HASTI: The Next Generation

Hoosier Association of Science Teachers, Inc.

From molecules to organisms: Structures and processes

Heredity: Inheritance and Variation of Traits

Energy

Earth's Systems

43rd Conference Program

Waves and Their Applications in Technologies for Information Transfer
Welcome to the 43rd annual HASTI Conference! Due to the inspirational legacy of many HASTI members, Hoosier science teachers have consistently enjoyed one of the country's largest and most vibrant state science conferences. As we express gratitude for our predecessors and their foundational work, it is equally as important to look toward HASTI’s future and “The Next Generation” of teachers, content, pedagogy, and technology. You’ll experience a vast and exciting array of concurrent sessions that will nurture your ability to create meaningful learning experiences for your students. Our two keynote speakers represent the next generation: Tyler DeWitt, an innovative science educator who uses technology to merge “classic with the new,” and Ted Willard, an NSTA expert who will discuss the Next Generation Science Standards. This year’s HASTI social will take place on the campus of IUPUI and generously sponsored by its School of Science so HASTI conference attendees will have an opportunity to tour the new state-of-the-art labs and meet faculty. Let’s continue to forge ahead as a collective group of science educators by continuing to support this conference and high quality education in our classrooms. Have a great time this year!

Sherry Annee  
HASTI Conference Chair
### Conference and Special Events At-A-Glance

<table>
<thead>
<tr>
<th>Wednesday, February 5</th>
<th>Thursday, February 6</th>
<th>Friday, February 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 a.m. - 6:30 p.m.</td>
<td>7:00 a.m. - 6:30 p.m.</td>
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<td>Extended Workshops</td>
<td>Exhibit Hall Grand Opening and Ribbon Cutting</td>
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<td>8:00 a.m. - 5:00 p.m.</td>
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<td>Exhibits Open</td>
<td>Concurrent Sessions</td>
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<td>8:30 a.m. - 10:15 a.m.</td>
<td>Sagamore Ballroom 3</td>
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<td>Concurrent Sessions</td>
<td>General Session Featured Speaker: Ted Willard, NSTA</td>
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<td>10:30 a.m. - 12:00 p.m.</td>
<td>“Standards for the Next Generation”</td>
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<td>Sagamore Ballroom 3</td>
<td>12:30 p.m. - 3:15 p.m.</td>
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<td>Remarks, Glenda Ritz, State Superintendent of Public Instruction</td>
<td>Concurrent Sessions</td>
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<td>General Session Featured Speaker: Tyler DeWitt</td>
<td>2:00 p.m. - 3:30 p.m.</td>
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<td>“Generations Merge: How to Incorporate Next Generation Tools, Technology and Methods into Classic, Transformative, Quality Teaching”</td>
<td>Field Trip</td>
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<td>12:30 p.m. - 3:15 p.m.</td>
<td>Indianapolis Zoo</td>
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<td>Concurrent Sessions</td>
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<td>3:30 p.m. - 5:00 p.m.</td>
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<td>Association Meetings</td>
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<td>5:00 p.m. - 6:30 p.m.</td>
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<td>HASTI Social</td>
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<td>IUPUI School of Science</td>
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<td>IUPUI School of Science</td>
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### Zoo Field Trip

**Get a Behind-the-Scenes Look at the Indianapolis Zoo**

**Friday, February 7 • 2:00 p.m. – 3:30 p.m.**

Come see all the Indianapolis Zoo has to offer! Learn about the zoo’s educational programming, get a behind-the-scenes look, and explore the exhibits in the Oceans building. The bus will board at the Maryland Street lobby at 1:30 p.m., and will return to the Indiana Convention Center approximately 3:45 p.m. If you would like to take advantage of this unique opportunity, please visit the registration desk to sign up.

**Fee: $15**
## Table of Contents

Welcome from the Conference Chairperson ................................................................. Inside Front Cover
Table of Contents ........................................................................................................... 2
Conference Information and Events ............................................................................ 3
Where Should I Go? What Should I Do? ...................................................................... 4
Conference Committee ................................................................................................ 4
HASTI Board of Directors .......................................................................................... 5
HASTI Social ................................................................................................................. 6
Thank You to Sponsors ................................................................................................. 6
IABT Events .................................................................................................................. 7
IESTA Breakfast .......................................................................................................... 7
Extended Workshops ..................................................................................................... 8-10
Featured Speakers:
  Tyler Dewitt, *Generations Merge: How to Incorporate Next-Generation Tools, Technology and Methods into Classic, Transformative, Quality Teaching* ................................................................. 12
  Ted Willard, NSTA, *Standards for the Next Generation* ........................................ 13
Concurrent Sessions .................................................................................................... 14-44
2013 PAEMST Finalists .............................................................................................. 46
The Hoosier Science Teacher ....................................................................................... 46
Cheryl Cowan Memorial Award for Innovative Elementary Science Teaching .......... 47
Charlotte M. Boener Award for Innovative Middle School Science Teaching .......... 48
Distinguished Award for Innovative College Science Teaching ......................... 49
Presidential Award for Excellence in Mathematics and Science Teaching .............. 50
HASTI Past Presidents ............................................................................................... 51
2014 HASTI Sessions by Audience .......................................................................... 53-57
2014 HASTI Conference Strands .............................................................................. 58-63
2014 HASTI Conference Exhibitors .......................................................................... 64
Exhibit Hall D Floor Plan ........................................................................................... 65
Indiana Convention Center Map ................................................................................ 66-67
Index of Presenters ..................................................................................................... 68
College Credit Information, and Professional Growth Points .................................... 69-71
Conference Planner ................................................................................................... Indside Back Cover
Meeting Locations
Concurrent sessions will be held in the Indiana Convention Center. The Exhibit Hall is located in the Convention Center Hall D. The headquarter hotel is the Indianapolis Marriott Downtown. The social will be held at the IUPUI School of Science. The floor plan of the Convention Center is on pages 66–67 and the Exhibit Hall map on page 65.

Conference Office
The HASTI Conference office is located in Conference Room West, located on the first floor near the escalators in the Maryland Street Lobby. Presenters, please feel free to store your presentation materials in the office during convention hours. Please stop by the registration desk or call the HASTI Office, (877) 427-8499, with any questions you may have.

Registration
The Registration Area, located near Hall D of the Convention Center, will be open during the following hours:
Wednesday, February 5, 2014 ..................................11:00 a.m. - 6:30 p.m.
Thursday, February 6, 2014 .......................................7:00 a.m. - 6:30 p.m.
Friday, February 7, 2014 ..........................................7:00 a.m. - 12:00 p.m.

Presenters
Presenters should check in at the Information Booth in the Registration Area. Equipment and materials for presentations may be stored in the HASTI Conference Office, Conference Room West.

Exhibit Hall D
Registration badges are required for admission to the Exhibit Hall. Exhibits, located in Hall D of the Convention Center, will be open for viewing during the following hours:
Thursday, February 6, 2014 .......................................8:00 a.m. - 5:00 p.m.
Friday, February 7, 2014 ..........................................8:00 a.m. - 12:30 p.m.

Coat Room
Coat racks are available in the East Lobby Chamber, located at the bottom of the Hyatt escalators in the Convention Center. Any personal items will be left at your own risk. HASTI will not be responsible for lost or stolen items.

Program Changes
Last minute changes to a program of this size are inevitable. If changes are necessary, please be sure to note the program changes sheet provided with your program and also see any changes on the change board near the Registration Area.

Audio-Visual Equipment
Presentation rooms will be equipped according to the presenter requests for an LCD projector, overhead projector, screen, and/or VCR/DVD player. For any last-minute audiovisual needs, presenters must arrange and pay for their own equipment. Markey’s Audio Visual is the designated AV company. You may contact Brian Solomon at Markey’s AV at (317) 780-3951.

Evaluations
HASTI Conference evaluations will be online in 2014. Please watch for an email the week after the conference.

Name Badges
Your registration package should include a name badge, program book and ticket for a complimentary Indiana Mineral Aggregate mineral kit. Your name badge is your “ticket of admission” to all sessions, exhibits, and other activities except those for which a separate fee is stated (extended workshops).

Raffle Tickets
You will receive a raffle ticket as you enter general session each day. Your ticket will be entered in a drawing to win door prizes. Winners will be announced at the conclusion of each general session. You must be present to win.

Sessions and Times
Extended workshops, concurrent sessions, and association meetings will be held at the Indiana Convention Center. A 15-minute break between sessions is built into the program to allow adequate time to get to sessions.

Information Booth: Outside Exhibit Hall D
The HASTI Booth will provide information on membership and services. HASTI items will be available for purchase. The HASTI Booth will have answers to conference questions, details on associated groups, and information on area restaurants and attractions. The booth will be open the following hours:
Thursday, February 6, 2014 .......................................7:00 a.m. - 4:00 p.m.
Friday, February 7, 2014 ............................................7:00 a.m. - 4:00 p.m.

Message Board
A message board for conference attendees will be set up in the registration area by Hall D in the Convention Center. Please view the message board for conference updates.

Where to Eat
Maryland Grille, located in the Wabash concourse near the elevators to the Marriott Skywalk, will be open from 10:30 a.m. until 2:30 p.m. Thur. and Fri. Maryland Espresso will also be open from 7 a.m. to 11 a.m. on Thur. and Fri.
Other food and beverage locations:
Hyatt Regency..........................................................Lobby Area
Marriott Hotel......................................................Champions Restaurant
Circle Centre Food Court............................ Second Level Circle Centre Mall
JW Marriott..........................................................High Velocity
IS THIS YOUR FIRST HASTI CONFERENCE?

Where Should I Go? What Should I Do?

Find out where to go and what to see to make your first HASTI Conference a success.

8:00 a.m. Thur. and Friday, Sagamore Ballroom 3

Presented by: John Moore, President of Hoosier Association of Science Teachers, Inc.

