create modules. Included were Q & A discussions between the TPS teachers and the UT scientists as well as Q & A discussions between the TPS students and the UT scientists.

Repeated in Session H12.

Presented by: Andrea Milner, Adrian College
Kimberly Lemon, The University of Toledo
Gary Powell, The University of Toledo

Grade Levels: 4-12 (T, GS)

Room: 2121

G14 Scientists Are Needed to Protect Humanity from Complex Developments: The Case of Accelerated Global Warming Caused by Melting Methane Clathrates



Methane clathrates are ice with methane in it that melts a few degrees above the melting point of ice. As ocean bottom waters warm, methane escapes from melting clathrates themselves, plus from natural gas (85% methane) formerly trapped behind them. This accelerates global warming. Scientists are needed to solve such complex problems. **Repeated in Session H13.**

Presented by: Robert Vincent, Bowling Green State University

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 2122

G15 Individual Differences: Not Just the Math and Science Students. What about the Teachers and Professors?



Follow-up to session presented last year. Focus will be 391-person study on visualization and processing speed differences. Participants were undergraduate and graduate students at Owens Community College and BGSU. Members of audience will be recruited to partake in on-line study of math & science students, teachers, and professors.

Presented by: Richard Oldrieve, Bowling Green State University

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 2123



VENDOR SESSIONS

G16 Intelitek's Robotics Engineering Curriculum (REC): A Two-Year Robotics Course for Applied Science, Technology, Engineering, and Math Programs



An overview of Intelitek's Robotics Engineering Curriculum (REC) and its relevance to STEM. The curriculum assumes no previous robotics knowledge. Tactical interaction with the popular Vex Robotics Design System engages students in the lessons. Students gain hands-on knowledge about physics, technology, engineering and math while using their robot. **Repeated in Session H14.**

Presented by: Peter Mancini, Intelitek
Rob Smith, Depco

Grade Levels: 7-12, Faculty/Administrator

Room: 2118

G17 INFOhio Learning Commons and 21 Essential Things



Learn about 21st century learning skills and the INFOhio Learning Commons. This free professional development site includes lessons on applying new technologies to classroom environments. Find out about the Research Calculator and TRAILS. Learn how to develop teachers' and P20 students' digital, information, research and media literacy skills.

Presented by: Paula Nespeca Deal, INFOhio

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 2125



Earth/Space Science



General Science



Life Science



Mathematics



Pedagogy



Physical Science



Pre-Service



Technology

Session H (3:00 pm - 3:50 pm)

H1 How Are WE Like Slime? Incorporating Project Based Science in Your Biology Classroom

(LIMIT 26)



This presentation demonstrates the implementation of Project Based Science to teach active and passive transport in an urban classroom setting. We developed this as part of a Project Based Science course while participating in the IMPACT program at the University of Toledo.

Presented by: Elaine Dunn, Toledo Public Schools
Stacey Jackson-Harris, Toledo Public Schools
Tamara Smith, Toledo Public Schools

Grade Levels: 9-10

Room: 2100

H2 Research-Based Physical Science Experiences for K-3 Teachers (LIMIT 20)



This presentation will highlight hands-on, inquiry-based forces and motion lessons for K-3 teachers. Interactive demonstrations will be conducted with lesson plans provided for each participant. **Repeated in Session G3.**

Presented by: Tracy Huziak-Clark, Bowling Green State University
Katie Singer, Teacher & Chauntelle Flack, Teacher

Grade Levels: PK-3, Undergraduate

Room: 2103

H3 Online Engagement: Tools for Making Parents Partners



Parent involvement is critical to student success. How can teachers help parents get beyond the, "How was school today? Is your homework done?" stage to become more active and effective partners with you? In this session we will share easy, free online tools and resources to help you engage parents in supporting and extending the curriculum. **Repeated in Session G4.**

Presented by: Terry Herman, Bowling Green State University
Eric Calvert, Bowling Green State University

Grade Levels: PK-12 (M, T, P, GS)

Room: 2105

H4 Bringing Oceanographic Research to the Classroom



This interactive session will demonstrate how science research, technology and engineering aboard the research vessel JOIDES Resolution can be brought to the classroom to excite students about science research, and extend the teaching of fundamental concepts already in the curriculum. It is based on the presenter's recent shipboard experience. **Repeated in Session G5.**

Presented by: Jackie Kane, St. Ursula Academy

Grade Levels: 4-12

Room: 2107

H5 Electricity from the Sun: Solar Energy Activities for the Classroom



We will perform activities to learn about what factors affect the way solar panels work. Activities that I use with my high school students as well as activities for younger students that my classes performed with children at Imagination Station will be discussed. **Repeated in Session G6.**

Presented by: Scott Secrest, St. Francis de Sales High School

Grade Levels: 4-12

Room: 2109

H6 Factoring Polynomials Made Simple



We have rules for factoring numbers, so I used the same concept for factoring polynomials. It all depends on the number of terms in the polynomial expression. **Repeated in Session G7.**

Presented by: Beryl Stemen, Lourdes College and Owens Community College

Grade Levels: 7-12, Undergraduate

Room: 2110

H7 STEM: Engineering, The Designed World, and Technological Literacy



Presenters will unfold a practical view of STEM and how it is applied to Engineering, The Designed World, and Technological Literacy. The audience will gain new insight into contexts related to STEM. It will open minds and create new viewpoints of this developing area of study beyond the classroom walls. **Repeated in Session G8.**

Presented by: Albert Rossner, Bowling Green State University

Grade Levels: 4-12, Undergraduate

Room: 2111

H8 Teaching Math Facts Using Strategies



Are you tired of watching students count to solve simple math facts? Would you like your math students to feel more confident? Come and learn how to teach your students addition and subtraction facts using strategies and games. Also, learn an alternative way to solve multiplication and division facts for those who cannot memorize them. **Repeated in Session G9.**

Presented by: Desi Ruiz, Sylvania Schools

Grade Levels: 1-5

Room: 2113



H9 Engaging Students with Wildlife (LIMIT 25)



Students can make real world connections through exciting learning experiences tied to the revised standards-based Life Sciences curriculum. Nature's Nursery custom programs feature live animals to stimulate questioning and observation of adaptations, behaviors, survival strategies, life cycles, predator-prey, food webs, and environmental changes. **Repeated in Session G10.**

Presented by: Laura Zitzelberger, Nature's Nursery Center for Wildlife Rehabilitation and Education
Bill Hoefflin, Nature's Nursery Center for Wildlife Rehabilitation and Education

Grade Levels: PK-12, Undergraduate

Room: 2115

H10 Making Sense of Number Sense Using the Developmental Mathematics Assessment



The Developmental Math Assessment (DMA) is a diagnostic measure of students' number sense understanding. In this session, learn about the research that explains the learning progression of Number Sense concepts and try out some aspects of the DMA and Classroom Interventions associated with the program. **Repeated in Session G11.**

Presented by: Michelle Shafer, Rossford Schools
Diane Burtchin, Rossford Schools

Grade Levels: PK-3

Room: 2117

H11 Ohio Total Science Safety System (OTSSS)



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Gene Lynn, SECO (Science Education Council of Ohio)

Grade Levels: 4-12

Room: 2119



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Repeated in Session G13.

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Kimberly Lemon, The University of Toledo
Gary Powell, The University of Toledo

Grade Levels: 4-12 (T, GS)

Room: 2121

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Presented by: Robert Vincent, Bowling Green State University

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

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Presented by: Peter Mancini, Intelitek
Rob Smith, Depco

Grade Levels: 7-12, Faculty/Administrator

Room: 2118



Earth/Space Science



General Science



Life Science



Mathematics



Pedagogy



Physical Science



Pre-Service



Technology

H15 Personal Learning Networks – Your Own Custom Professional Development Toolbox

Our Personal Learning Networks used by the Teacher’s Lounge, local professional organizations and journals. The wide, wild world of the Internet has enabled us to go global! But who has the time to sift through thousands of online search results? Discover tools and resources you can use today!

Presented by: Renee deValpine, WGTE Public Media
Betsy Hood, WGTE Public Media

Grade Levels: PK-12, Undergraduate, Faculty/Administrator (Professional Development)

Room: 2123

H16 Meeting the STEM Initiative with INFOhio: Science, Math and Technology Resources



INFOhio, our state school library network, provides support for state education initiatives that emphasize STEM and 21st century learning. Find out about excellent online resources including authoritative STEM reference materials for students, and collaboration and professional development opportunities for teachers through INFOhio, the INFOhio Learning Commons and Internet2.