2014 Conference Committee

Conference Chair: Sherry Annee
President: John Moore
Vice-President: Kate Baird
Life Science: Sherry Annee
Physical Science: Rich Perry
Earth Science: Tina Harris
Interdisciplinary K-6: Kristen Poindexter
Interdisciplinary 7-12: Carrie Sanidas
Biology: Donna Keller
Ecology / Environment: Tom McConnell
Chemistry: Claire Baker
Physics: Charles Emmert
Science, Technology, and Society: Sherry Annee
Science Education: Ed Mottel, Danae Wirth and Shannon Hudson
Awards: Danae Wirth
PGPs: Edward Frazier
Exhibits: Charlie Flack
Raffle: Frank Drumwright
Website / Publicity: Marvin Giesting
Special Meetings: Edward Frazier
Conference Office: Elizabeth Frazier
Conference Planning & Registration: Laura Jackson and Tammie Corbett, cmcglobal

Enjoy a cup of coffee with Exhibitors and Colleagues!

Available each morning in the Lounge Area of Exhibit Hall D

Courtesy of
Hoosier Association of Science Teachers, Inc.
GET TO KNOW YOUR HASTI DIRECTORS

by the HASTI Booth at the Registration Area and Meet Your HASTI Director.

HASTI BOARD MEMBERS

President ............................................................ John Moore
Vice President ...................................................... Kate Baird
Secretary .......................................................... Claire Baker
Treasurer .......................................................... Greg McCurdy
Immediate Past President ................................. Sherry Annee

Board Members:
District I Director ............................................. Carrie Sanidas
District II Director .............................................. Danae’ Wirth
District III Director ............................................. Liz Schemm
District IV Director ............................................. Marva Moore
District V Director ............................................. Frank Drumwright
District VI Director ............................................ Tom McConnell
District VII Director .......................................... Dianna Cooper
District VIII Director .......................................... Rich Perry
District IX Director .......................................... Ginger Shirley

Elementary School ........................................... Kristen Poindexter
Middle-Junior High School ................................. Jane Hunn
High School .................................................... Donna Keller
College .......................................................... Ed Mottel
At Large 1 ...................................................... Carl Wilms
At Large 2 ...................................................... Shannon Hudson

Ex-Officio Members:
Resident Agent .............................................. Edward Frazier
DOE Science Consultant ................................. Jeremy Eltz
NSTA .............................................................. Janet Struble

Publications:
Editor, Sci-Ed-ogram .............................................. Vacant
Editor, The Hoosier Science Teacher ................. Patty Zeck

CONFERENCE EVALUATION

HASTI Evaluations will be ONLINE in 2014!

Please watch your email the week after the conference to complete the evaluation.
We greatly appreciate your input! Earn a chance to win a free HASTI membership.
HASTI Social

hot food! free drinks! good company!

Join your fellow colleagues in a wonderful reception generously hosted by the IUPUI School of Science!

Mingle with friends, enjoy refreshments, interact with IUPUI students and faculty, and tour the new forensic science and other research labs!

science!iupui

Thursday, Feb 6th
5:00 - 6:30pm

You must have a HASTI Social ticket to attend. Stop by conference registration to pick up your ticket!

Buses will depart from the Maryland Street lobby beginning at 4:45 p.m. and will depart from the IUPUI School of Science at 6:30 p.m.

Thank You!

HASTI Conference Sponsors

Social.................................................................IUPUI School of Science
Indiana Mineral Aggregate Association..............................................Mineral Kits
Graduate Level Credit.................................................................Indiana University-Purdue University Columbus
Join the Indiana Association of Biology Teachers for the special events being offered this year at HASTI!

Thursday, February 6
• IABT Quick Hits (Room 103, 2:30 p.m.) – Great practical ideas for the classroom which is always a HASTI favorite so don’t miss this one!!

Friday, February 7
• IABT Breakfast Membership Meeting and Quicker Hits (Room 103, 7:30 a.m.)
  Announce IABT Excellence in Teaching Award winner, Door Prizes and Election of officers
• ALL are welcome

2013 IABT Officers:
Past President: Chris Donovan  donovanc@rushville.k12.in.us
President: Heather Briggs  hbriggs@bishopluers.org
President Elect: David Butler  dbutler@swell.k12.in.us
Secretary: Alyce Myers  amyers@njsp.k12.in.us
Treasurer: John Gensic  john.gensic@gmail.com

For IABT membership information or support please email us at: indianabiologyteachers@gmail.com

Indiana Earth Science Teachers Assoc. Breakfast & Rock Raffle

Friday, February 7, 2014, 7:30 a.m. – 8:15 a.m.
TGI Fri.s, 501 W. Washington St., Indianapolis, IN 46204
(Located near the JW Marriott Hotel)

Enjoy a hot breakfast buffet and guest speaker.
Meet with people interested in discussing earth science education.

The 6th annual rock raffle at a HASTI conference will follow immediately after the IESTA breakfast!

(IESTA members free, non-members $5)
Extended Workshops will be located at the Indiana Convention Center, 100 S. Capitol Avenue, Indianapolis, IN 46225. HASTI registration does not begin until 11 a.m.; therefore, please go to the appropriate location to attend your 8 a.m. Extended Workshop. Extended Workshops are only available to pre-registrants.

Wednesday, February 5, 2014

**Home and School Science Activities**  
*Physical Science*  
Promote literacy by exploring relationships of seemingly unrelated events including gravity, inertia, centripetal force, pressure, atoms, molecules and more. Materials provided.  
Presenter (s): Bernard Horvath (retired)  
Fee: $35; Limited to 50 attendees  

**Teaching Physics for the 1st Time**  
*Physics*  
If you are new to the teaching of physics of ICP, join us as we use the 5E model to work through an entire learning cycle.  
Presenter (s): Elaine Gwinn (Shenandoah High School)  
Fee: $50; Limited to 30 attendees  

**Historical Developments in Electricity and Magnetism**  
*Physics*  
Participants will construct working replicas of historical electrical devices, including the electroscope, Leyden jar, electrophorus, Voltaic pile, electromagnet, Faraday motor, dc motors, and more.  
Presenter (s): Joel Bryan (Ball State University)  
Fee: $20; Limited to 30 attendees  

**ED2: Earth Day Every Day**  
*Ecology/Environment*  
Interested in learning more about community connections to your content? ED2 provides hands-on activities that directly link to outside organizations to STEM. Join us!  
Presenter (s): Terri Hebert (Indiana University South Bend), Tracy Slattery (South Bend Community School Corp Central Office)  
Fee: $0; Limited to 25 attendees  

**Exploring the Moon with NASA- Lunar Rock and Meteorite Certification Workshop**  
*Earth Science*  
Educators will be qualified to borrow lunar as well as meteorite samples from Johnson Space Center to use in Project Based Learning.  
Presenter (s): Susan Kohler (NASA Glenn Research Center)  
Fee: $0; Limited to 40 attendees
**43rd Annual Conference**

**EXTENDED WORKSHOPS**

**Wednesday, February 5, 2014**

**8:00 a.m.**

**Science in Seconds**

*Science Education*

Join us for inquiry-based experiments that are adaptable for your middle level classroom and connected to the standards. Goody bags to take home too!

Presenter (s): Teri Folta (Riverside Junior High)

*Fee: $10; Limited to 30 attendees*

**Explore STEM Learning with NASA Ignite!**

*Interdisciplinary*

Join educators from NASA Ignite! to learn about the hands-on STEM activities available from NASA education.

Presenter (s): Adrienne Evans Fernandez (WisdomTools, Inc./NASA Ignite!), Julie Muffler

*Fee: $20; Limited to 40 attendees*

**Wednesday, February 5, 2014**

**9:00 a.m.**

**BioBuilder: Ready-to-use Classroom and Lab Curricula that Integrates Engineering Into Biology**

*Brebeuf Jesuit Preparatory School*

*Interdisciplinary*

BioBuilder connects students to current research questions and asks them to use synthetic biology to solve real world problems through engineering, design, and biotechnology.

*Please note, this session meets at Brebeuf Jesuit Preparatory School, 2801 W. 86th Street, Indianapolis, IN 46268*

Presenter (s): Natalie Kuldell (MIT/BioBuilder Educational Foundation), Sherry Annee (Brebeuf Jesuit Preparatory School), Kari Clase (Purdue University), Jenna Rickus (Purdue University), Rebecca Schini (Greenfield Central High School)

*Fee: $20; Limited to 12 attendees*

**Wednesday, February 5, 2014**

**1:00 p.m.**

**Bring the Ocean to Your Classroom while Enhancing STEM Instruction – Ocean Waves, Tides, Upwelling, and El Ninos**

*Room 101*

*Interdisciplinary*

Come learn about how to use Maury Project Modules to bring physical oceanography topics into your classroom while also enhancing STEM instruction. Free PowerPoint documents and Maury Project modules will be provided to attendees.

Presenter (s): Kevin Spingler (La Lumiere School)

*Fee: $0; Limited to 30 attendees*

**Working “in Space” with LEGO**

*Room 102*

*Science/Technology/Society*

Labs simulating working “in space” with LEGO models (simple/complex machines and robotics) along with astronauts. Experience following directions and difficulties of working in space.

Presenter (s): Loretta Kosloske (Knox Community Middle School)

*Fee: $0; Limited to 30 attendees*

**Hands-On with Nuclear Science**

*Room 103*

*Physics*

Use magnetic marbles to teach nuclear science (radioactivity, reactions, etc.). Take home your own model “nuclei” and lessons/activities. For teachers grades 6-12.

Presenter (s): Micha Kilburn (Joint Institute for Nuclear Astrophysics)

*Fee: $0; Limited to 24 attendees*
**Hands-On Experiments Using a Mini Gas Chromatograph**

*Chemistry*

In this workshop, participants will be presented with a brief overview of what gas chromatography is and how it works before being let loose in groups to learn how to run the Mini GC Plus and then design and write up their own experiments that can be used.

Presenter(s): Cheryl Wistrom (Saint Joseph’s College)

Fee: $0; Limited to 24 attendees

**Project Learning Tree® (PLT) GreenSchools!**

*Ecology/Environment*

Project Learning Tree® (PLT) GreenSchools! inspires students to take responsibility for improving the environment at their school, home, and in their community.

Presenter(s): Shannon Hudson (Tuttle Middle School), Donna Rogler (Department of Natural Resources)

Fee: $0

**Climate Change Exploration with NASA**

*Earth Science*

Participants will explore the Climate Kids, Eyes on the Earth educator materials and use real time data to explain the affects of climate change.

Presenter(s): Susan Kohler (NASA Glenn Research Center)

Fee: $0; Limited to 40 attendees

**Mars, Magnetism and MAVEN (the next big mission to Mars)**

*Interdisciplinary*

Expand your students’ appreciation of magnetism, the atmosphere, and climate. In this workshop of activities related to the “MAVEN Mission to Mars” (launch date 18-Nov-2013).

Presenter(s): Candice Kissinger (Tecumseh JHS)

Fee: $30; Limited to 25 attendees

**Monarchs in the Classroom: Creating Citizen Scientists**

*Ecology/Environment*

Participants delve into to get schools/students as involved as citizen scientists with Monarchs in three national programs: Monarch Watch, Minnesota Monarch Larva Monitoring Project, and Journey North.

Presenter(s): Kirsten Carlson (Consultant)

Fee: $25; Limited to 25 attendees
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Purdue Agriculture

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ETHOS Science Center
Encouraging Technology & Hands On Science

ETHOS, a not-for-profit science education organization, supports STEM initiatives within the school district and after-school programming.

ETHOS provides refurbishment and PD support for STC, FOSS, GEMS, BBS and Lab-Aids inquiry–based science kits.

ETHOS is contracted by Immersion Learning to produce science kits for Immersion’s curriculum.

For more information, visit www.ethosinc.org

Tyler DeWitt

Tyler DeWitt is a research scientist, high school teacher, and digital content creator whose free online chemistry tutorial series has influenced science instructors across the nation to change how they think about teaching and learning in the STEM fields. His goal is to replace the often stale state of science, technology and math textbook teaching with systems for learning that promote critical thinking and “360 degree” understanding. Science, he believes, can be much more accessible (and entertaining) for students. Tyler has taught high school Biology and Chemistry in the United States and South Korea. He received a Ph.D. in Microbiology from MIT, where he teaches Chemistry in a summer program to high school students from underserved backgrounds. Tyler works as Teaching Lead at the educational technology startup Socratic.org, serves as a program coordinator for the MIT+K12 video outreach project, and as an MIT student was a National Science Foundation Fellow and a Graduate Resident Tutor.

Generations Merge: How to Incorporate Next-Generation Tools, Technology and Methods into Classic, Transformative, Quality Teaching

Join Tyler as he discusses the cool new stuff that the “next generation” of teachers are doing in their classrooms: with games, with video, with smartphones, with tablets, with Google Glass, and more! Learn how to tie those strategies into a larger curricular framework, by coupling them with meaningful assessment and thoughtful pedagogy, and how these technologies and methods change—and how they don’t change—the traditional classroom relationship between teachers and students.

Opening Remarks

Glenda Ritz, State Superintendent of Public Instruction

Don’t forget to collect your raffle ticket as you enter General Session! Your ticket will be entered in a drawing to win a door prize. Winners will be announced at the conclusion of general session. You must be present to win!
Ted Willard

Ted Willard is a Program Director of NGSS@NSTA at the National Science Teachers Association (NSTA). In that role, he oversaw NSTA’s feedback during the development of the Next Generation Science Standards (NGSS) and now coordinates NSTA’s efforts to support teachers in implementation of NGSS.

Prior to joining NSTA two years ago, Ted spent 12 years at Project 2061. There he was responsible for the development of the growth-of-understanding maps published in Atlas of Science Literacy, Volume 2. Ted also was involved in many other areas of Project 2061’s efforts towards standards-based education reform including curriculum resources development, assessment development, science education research and teacher professional development.

Earlier in his career, Ted spent five years teaching high school physics in Asheville, North Carolina and five years editing elementary and high school science textbooks for the Globe Book Company (now part of Pearson) and Harcourt Brace School Publishers (now part of Houghton Mifflin Harcourt).

Ted holds a B.S. in earth, atmospheric, and planetary science from the Massachusetts Institute of Technology.

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Standards for the Next Generation

Friday, February 7, 2014, 10:30 a.m.

A once-in-a-generation change is underway in science education with the release of the Framework for K-12 Science Education and the Next Generation Science Standards. These reports provide guidance for educators on how to help students engage in science and engineering practices such as modeling and argumentation to gain a deep understanding of the core ideas in each of the science disciplines as well as concepts such as causality and systems that cut across all disciplines. In addition, these reports describe a vision of STEM education where science and engineering are intertwined and connections to mathematics and English language arts are made explicit.

But while the Framework and NGSS have much to offer, they can take some getting used to. This session will provide a tour of both documents that highlights the overall vision they describe, explains their essential elements, and describes how educators can use them to improve teaching and learning right away and over the years to come.

Don’t forget to collect your raffle ticket as you enter General Session! Your ticket will be entered in a drawing to win a door prize. Winners will be announced at the conclusion of general session. You must be present to win!
### Thursday, February 6, 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Room</th>
<th>Level</th>
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<tr>
<td>8:00 a.m.</td>
<td><strong>So This Is Your First HASTI Conference?</strong>&lt;br&gt;Learn how to navigate the HASTI conference by learning tips to make your experience meaningful.&lt;br&gt;Presenter(s): John Moore (HASTI President)</td>
<td>Sagamore 3</td>
<td></td>
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<td>8:30 a.m.</td>
<td>Kinesthetic Activities for High School Classrooms&lt;br&gt;<em>Interdisciplinary</em>&lt;br&gt;Tired of only finding kinesthetic material for elementary and middle school students. This session will introduce you to some ideas that you can use in your high school classroom. You will leave with ideas that you can go home and implement right away at a low cost!&lt;br&gt;Presenter(s): Shannon Wenning (Castle High School)</td>
<td>Room 101</td>
<td>High School</td>
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<tr>
<td>8:30 a.m.</td>
<td>Indiana Science Initiative Seventh Grade Roundtable: Physical Science&lt;br&gt;<em>Physical Science</em>&lt;br&gt;The physical science strand of the Indiana Science Initiative working on two kits in one grading period.&lt;br&gt;Presenter(s): Joseph Bellina (Northern Indiana Science, Math, and Engineering Collaborative)</td>
<td>Room 102</td>
<td>Middle Level</td>
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<td>8:30 a.m.</td>
<td>Engaging Students in Mitosis and Meiosis&lt;br&gt;<em>Biology</em>&lt;br&gt;Participate in ten different teaching methods to increase students’ understanding of basic cell reproduction concepts.&lt;br&gt;Presenter(s): Mary Gobbett (University of Indianapolis), Smithson, Candace (Cowan Jr-Sr High School)</td>
<td>Room 103</td>
<td>High School</td>
</tr>
<tr>
<td>8:30 a.m.</td>
<td>Science Matters in Indiana – Even More Today Than Yesterday!&lt;br&gt;<em>Science Education</em>&lt;br&gt;Indiana has a Science Matters web site and resources that many teachers do not know about. Learn how to become part of this virtual community of science teachers.&lt;br&gt;Presenter(s): Kate Baird (IUPUC)</td>
<td>Room 104</td>
<td>General</td>
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<td>8:30 a.m.</td>
<td>Physics First: Building (or rebuilding) a Physics Program at your School&lt;br&gt;<em>Physics</em>&lt;br&gt;Results of a pilot program to teach physics to freshmen in a Title I high school, with resources to adapt it to other schools.&lt;br&gt;Presenter(s): Michael Kelley (William Henry Harrison High School), Thomas Jankowski</td>
<td>Room 105</td>
<td>High School</td>
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<td>8:30 a.m.</td>
<td>Physics Demonstrations: Vibrations, Waves, and Sound&lt;br&gt;<em>Physics</em>&lt;br&gt;Physics demonstrations about vibrations, waves, and sound will be presented that could be used in the classroom to present physics concepts and challenge students’ thinking.&lt;br&gt;Presenter(s): Charles Emmert (Noblesville High School)</td>
<td>Room 106</td>
<td>High School</td>
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<td>8:30 a.m.</td>
<td>FUN = Foods Help to Understand Nutrition&lt;br&gt;<em>Chemistry</em>&lt;br&gt;A simple chemistry experiment, identifying starch, leads students to a better understanding of plant biology, the foods they eat, the digestion process, and balanced nutrition.&lt;br&gt;Presenter(s): Suzanne Cunningham (Purdue University; Agronomy)</td>
<td>Room 107</td>
<td>Elementary</td>
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<td>8:30 a.m.</td>
<td>An Energy Efficient Way to Teach Energy&lt;br&gt;<em>Chemistry</em>&lt;br&gt;How can we teach all the energy concepts in an efficient manner that goes beyond the plug-and-chug of equations? We will weave together the complete energy picture using inquiry, labs, thought problems, and particle diagrams.&lt;br&gt;Presenter(s): Becky Creech (West Lafayette Jr/Sr High School), Jane Schott (West Lafayette Jr/Sr High School)</td>
<td>Room 108</td>
<td>High School</td>
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Don't forget to pick up Social Tickets at the HASTI Booth located across from Registration!
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<tr>
<th>Thursday, February 6, 2014</th>
<th>8:30 a.m.</th>
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| **Inquiry Learning in the Chemistry Classroom using POGIL**  
*Chemistry*  
POGIL (Process Oriented Guided Inquiry Learning) lessons will be shared from Flinn’s POGIL Chemistry book and other sources. Door Prize (Flinn’s POGIL book)!  
Presenter(s): Lori White (Cascade High School) | Room 109  
High School |
| **Bring the Ocean into Your Indiana Classroom While Enhancing STEM Instruction – Wind-Driven Circulation**  
*Interdisciplinary*  
Come learn about how to use Maury Project Module on Wind-Driven Circulation to bring a physical oceanography topic into your classroom while also enhancing STEM instruction. PowerPoint documents and Maury Project modules will be provided to attendees.  
Presenter(s): Kevin Spingler (La Lumiere School) | Room 110  
General |
| **Improving Student Learning through the Engineering of Compost!**  
*Life Science*  
Improve students’ understanding of decomposition using the engineering design process. Curriculum materials will be provided.  
Presenter(s): Nikki Rumpler, Stacy VanDerWeele (Riverside Intermediate School), Brenda Capobianco (Purdue University) | Room 116  
Elementary |
| **Relevant Communication**  
*Interdisciplinary*  
A practical approach to improve parental communication while simultaneously introducing more relevant technology into your classroom, e.g., blogs, Twitter, apps, emails and more.  
Presenter(s): Jeremy Johnson (Woodrow Wilson Middle School) | Room 117  
General |
| **Integrating the Math Practices and Nature of Science Standards**  
*Interdisciplinary*  
Teachers will discover points of integration between math and science through the math practices and nature of science standards.  
Presenter(s): Heather Baker, Bill Reed (Indiana Department of Education) | Room 120  
General |
| **Talk to Think, Listen to Understand, Write to Explain**  
*Science Education*  
Strategies will be presented to incorporate oral and written literacy into inquiry-based science activities. Emphasis is on talking and writing using the science notebook.  
Presenter(s): Carrie Sanidas, Laurie Little (Willowcreek Middle School) | Room 121  
Middle Level |
| **Indiana Science Initiative (ISI) in a 1:1 School**  
*Science Education*  
Using iPads to create digital science notebooks with more detail than we have ever been able to get from students using traditional science notebooks.  
Presenter(s): Jeff Chicki (Rensselaer Central Middle School), Becky Zacher | Room 122  
Middle Level |
| **Grey Matter: Learning and Teaching Science with the Brain in Mind**  
*Science Education*  
Experience through science activities how discoveries in cognitive neuroscience are applied to the NSES teaching standards and the principles of how students learn science.  
Presenter(s): Carolyn Hayes (Indiana University) | Room 136  
General |
| **Going Paperless: Electronic Lab Notebooks in the High School Classroom**  
*Science Education*  
See just how painless paperless can be! Learn how LabArchives Electronic Lab Notebooks (ELNs) will transform your students lab work and improve collaboration.  
Presenter(s): Erica Posthuma-Adams (University High School) | Room 137  
High School |
Thursday, February 6, 2014 8:30 a.m.