Presented by: Paula Nespeca Deal, INFOhio

Grade Levels: PK-12, Undergraduate, Faculty/Administrator

Room: 2125

Presenters

Fredrick Andres, Bowling Green State University

Nate Ash, Perrysburg Schools

Lisa Bartholomew, Regina Coeli School

Susan Bastian, Sylvania Franciscan Academy

Debra Bercher, Lourdes College

Jennifer Berk, Metroparks of the Toledo Area

Jahnine Blosser, Toledo Public Schools

Daniel Brahier, Bowling Green State University

Diane Burtchin, Rossford Schools

Larry Caffro, Maumee high Schools

Linda Calcamuggio, The Toledo Zoo

Eric Calvert, Bowling Green State University

Daneen Cole, Teacher

Steve Crumbacher, eTech Ohio

Kevin Czajkowski, The University of Toledo

Ann Darke, Bowling Green State University

Jon Darkow, Seneca East high Schools

Paula Nespeca Deal, INFOhio

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Elaine Dunn, Toledo Public Schools

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Kay Hoane, Mother Hubbard's Learning Cupboard

Bill Hoefflin, Nature's Nursery Center for Wildlife Rehabilitation and Education

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Sharyn Lininger, St. Wendelin Catholic School

Gene Lynn, SECO (Science Education Council of Ohio)