**STEM is Elementary**

*Science/Technology/Society*

Engaging classroom instruction through the lens of STEM.

Presenter(s): Sara Hunter (Union Elementary School), Ryan LaPlante (Stonegate Elementary School), Stephanie Compton (Pleasant View Elementary School), Kelly Masters (Eagle Elementary School), Rebekah Graham (Boone Meadow Elementary School)

**Developing Spatial Skills through Geographic Information Systems (GIS) Technologies**

*Science/Technology/Society*

This presentation will introduce technologies that enhance the learning of spatial skills when employed in an interdisciplinary science curriculum.

Presenter(s): Shireen Desouza (Ball State University)

**Collaboration Made Easy: Using Google Apps (and Chromebooks) in High School Classrooms**

*Science/Technology/Society*

Learn how Google Apps such as Google Docs, Google Slides, and more can be used to make collaboration between students easier.

BYOD!

Presenter(s): Rebecca Taylor (Lanesville Jr/Sr High School)

**Outdoor Science**

*General*

Use lessons from the Association of Fish & Wildlife Agencies’ Conservation Education Toolkit.

Help students use scientific method to design and conduct outdoor field investigations.

Presenter(s): Warren Gartner (Indiana Division of Fish & Wildlife)

**The Forces of Learning**

*Interdisciplinary*

This session will be hands on demonstrations of how you can help your students learn about forces in physics, chemistry and ICP.

Presenter(s): John Calhoun (Salem High School), Steve Riggle (Salem High School), Merle Callahan (North Daviess High School)

**Wonderful Weather!**

*Earth Science*

Learn how to make weather concepts exciting and easy to understand in your K-2 classroom!

Make examples to take back to your classroom.

Presenter(s): Kristen Poindexter (Spring Mill Elementary School), Cindy Moore (Spring Mill Elementary School)

**The Science in Soil**

*Ecology/Environment*

Hands-on demonstrations show how soil and water relationships are used in the classroom to teach earth and environmental sciences, math, chemistry, physics and general sciences.

Presenter(s): Sherry Fulk-Bringman (Purdue University)

**Empower Students as Environmental Stewards**

*Ecology/Environment*

Learn how to empower students as stewards of their environment, while making responsible decisions regarding our waterways. Join us in hands-on activities to incorporate in your classroom.

Presenter(s): Terri Hallesy (University of Illinois), Robin Goettel
Thursday, February 6, 2014 8:30 a.m.

**Engage Students and Bring Inquiry into the Human Body Systems Curriculum**  
Room 212  
Life Science  
High School  
Participate in a hands-on STEM lesson that incorporates critical thinking and real-life applications. By building body systems, students experience three-dimension and are actively engaged.  
Presenter(s): April Albrecht, Ben Poli (Anatomy in Clay Learning System)

Thursday, February 6, 2014 9:30 a.m.

**Hawaii Marine Science Seminar**  
Room 101  
Interdisciplinary  
High School  
This is an opportunity for teachers to learn how to recruit and escort their students to Hawaii for a two week program which mainly focuses on Marine Science.  
Presenter(s): Dennis O’Rourke (Retired), Steve Makurat

**Making Sense of Graphs in the ISI FOSS Force and Motion Module**  
Room 102  
Physical Science  
Middle Level  
We explore how to use graphs to enhance ideas about motion in the context of the ISI FOSS Force and Motion Module.  
Presenter(s): Joseph Bellina (Northern Indiana Science, Math, and Engineering Collaborative)

**Experience Purdue Agriculture through Careers in Plant Sciences and Admissions Preparation**  
Room 103  
Life Science  
General  
Give yourself a refresher on the exciting opportunities your students have in Plant Sciences, an industry that is growing in jobs and skills.  
Presenter(s): Amy Jones, Tracie Egger (Purdue University)

**Using an NSTA Student Chapter to Change Science Education through Hands-On Science Saturdays’ Workshops**  
Room 104  
Science Education  
General  
Science Saturdays’ Workshops offers K-6 students an opportunity to experience hands-on inquiry based activities with the next generation science standards and STEM areas in mind.  
Presenter(s): Kate Baird, Davida Hardin (Indiana University Purdue University Columbus)

**Q & A with Chemistry Modelers**  
Room 105  
Chemistry  
High School  
Join a discussion with Chemistry Modelers of various levels of experience as they share how the curriculum has transformed their teaching. Sample modeling lessons provided.  
Presenter(s): Erica Posthuma-Adams (University High School), Jeremy Horner (Carmel High School), Amanda Horan (Bishop Chatard High School), Ben Buehler (Blue River Valley Jr./Sr. High School), Stacey Summitt-Mann (University High School)

**“How Do You Know?” - The Most Important Question in Science**  
Room 106  
Physics  
General  
This session will showcase several examples of physics topics in which that one simple question can be used to facilitate authentic inquiry.  
Presenter(s): Joel Bryan (Ball State University)
Smiling Faces
Chemistry
A simple assay for the presence of starch teaches students about the similarity between plants and animals.
Presenter(s): Suzanne Cunningham (Purdue University; Agronomy)

Science Express Lessons for Chemistry, Biology, Physics and Earth Science Teachers
Science Education
Science Express is a delivery system for high school science classes. We are going to share some of the labs using the equipment.
Presenter(s): Bill Bayley, Zach Grigsby, Isidore Julien, Steven Smith, David Sederberg (Purdue University)

New Advanced Inquiry Labs for AP Chemistry from Flinn Scientific
Chemistry
Hands-on, interactive workshop to help you implement the revised curriculum for AP Chemistry! Join Flinn as we present two new guided-inquiry experiments that support the learning objectives and applied science practice skills your students will need.
Presenter(s): Joan Berry (Flinn Scientific)

Simon Says Have Fun With Anatomy
Life Science
Students unmotivated with the memorization of anatomy terms and processes? Come find activities and lessons we have found successful. Bring your own ideas to share!
Presenter(s): Ashlee Giordano (Northfield High School), Reena Marksthaler (Southwood High School)

Context and Content: Combining STEM Learning and History at Conner Prairie
Interdisciplinary
Discover Conner Prairie’s initiative to combine STEM learning and history. We will share findings, discuss techniques, and offer hands-on examples that provide ideas for the classroom.
Presenter(s): Jason Adams (Conner Prairie), Nancy Stark (Conner Prairie), Gail Brown (Conner Prairie)

Elementary Literacy Framework: Methods for Teaching Literacy in Elementary Science
Science Education
Elementary Literacy Framework Provided by the Indiana Department of Education’s Elemenatary Literacy Specialist, John Wolf.
Presenter(s): John Wolf (Indiana Department of Education)

Reciprocal Teaching: Using the Fab Four Reading Strategies to Improve Comprehension
Science Education
Reciprocal Teaching is a technique that uses four strategies to improve reading comprehension. Teachers will share how they incorporate this method in their science instruction.
Presenter(s): Carrie Sanidas (Willowcreek Middle School), Laurie Little (Willowcreek Middle School)

Bring the Ocean to Your Classroom While Enhancing STEM Instruction – Density-Driven Ocean Circulation
Interdisciplinary
Come learn about how to use a Maury Project Module to bring physical oceanography topics into your classroom while also enhancing STEM instruction. PowerPoint documents and Maury Project modules will be provided to attendees.
Presenter(s): Kevin Spingler (La Lumiere School)

Ignite the T in STEM!
Science Education
A fun and fast-paced smackdown session of resources, project ideas, tips and tricks for making connections to all parts of STEM through technology.
Presenter(s): Sara Hunter (Union Elementary School), Stephanie Compton (Pleasant View Elementary School), Ryan LaPlante (Stonegate Elementary School), Kelly Masters (Eagle Elementary School), Rebekah Graham (Boone Meadow Elementary School)
iPad Apps for STEM Activities in the Classroom
Science/Technology/Society
Discover many challenging, exciting iPad apps for doing STEM activities in the classroom. Practical tips for integrating iPad apps into the curriculum will be presented.
Presenter (s): Janet Jordan, Ken Jordan (IPFW)

Indiana Children & Nature
Ecology/Environment
The Indiana Children and Nature movement connects children, families and communities to nature. Learn how this effort can help you excite kids about outdoor investigations.
Presenter (s): Warren Gartner (Indiana Division of Fish & Wildlife)

Encouraging Student Thinking and Engagement through Effective Questioning
Interdisciplinary
Do your questioning strategies need a boost? Explore principles for designing effective questions along with strategies and structures that lead to increased student thinking and engagement.
Presenter (s): Deb Sachs (University of Indianapolis)

Science through the Seasons
Earth Science
K-2 teachers will learn how to incorporate children’s literature and easy science lessons to teach their students about the seasonal changes that happen each year.
Presenter (s): Kristen Poindexter (Spring Mill Elementary School)

Science Education for Global Citizenship: People, Food, Energy and Sustainability
Ecology/Environment
Discover interdisciplinary, hands-on activities to prepare all students to think critically and creatively about global challenges to the planet and human well-being.
Presenter (s): Meredith McAllister (Butler University)

Project Passenger Pigeon
Ecology/Environment
2014 marks the centennial of the extinction of passenger pigeons. Meet experts working on the Project Passenger Pigeon, which promotes conservation of species and habitat.
Presenter (s): Joanna Hahn (Indiana State Museum), Damon Lowe, Joel Greenberg

If You Put a Teacher in the Amazon...
Interdisciplinary
Participants will learn how an experience in the Amazon Rain Forest this summer transformed a teacher and her classroom. Resources & ideas will be shared about incorporating the Amazon into any classroom.
Presenter (s): Melissa Jordan (Woodrow Wilson Middle School)

STEM Initiatives of the United States Air Force Auxiliary-Civil Air Patrol
Aerospace
We will be introducing resources such as ready made standards based lesson plans, lab kits, and networking connections that can be of benefit to educators at many levels.
Presenter (s): Darrel Williamson (Indiana University Southeast)

Wearable Science - State Tested and Kid-Approved
Science Education
Presenter (s): Jody Hodges (ScienceWear), Ron Hodges (ScienceWear)
Thursday, February 6, 2014

Thursday General Session
Opening Remarks – Glenda Ritz, State Superintendent of Public Instruction

**Generations Merge: How to Incorporate Next-Generation Tools, Technology and Methods into Classic, Transformative, Quality Teaching**

Join Tyler DeWitt as he discusses the cool new stuff that the “next generation” of teachers are doing in their classrooms: with games, with video, with smartphones, with tablets, with Google Glass, and more! Learn how to tie those strategies into a larger curricular framework, by coupling them with meaningful assessment and thoughtful pedagogy, and how these technologies and methods change—and how they don’t change—the traditional classroom relationship between teachers and students.

Presenter(s): Tyler DeWitt

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**Density Challenge with Inquiry Room 101**

Physical Science

A series of four density challenges will be explored using colored liquids and straws.

Presenter(s): Amy Resler (Allisonville Elementary), Desiree’ Brooks

**Grade 7 Science Teachers—Force and Motion Unit part of the SEPUP Indiana Model Curriculum (Grades 6-8)! Room 102**

Physical Science

SEPUP is the research-based, field-tested, hands-on core program that builds content and process skills in the context of an issue. Vehicle safety provides context for activity we’ll do—Measuring Speed and Interpreting Motion Graphs. All SEPUP Units use several types of literacy, formative assessment strategies, and exemplifies NGSS vision for science and engineering curriculum.

Presenter(s): Denis Baker, Bill Cline (Lab-Aids)

**Incorporating Inquiry Instruction & Statistical Analysis in the Science Classroom Room 103**

Biology

Participants will walk away with a clearer understanding of statistical analysis and lessons focused on AP Biology that are designed to incorporate more data analysis.

Presenter(s): Georgia Everett (Western High School), Dr. Kari Clase (Purdue University), Kathy Daniels (Mississinewa High School), Gary Cooper (Pike High School), Susan Lobsiger (Mississinewa High School), Amanda Shanley (Purdue University)

**The 2013 AP Biology Exam - A Debriefing Room 104**

Biology

This session will present a debriefing PowerPoint on the new AP Biology exam format of 2013. Emphasis will be made on mistakes and improving scores.

Presenter(s): Jeff Smith (Indiana Academy)

**Biology Modeling: Transform Your Classroom by Engaging Your Students through Biology Modeling! Room 105**

Biology

See what Biology Modeling is all about, how you can access all the lessons for FREE, and how you can get involved in the Indiana Biology Modeling project.

Presenter(s): Dr. Lance Brand (Delta High School), John Gensic (Penn), Holly Hauck (New Prairie), Dr. Gordon Berry (University of Norte Dame)

**You CAN Get There from Here! Room 106**

Physics

Modern technology has changed navigation. Experience a lesson designed to help students understand abstract concepts relating GPS and relativity. You can’t leave home without it!

Presenter(s): Elaine Gwinn
Thursday, February 6, 2014

43rd Annual Conference

12:30 p.m.

Understanding Enzymes using the Alphabet, Puzzles and LEGO™

Chemistry
High school students become LEGO™ ‘Lunatics’ as they synthesize the sugar glucose. Various methods assist students to visualize polymerization and enzyme specificity.
Presenter(s): Suzanne Cunningham (Purdue University; Agronomy)

Looking Through the Eyes of a Chemistry Professor

Chemistry
Purdue University Professor in Chemistry, who has taught introductory chemistry, will talk about how college chemistry instruction is changing.
Presenter(s): Bill Bayley (Purdue University)

Teaching Electron Configuration Using a Popular Board Game

Chemistry
The 3 rules governing electron configuration are taught using the board game Monopoly.
Presenter(s): Jeff Springer (Southwood High School)

An Introduction to Standards-Based Grading in Science

Science Education
This presentation introduces the core philosophical beliefs of standards-based grading and shares perspectives on using this grading philosophy in secondary science classrooms.
Presenter(s): Jeremy Horner (Carmel High School), Kimi Fellers (Carmel High School)

Concentrated Animal Feeding Operations (CAFOS) as Potential Incubators Influenza Outbreaks

Life Science
With the development of CAFOs the need for training of animal caretakers to observe, identify, treat, vaccinate and cull is important to safeguard public health.
Presenter(s): James Hollenbeck, Logan Jackson (Indiana University Southeast)

How to Incorporate STEM in Your Outdoor Learning Spaces

Interdisciplinary
Does your school have an outdoor lab or wooded area? Are you looking for ways to get your students outside & engage them in STEM activities? At Skiles Test, we have created a grid system in our outdoor lab that allows for: Geocaching, tree studies, water quality testing, and on-going research of our property.
Presenter(s): Dave Shafer (Skiles Test School of Science, Technology, Engineering & Math)

STEM Education and STEM Schools - Indiana Department of Education’s STEM Initiative

Interdisciplinary
The Indiana Department of Education will review its efforts to improve the status and stature of Science, Technology, Engineering, and Mathematics education.
Presenter(s): Jeremy Eltz (Indiana Department of Education)

Neuroscience: The Brain & Beyond

Science Education
Engage teenagers on neuroscience and related careers. Educate that neuroscience is the scientific study of the body’s nervous system including the brain, spine and nerves.
Presenter(s): Aimee Lacey (IU Health Neuroscience Center), Nicholas Barbaro, MD (IU Health Neuroscience Center), Gerry Oxford, PhD (IU Health Neuroscience Center), Andrew Saykin, PsyD (IU Health Neuroscience Center)
Making Science Notebooking Manageable

Science Education

Scaffolding, grading, and reviewing science notebooks can be intimidating. Join us to learn how to make it manageable to switch to science notebooking full time.

Presenter(s): Sherri Foster (Carroll Middle School), Jason Corah, Brett Windmiller

Preparing Science Teachers for High Needs High School Students:
The Woodrow Wilson Indiana Teaching Fellowship Program at Ball State University

Science Education

We will share an evolving model for preparing beginning science teachers. It includes expanded clinical experiences, Grand Rounds, interdisciplinary collaboration, and content pedagogy emphasizing inquiry.

Presenter(s): Susan Johnson (Ball State University), Laurie Mullen (Teachers College, Ball State University), Peggy Lewis (Teachers College, Ball State University), Tom McConnell (Biology, Ball State University), Joel Bryan (Physics, Ball State University), Jason Dunham (Chemistry, Ball State University), Karen Ford (Teachers College, Ball State University), Jayne Beilke (Teachers College, Ball State University)

Notebook Foldables – Not for Novices!

Interdisciplinary

You’ve mastered the basics of Notebook Foldables®? Discover more folds to move students to the next level of science notebook 3D graphic organizers.

Presenter(s): Deb Vannatter (Vogel)

Using the Science News to Spark Students’ Ideas About Civic Participation

Science/Technology/Society

In this discussion, we will look at how the science news can be used as a means of building students’ ideas about civic participation.

Presenter(s): Megan Anderson (Indiana University)

Recharge your Teaching Batteries with the Flipped Classroom

Science/Technology/Society

Why utilizing 1 to 1 is the best approach for the science classroom: our reasons and how we have flipped the classroom.