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Peter Mancini, Intelitek

Branden May, Toledo Public Schools

Judith McCrory, The University of Findlay

Julie McIntosh, The University of Findlay

David Meel, Bowling Green State University

Andrea Milner, Adrian College

Joshua Minor, The Toledo Zoo

Karen Mitchell, Metroparks of the Toledo Area

Cynthia Molitor, Lourdes College

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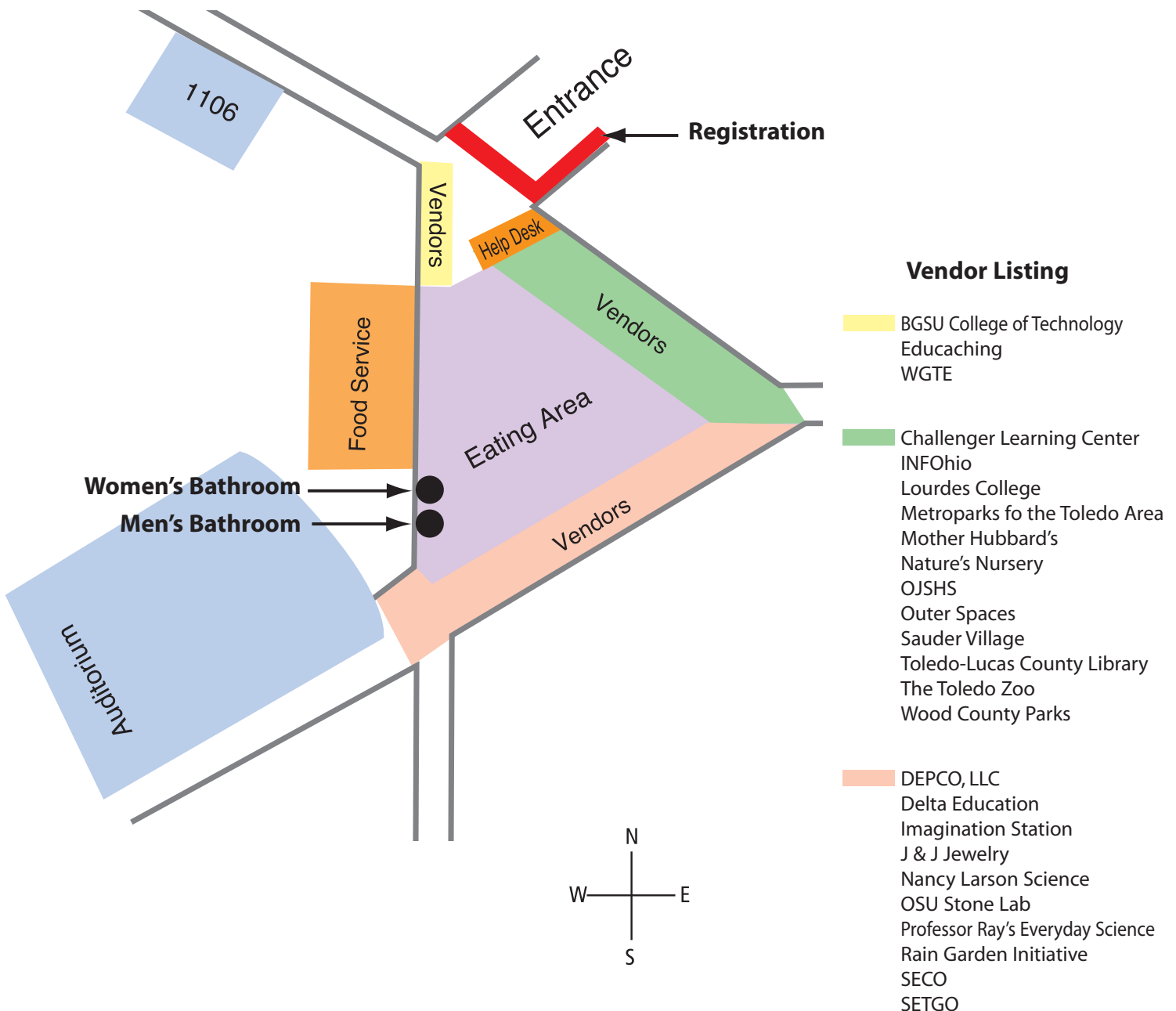
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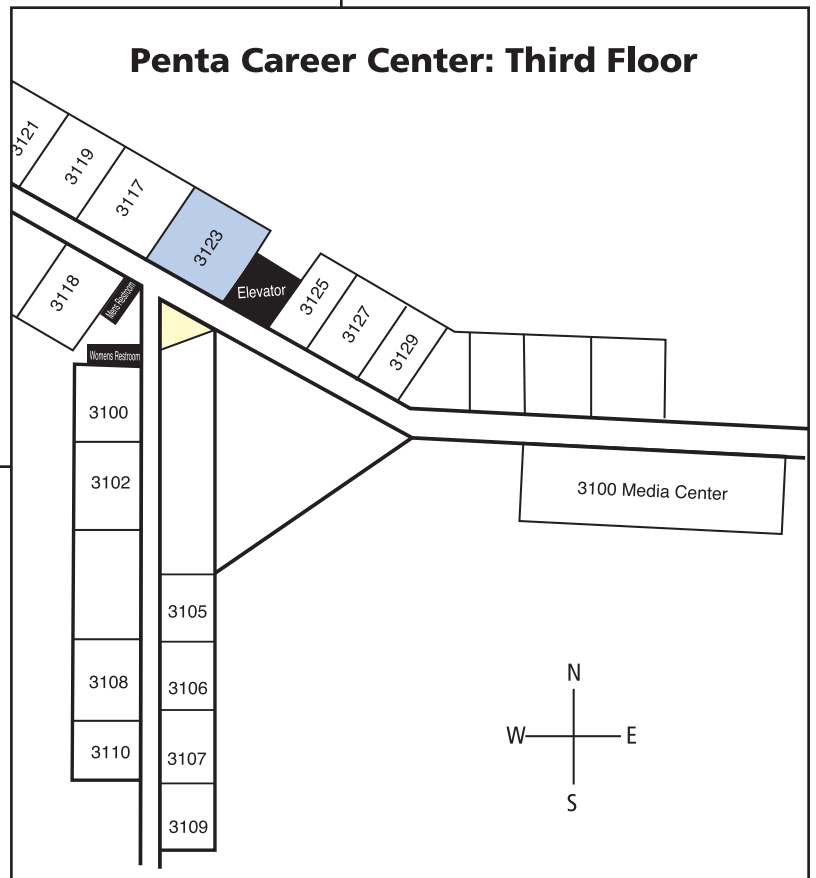
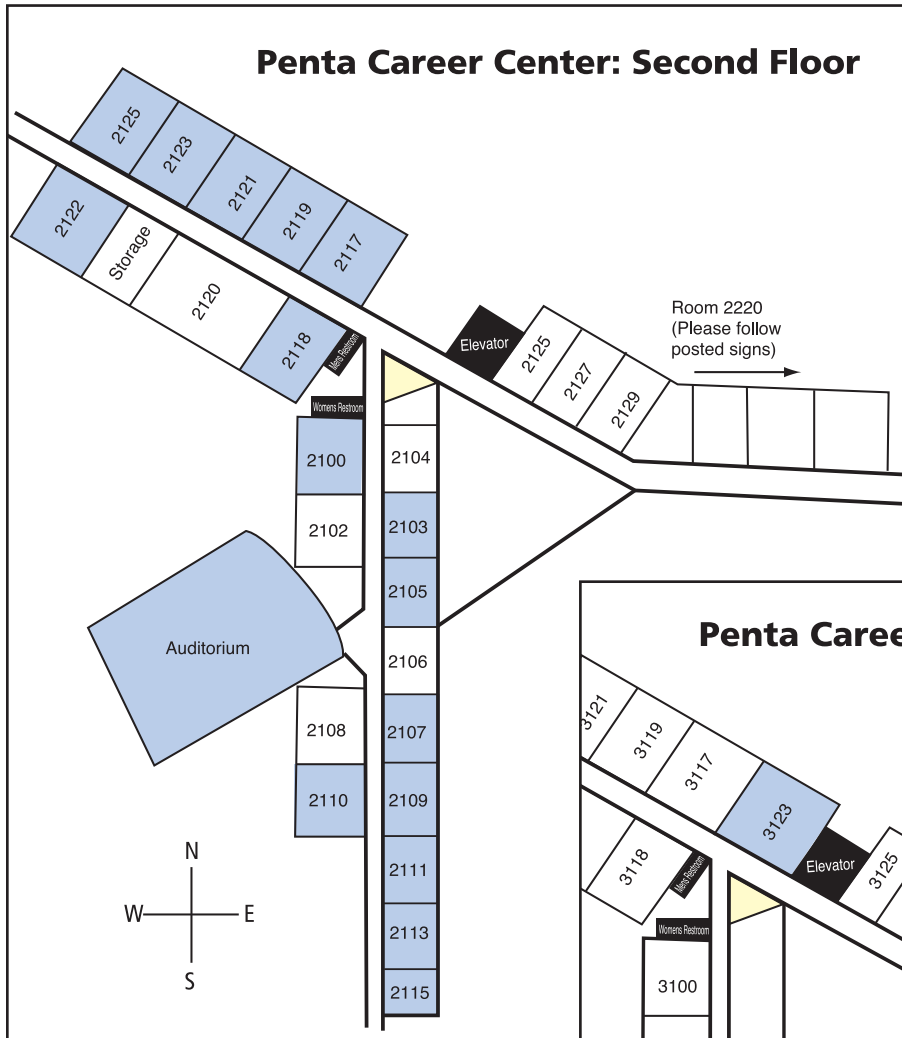
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Penta Career Center Building Maps