Presenter(s): Jacob Swartz (East Noble), Shawn Kimmel

Engineering STEM Success – Building PBL Projects:
Warsaw Community Schools/Ball State University MSP Partnership

Interdisciplinary

Learn about the design of Warsaw Community Schools’ Math-Science Partnership, and see examples of PBL Unit plans designed and tested by teachers.

Presenter(s): Tom McConnell (Ball State University), Chris Bonifield (Warsaw Community Schools), Joel Bryan (Ball State University), Susan Johnson (Ball State University)

The Power of Formative Assessment

Interdisciplinary

Ideas for using formative assessment in the science classroom, including how TI-nspire technology can be useful in these techniques, will be shared.

Presenter(s): William Webb, Janell Webb (Covenant Christian High School)
Thursday, February 6, 2014

The Power of Plants
*Life Science*
Teachers will learn new ideas for using plants in their classrooms. Favorite children’s literature and make-and-takes will leave teachers ready to implement these ideas!
Presenter(s): Kristen Poindexter (Spring Mill Elementary School)

Empowering Students to Impact the Environment
*Ecology/Environment*
Teachers will work through activities showing students how virtually everything they do uses energy and generates carbon dioxide.
Presenter(s): Caryn Turrel (National Energy Education Development Project (NEED))

Every School Yard is a Habitat
*Ecology/Environment*
Participants will learn about Trees Indiana Urban Forestry Teacher Leader program. Activities that include ideas for science notebooking and hands-on experiences will be presented.
Presenter(s): Liz Schemm, Mary Matthew (Churubasco Elem/ Smith-Green Comm. Schools), Mary Ibe (Trees Indiana Instructor)

Collaborating with Science Centers
*Interdisciplinary*
Learn how working with your local science center / children’s museum can benefit your science program. Collaborative ideas include demonstrations, volunteer opportunities and guest presentations.
Presenter(s): Abby Koester, Rachael Nickel (Terre Haute Children’s Museum), Teresa Cribelar (Rockville Jr./Sr. High School)

You’re NOT Gonna Believe What We Did in Science Class Today!
*Physical Science*
Mom and Dad will hear about these discrepant events at the dinner table... and you’ll be teaching the National Science Education Standards as well!
Presenter(s): Margaret Flack (Educational Innovations, Inc.)

What is the Connection Between Science and Engineering?
*Science Education*
Investigate lessons that explore the natural world and build understandings to work as an engineer to solve problems.
Presenter(s): Deborah Gaff (Greensburg Junior High School)

Thursday, February 6, 2014

The Ups and Downs of Teaching Energy
*Physical Science*
Assess students’ understanding of energy transformation using the engineering design process. Curriculum materials will be provided.
Presenter(s): Heidi Vance, Carol Fitzgerald (Taylor Intermediate School), Brenda M. Capobianco (Purdue University)

Grade 6 Science Teachers—Energy Unit part of the SEPUP Indiana Model Curriculum (Grades 6-8!)
*Physical Science*
SEPUP is the research-based, field-tested, hands-on core program that builds content and process skills in the context of an issue. Potential/ Kinetic transformations and battery use provides context for the activity we’ll do—Chemical Batteries. All SEPUP Units use several types of literacy, formative assessment strategies, and exemplifies NGSS vision for science and engineering curriculum.
Presenter(s): Denis Baker, Bill Cline (Lab-Aids)
Thursday, February 6, 2014

“Urination” – It’s Not Just a Patriotic Story about the Founding of Our Country

Biology

Let me share how I use classroom and laboratory stations to teach a chapter on the urinary system.

Copies of handouts will be digitally provided.

Presenter(s): Gregory McCurdy (Salem High School)

ISI Middle Level Discussion Pit

Interdisciplinary

Come visit with other ISI teachers to talk about challenging lessons and/or favorite additions.

Time to help each other do our best.

Presenter(s): Jane Hunn (Tippecanoe Valley Middle School)

The Indiana Modeling Curriculum: New Results for 1st Year Biology and ICP; Future PD Workshops

Biology

A hands-on example of modeling; NISMEC’s (Notre Dame) PD modeling program in physics, chemistry, biology and ICP program, in 2013 and plans for 2014.

Presenter(s): Gordon Berry (University of Notre Dame), Lynda Rose (Penn-Harris-Madison High School, Mishawaka), Lynne Barden (LaVille Jr-Sr. High School, Lakeville), Robert Pustek (Morton Governors High School, Hammond)

Catch a Wave

Physics

Engage and explore the world of waves, sound, and light – demos and activities will be shown that utilize inquiry methods that will energize your classroom.

Presenter(s): Elaine Gwinn (Shenandoah High School)

Exploring Chemistry Beyond the Classroom-Activities for Science Nights and Outreach Programs

Chemistry

The American Chemical Society (ACS) ChemClub is a high school chemistry club that provides students with a unique opportunity to experience chemistry beyond the classroom community projects. Learn about chemistry careers, and enjoy social events.

Presenter(s): Linda Monroe (Warren Central High School)

The Chemistry Conversation Pit

Chemistry

Join Bill and Ed for an unscripted opportunity to meet and talk about chemistry and the teaching of chemistry. Everyone is welcome.

Presenter(s): Ed Mottel (Rose-Hulman Institute of Technology), Bill Bayley (K-12 Chemistry Outreach, Director of Science Express, Purdue University)

Sensible Steps for Improving Chemical Management in Schools

Chemistry

Improperly stored, hazardous, outdated chemicals in science laboratories can pose hazards.

This presentation will increase awareness of chemical management and safety and identify sustainable solutions.

Presenter(s): Maryann Suero (US Environmental Protection Agency)

Standards-Based Grading in Science: Management and Implementation

Science Education

Strategies for how to implement standards-based grading will be shared as well as perspectives on addressing the challenges of transitioning to this method of assessment.

Presenter(s): Jeremy Horner (Carmel High School), Kimi Fellers (Carmel High School)
Thursday, February 6, 2014

**Science Fiction to Reach Science and Science Literacy**

*Interdisciplinary*

Scientists have used fiction to explain and explore their science, and professional writers have used science to extend the limits of fiction.

Presenter(s): James Hollenbeck, Justin Lee (Indiana University Southeast)

**Introducing Science Notebooking in the Inquiry Classroom**

*Interdisciplinary*

This session will demonstrate how to set up the science notebook for the very first time by using videocases of K-4 teachers with their students in their VERY first science lesson of the year.

Presenter(s): Jennifer Hicks (Purdue University), Joe Bellina (NISMEC), Megan Schneider (Pine Tree Elementary, Avon Community Schools), Lori Fields (Richmond Community Schools), Jenni Kruse (White Oak Elementary, Avon Community Schools)

**IDOE Office of eLearning: eLearning in Indiana - What’s Now, What’s New, What’s Possible?**

*Science/Technology/Society*

Join the Indiana Department of Education Office of eLearning as we share the supports and resources available for your work.

Presenter(s): Candice Dodson (Indiana Department of Education), Jason Bailey (Indiana Department of Education)

**Successful PBL: Design, Momentum and Accountability**

*Science Education*

Not sure how to develop PBL units that address the goals of a high stakes environment? Come join our discussion. Handouts included.

Presenter(s): Susan Becker (STEM Consultant)

**Inquire Handbook**

*Science Education*

Come and learn why you have to have the handbook for all those science skills you have to teach. Door prizes will be given.

Presenter(s): Shannon Hudson (Tuttle Middle School)

**Hands-On with Hissers**

*Science Education*

Change your students’ ideas about insects. Participants will learn all about Madagascar Hissing Cockroaches and how to incorporate them into their classrooms.

Presenter(s): Melissa Jordan (Woodrow Wilson Middle School)

**Active Learning and eLearning**

*Interdisciplinary*

Explore digital resources including interactive whiteboard lessons, streaming video clips, and multimedia student activities that support K-6 inquiry science and notebooking. Bring your electronic device.

Presenter(s): Deb Vannatter (Vogel School/EVSC)

**Driving on Sunshine – Cars$, Co2, and You**

*Science/Technology/Society*

A graphing activity that utilizes chemistry, physics, and energy balances to show students the ecological and economic impacts of their personal transportation choices.

Presenter(s): Dave Wilms (Stevenson High School)
Thursday, February 6, 2014

**Mobile Learning - Exploring Energy Systems**
*Science/Technology/Society*
Let’s explore how iPads equipped with GPS and barcode apps can extend opportunities for learning about energy technology in your community.
Presenter(s): Bianca McRae (Burris Laboratory School), Mary Annette Rose (BSU, Dept of Technology)

**How to Effectively Increase Student Participation in the Classroom**
*Interdisciplinary*
In this workshop attendees will participate in several activities designed to engage and encourage all students to be active participants in the classroom.
Presenter(s): Dain Kavars (Indiana Academy for Science, Mathematics, and Humanities)

**Building Science Vocabulary One Fold at a Time**
*Interdisciplinary*
Time flies in this hands-on, minds-on session as you learn how Notebook Foldables® can help your instruction of, and student retention of, academic vocabulary.
Presenter(s): Nancy Wisker (Dinah Zike Academy)

**Walking with Science**
*Earth Science*
Inspire student curiosity (inquiry) using dinosaur trackways. Lesson plans provided from Paluxy River (Texas) dinosaur trackway research project (IPFW and National Geographic Society).
Presenter(s): Martha Goings, LPG (Huntington North High School/Indiana University Purdue University at Fort Wayne), Lori Fox (Retired)

**Carbon Cycle and Climate Change - How They're Connected**
*Ecology/Environment*
Participants will engage in an activity that models carbon moving through reservoirs on earth, relating it to climate change. Information about free resources provided.
Presenter(s): Caryn Turrel (National Energy Education Development Project (NEED))

**Model Student Stewardship Projects to Foster Watershed Protection**
*Ecology/Environment*
Learn how to create place-based, experiential learning for your students. Hear from teachers about their successful stewardship projects that promote great lakes literacy and conservation.
Presenter(s): Robin Goettel, Eileen DeJong (Illinois-Indiana Sea Grant Program)

**The Annual Collaborating for Education and Research Forum: A Catalyst for Building Professional STEM Community**
*Interdisciplinary*
We explore the nature and role of the annual Forum as the lynchpin in a coherent strategy for building professional STEM community in Michiana.
Presenter(s): Thomas Loughran (University of Notre Dame)

**Preparing Students for Careers in Science and Technology**
*Science/Technology/Society*
Opportunities abound for students in science and technology. IU Bloomington faculty and career advisors will discuss paths for students interested in science and technology careers.
Presenter(s): Catherine Pilachowski (Indiana University Astronomy), Anastasia Bednarski (IU Biology), James Stanton Clark (IU Chemistry), Patrick Donahue (IU Career Services), Harold Evans (IU Physics), Nancy Lemons (IU School of Informatics & Computing)
Thursday, February 6, 2014

**The International Orangutan Center’s Educator Academy – Teacher Professional Development at the Indianapolis Zoo!**

*Science Education*

Come learn about the Educator Academy, a program to help teachers create inquiry-based science lessons based on work at the Indianapolis Zoo’s International Orangutan Center.

Presenter(s): Tom McConnell (Ball State University), Tolly Foster (Indianapolis Zoo)

Room 212

Thursday, February 6, 2014

**Cardboard Regatta – A Great Way to End the School Year!**

*Physical Science*

Learn about an activity in which students build life-size boats out of cardboard, Styrofoam, and duct tape and race them across a swimming pool.

Presenter(s): Chris Ludy, Carrie Anderson (New Augusta Public Academy North), Bill Gee (Lebanon High School)

Room 101

**Grade 8 Science Teachers—Chemistry of Materials Unit part of the SEPUP Indiana Model Curriculum (Grades 6-8)!**

*Physical Science*

Make the periodic table more meaningful for students. By establishing a classification scheme based on 13 elements’ physical and chemical properties, you will generate columns of the periodic table. In the succeeding activities, you will use literacy strategies in a reading about Mendeleev, and molecular models to extend learning about bonding and balancing chemical equations. All SEPUP Units use several types of literacy, formative assessment strategies, and exemplifies NGSS vision for science and engineering curriculum.

Presenter(s): Denis Baker, Bill Cline (Lab-Aids)

Room 102

**IABT Quick Hits**

*Biology*

Indiana Biology teachers will present lessons, activities, and labs that have been successful in classrooms. (Examples of Best Practices)

Presenter(s): Darlene Seifert (New Palestine High School), David Butler Southern Wells High School

Room 103

**Middle Level Sharathon - Sharing Our Best with the Best**

*Interdisciplinary*

Middle level teachers are invited to bring their best/favorite lessons to share with their peers. Lots of good discussion and tips!

Presenter(s): Jane Hunn (Tippecanoe Valley Middle School)

Room 104

**Modeling Instruction in the Classroom: Physics**

*Physics*

Learn the modeling approach to science curriculum through activities, discussion and demonstration with a physics topic. Advanced modelers will share best practices and experiences.

Presenter(s): Craig Williams (Northwestern High School), Hugh Ross (Guerin Catholic High School), Ben Grimes (Roncalli High School)

Room 105

**Flinn Activities to Integrate STEM Education**

*Interdisciplinary*

Hands-on interactive workshop to integrate STEM inquiry and design principles into your science curriculum. Join Flinn Scientific in a “build-it-yourself” lab that engages student’s and increases understanding of concepts across science disciplines.

Presenter(s): Janet Hoekenga (Flinn Scientific Inc.)

Room 106
<table>
<thead>
<tr>
<th>Event Title</th>
<th>Room</th>
<th>Grade Level</th>
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<tbody>
<tr>
<td>Corny Enzyme Activity Assays</td>
<td>Room 107</td>
<td>High School</td>
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<tr>
<td>Biology</td>
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<tr>
<td>A hands-on laboratory activity that contains applications to plant science, digestion and human nutrition and also incorporates graphing, geometry and math calculations into data analysis.</td>
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<td>Presenter(s): Suzanne Cunningham (Purdue University)</td>
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<tr>
<td>IACT Share-A-Thon</td>
<td>Room 108</td>
<td>High School</td>
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<td>Chemistry</td>
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<tr>
<td>The Indiana Alliance of Chemistry Teachers will share best practices in chemistry teaching.</td>
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<td>Presenter(s): Bill Bayley (Purdue University), Heather Heinig (Rensslear High School), Annette Maier (North Putnam High School), Linda Monroe (Ben Davis High School)</td>
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<td>Chemistry</td>
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<td>A curriculum was developed to teach chemistry to elementary students using a Forensics theme and hands-on learning. The curriculum and results will be presented of this unique camp funded by the Dreyfus Foundation.</td>
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<td>Presenter(s): Linda (Lin) Wozniewski, Cora Boender, Joseph White, Lori Rose, Scott Pilarczyk (Indiana University Northwest)</td>
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<td>Science Notebooking in an Inquiry-Based Classroom</td>
<td>Room 110</td>
<td>General</td>
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<td>Interdisciplinary</td>
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<tr>
<td>This session will focus on how to set up and use science notebooks to enhance and enrich the understanding of science concepts.</td>
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<td>Presenter(s): Kelly Masters, Sara Hunter, Ryan LaPlante, Stephanie Compton, Rebekah Graham (Zionsville Community Schools)</td>
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<td>Sustainability in Science in the High School Classroom</td>
<td>Room 116</td>
<td>High School</td>
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<td>Science Education</td>
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<td>Recently developed lessons will be presented in relation to sustainability in science as implemented in the high school classroom setting.</td>
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<td>Presenter(s): Megan Ewing (Hamilton Southeastern School Corp), Robert Rice</td>
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<td>The Psychological Science: Mind, Brain, and Behavior</td>
<td>Room 117</td>
<td>General</td>
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<td>Interdisciplinary</td>
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<td>Discussion and demonstrations of experimental approaches to perception, thought, and behavior, which exemplify the types of questions addressed by modern psychological science.</td>
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<td>Presenter(s): Benjamin Motz (Indiana University)</td>
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<td>Outreach Division of School Improvement-Indiana Department of Education's Initiative to Support Schools</td>
<td>Room 120</td>
<td>General</td>
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<td>Interdisciplinary</td>
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<td>The Outreach Division of School Improvement is committed to fulfilling the vision of supporting all Indiana schools and students by providing grassroots levels of support and intervention.</td>
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<td>Presenter(s): Teresa Brown (Indiana Department of Education), Leroy Robinson (IDOE)</td>
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<tr>
<td>Making Sense of Data Using Google Forms</td>
<td>Room 121</td>
<td>General</td>
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<td>Science Education</td>
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<td>Learn how Google Forms simplifies student lab data collection, aggregation, and analysis, and learn how to create and use Google Forms in your classroom.</td>
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<td>Presenter(s): Ryan Bruick (Noblesville High School)</td>
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<tr>
<td>What Every Middle School Teacher Needs....</td>
<td>Room 122</td>
<td>Middle Level</td>
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<tr>
<td>Science Education</td>
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<tr>
<td>Experiments are the highlight for every science class. Come and learn about some of the experiments that I have done in my middle school classroom.</td>
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<tr>
<td>Presenter(s): Crystal Pryor, Cessa McMullen (Tri-West Middle School)</td>
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Thursday, February 6, 2014 2:30 p.m.

**Innovative Thinking: Inspiring Students to be Innovators**

*Science Education*

This session will discuss developing student innovation and higher-level thinking. Attendees will learn processes, such as design thinking, to engage students in project-based learning.

Presenter(s): Michael O’Bryan (360Thinking)

**I Taught It, Did They Learn It?**

*Interdisciplinary*

Explore easy, efficient formative assessment strategies of hands-on science and notebooking.

Learn about a new online formative assessment that generates reports for teachers, students and parents.

Presenter(s): Deb Vannatter (Vogel Elementary-EVSC)

**Blogging Isn’t Just for Feelings: Science Blogging in Your Classroom**

*Science/Technology/Society*

Blogging is a tremendous way to promote science writing with students. Attendees will understand how to use blogging to compliment or replace traditional journals.

Presenter(s): Eric Johnson (LaSalle Elementary)

**Teaching Engineering Concepts to Harness Future Innovators and Technologists (TECHFIT)**

*Science/Technology/Society*

This presentation will describe the TECHFIT professional development opportunity for teams of middle school teachers interested in making their students innovators of exergames.

Presenter(s): Alka Harriger (Purdue University), Brad Harriger

**Assessments Made Easy: Find FREE Online Tools for Developing Assessments to Refresh Your Inquiry/PBL classroom**

*Interdisciplinary*

Effectively assessing learning in Problem-Based Learning units can be difficult. Hear new ways to update and revive your classroom assessments keeping them fresh yet viable. Come get ideas and maybe win a door prize!

Presenter(s): Lisa Kirkham (Purdue University), Rachel Williamson, Tim Strand (Mississinewa High School), Michael Kelley (Harrison High School/Evansville)

**Ice Age Animals of Indiana’s Karst**

*Interdisciplinary*

Initial research findings of pleistocene bones discovered in 2010 in Indiana’s longest cave system. Surface identification includes only known bison from Indiana caves, more than 200 peccaries, bear, passenger pigeon and many more.

Presenter(s): Rob Houchens, Carol Groves, Debbie Haeberlin, Ron Richards (Indiana Caverns)

**Earth Science Teachers Share-A-Thon**

*Earth Science*

Come join Earth Science teachers from around Indiana to share ideas, lesson plans, references, and resources that work for you in the classroom.