Penta Career Center: First Floor



Penta Career Center Building Maps cont.



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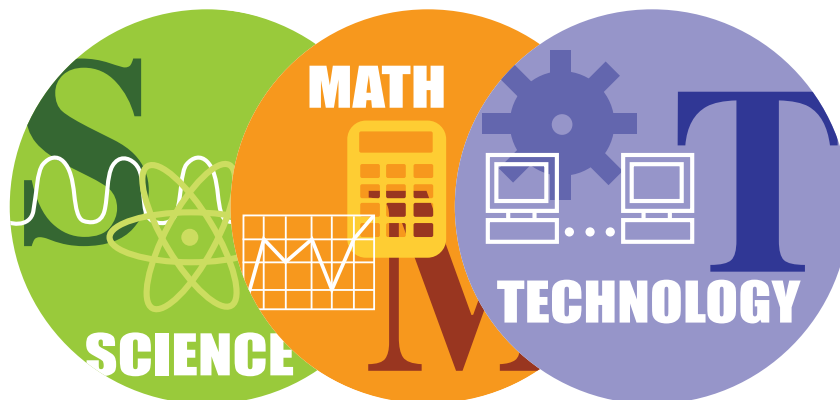
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Acknowledgments

We wish to acknowledge the following individuals who worked so hard to make this Symposium a success:

NWO Staff:

Bob Midden
Jessica Belcher
Michelle Klinger
Lisa Addis
Nancy Hoose



Northwest Ohio Symposium on Science,
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The 2010 NWO Symposium on Science, Mathematics, and Technology Teaching is sponsored by the Northwest Ohio Center for Excellence in STEM Education and its partners: BGSU-COSMOS, Lourdes College, Owens Community College, The University of Findlay, and The University of Toledo.

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