Presenter(s): Vickey Zehringer (Northwestern Middle School), Gary A. Potter (Indiana University Southeast), Sherri Bryant (Cardinal Ritter High School), Steven Smith (Purdue University)

**Monarchs in the Classroom: Creating Citizen Scientists**

*Ecology/Environment*

Participants learn how schools/students become citizen scientists to monitor the Monarch with three national programs: Monarch Watch, Minnesota Monarch Larva Monitoring Project, and Journey North.

Presenter(s): Kirsten Carlson (Consultant)
Thursday, February 6, 2014  2:30 p.m.

**Fusing Science and Art**

*Ecology/Environment*

Help students create designs to be placed on city storm drains that educate the community about the connection between storm drains and water quality.

Presenter(s): Stephanie Dege (Michigan City High School), Nicole Messacar (Laporte County Soil and Water Conservation District)

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**The Evolution of Online Science Education**

*Science Education*

Science education is challenged by the demands and rapid growth of online education. This informational session will outline the current landscape of online lab science courses and discuss emerging trends. Come prepared to engage with other education prof

Presenter(s): Dr. Ron Weiss (eScience Labs)

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Thursday, February 6, 2014  3:30 p.m.

**Annual Association Meetings**


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Friday, February 7, 2014  7:30 a.m.

**IABT Breakfast Meeting**

*Biology*

Join the Indiana Association of Biology Teachers for breakfast and a shortened version of IABT Quick Hits

Presenter(s): Darlene Seifert (New Palestine High School), David Butler (Southern Wells High School)

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Friday, February 7, 2014  8:00 a.m.

**So This Is Your First HASTI Conference?**

Learn how to navigate the HASTI conference by learning tips to make your experience meaningful.

Presenter(s): John Moore (HASTI President)
I Teach ICP Differently and So Can You!

**Physical Science**
How can ICP be taught differently? Come see how a lecture driven class has evolved into activity and lab driven opportunities with some student choice.
Presenter(s): Dustan Smith (Muncie Southside High School)

What The Heck Happened?!?!

**Physical Science**
Discrepant events seize students’ attention, and Educational Innovations has real jaw droppers. Come explore our favorite student confusers. Door prizes and freebies!
Presenter(s): Ted Beyer (Educational Innovations, Inc)

How the NSTA Learning Center Can Make Teaching Easier

**Science Education**
NSTA offers many free resources through the Learning Center. Come and see what’s in it for you.
Presenter(s): Kate Baird (IUPUC)

Physics I Standards: IDOE vs. NGSS

**Physics**
What impact would adoption of the Next Generation Science Standards have for physics classes in the state of Indiana?
Presenter(s): Stacy McCormack (Indiana University)

Introducing Forces First

**Physics**
Define forces as interactions before formalizing kinematics, then follow kinematics with Newton’s Second Law.
Presenter(s): Peter Berg (Decatur Central High School), Amy Haywood (Decatur Central High School)

Teaching Science with Engineering Design

**Interdisciplinary**
A hands-on exploration of a design-based lesson which focuses on integrating engineering practices in the science classroom.
Presenter(s): Laura O’Shaughnessey (Lafayette Christian School), Madeline Rupp (Purdue University)

Using Technology to Build Student Understanding of the Structure, Properties, and Changes of Matter

**Chemistry**
Learn to use physics-based, interactive, 3D atomic and molecular models on iPads and laptops that provide engaging tools to progressively build students’ understanding of matter.
Presenter(s): David Doherty (Bitwixt Software Systems)

Reading, Writing, and Chemistry

**Chemistry**
In this session, several ideas will be given to integrate reading, writing, and other literacy strategies into the chemistry curriculum.
Presenter(s): Lori White (Cascade High School)
Thermodynamics with Project Based Learning

*Interdisciplinary*

Students will research the insulation properties of a set of materials, then create a travel mug that is graded on its effectiveness, cost, and the infomercial created to market it.

Presenter(s): Kristen Swangin (Edgewood Middle School)

Integrate iPad® and BYOD with Vernier Technology

*Interdisciplinary*

In this hands-on workshop, you will use Vernier’s digital tools, such as probeware, to conduct an investigation with either Graphical Analysis for iPad, or Vernier Data Share for tablets, Chromebooks, and BYOD environments. These tools can help you address.

Presenter(s): Angie Harr (Vernier Software & Technology)

Interactions Toward Promoting the Development of Whole-Class Dialogue in a Middle School Science Classroom

*Science Education*

This study examines how a middle school science teacher promotes the development of whole-class dialogue that fosters rich opportunities for writing, talking, reading, and listening.

Presenter(s): Matthew Benus (Indiana University Northwest), Carrie Sanidas (Willowcreek Middle School, Portage Township Schools)

Educator Licensing and Evaluation-Question and Answers

*Interdisciplinary*

Educator Licensing and Evaluation-Question and Answers with the Indiana Department of Education’s Office of Educator Licensing and Development.

Presenter(s): Katie Russo, Sarah Pies (Indiana Department of Education)

Why Go Wi-Fi

*Science Education*

Learn how to go digital using NGSS and Wi-Fi technology.

Presenter(s): David Doty (Swift Optical), Larry Winkleman (Winkleman Microscope Service)

Don’t Call It the Vomit Comet: Weightless Wonders with NASA

*Science Education*

Learn about how 5 teachers from Evansville flew their students’ experiment in microgravity.

Presenter(s): Tracy Conklin (Evansville Day School), Soi Powell (Evansville Day School), Ali Buchanan (Evansville Day School), Jose Manuel Mota (Evansville Day School), Sarah Sutton (Evansville Day School)

If I Could Only Read Their Minds

*Science Education*

Multiple techniques using student response systems will be demonstrated, to ascertain the students’ understanding of the content presented during class. Once data is obtained, how to respond instructionally to the instantaneous feedback from students.

Presenter(s): Craig Smiley (Harrison High School)

Environmental Literacy - What It Is, How to Include It, and Why It’s Important!

*Interdisciplinary*

Interested in including environmental literacy in your lessons? Come learn about best practices and receive resources to help you integrate it into your existing curriculum.

Presenter(s): John Brady (Brebeuf Jesuit Preparatory School), Jabin Burnworth (Manchester High School)
Friday, February 7, 2014 8:30 a.m.

Science Olympiad: A Standards-Based Curriculum
Room 138  General
Science/Technology/Society
Participants will try out various Science Olympiad events and see the correlations with the Next Generation Science Standards.
Presenter(s): Linda (Lin) Wozniewski (Indiana University Northwest)

Examining the Evidence for Student Learning
Room 139  Elementary
Interdisciplinary
Watch several video cases as K-8 teachers use well defined objectives and focus on the evidence for student learning in their inquiry lessons.
Presenter(s): Jennifer Hicks (Purdue University), Joe Bellina (NISMEC), Megan Schneider (Pine Tree Elementary, Avon Community Schools), Jenni Kruse (White Oak Elementary, Avon Community Schools), Lori Fields (Richmond Community Schools), Kristen Poindexter (Spring Mill Elementary, MSD Washington Township Schools)

Problem-Based Learning: Changing the Way a Department Works
Room 205  High School
Interdisciplinary
The Quick and Dirty HOW-TOs of PBL combined with one department’s evolution with PBL and a group of first-year teachers’ experiences starting off with PBL.
Presenter(s): Lisa Kirkham (Purdue University), Kathy Daniels (Mississinewa High School), Susan Lobsiger (Mississinewa High School), Tim Strand (Mississinewa High School), Rachel Williamson (Mississinewa High School), Samantha Schwartz (Purdue University), Laura Heaverly (Purdue University), Emily Fero (Purdue University)

Bioethics in The Hunger Games: Evaluating the Effects of Genetic Engineering through Popular Fiction
Room 206  High School
Life Science
Students are highly motivated by the ever popular series the Hunger Games. How can we use this to explore genetically engineered organisms in the classroom?
Presenter(s): Donna Keller (North Judson-San Pierre High School), Kristen Cook, PhD (Bellarmine University), Alyce Myers (North Montgomery Schools)

IESTA Annual Rock Raffle
Room 207  General
Earth Science
Come join Earth Science teachers from Indiana for our 6th annual rock raffle.
Presenter(s): Gary Potter (Indiana University Southeast), Sherri Bryant (Cardinal Ritter High School), Steven Smith (Purdue University), Vickey Zehringer (Northwestern Middle School)

Composting with Worms – Make a Worm Bin
Room 208  General
Ecology/Environment
Build your own worm compost bin (easy and light to carry). How to care for bin and worm activities included. Session limited to 25 participants.
Presenter(s): Jennifer Woolson-Helrigel (Indiana Department of Environmental Management)

Solid Waste Management: Issues and Options
Room 209  High School
Ecology/Environment
Help your students generate awareness, interest and understanding of waste management issues and options by sampling activities from Project Learning Tree’s Municipal Solid Waste module.
Presenter(s): Donna Rogler (Indiana Project Learning Tree)

Inquiry and Creativity
Room 210  General
Interdisciplinary
Does inquiry-based STEM learning intersect with the Arts? We’ll explore how exposure to arts-related instruction can give an advantage to learning STEM-related skills and concepts.
Presenter(s): Susan Disch (ETHOS Science Center), Matthew McQueen (Elkhart Community Schools/ETHOS Science Center), Douglas Hunnings (Elkhart Community Schools)
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<tr>
<th>Event</th>
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<tr>
<td><strong>Working “in Space” with LEGOs</strong></td>
<td>Room 211</td>
<td>Middle Level</td>
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<tr>
<td>Labs simulating working “in space” with LEGO models (simple/complex machines and robotics) along with astronauts. Experience following directions and difficulties of working in space.</td>
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<td>Presenter(s): Loretta Kosloske (Knox Community Middle School)</td>
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<td><strong>generationOn - Real-World Learning Through Service-Learning</strong></td>
<td>Room 212</td>
<td>Middle Level</td>
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<td>Presenter(s): Joan Belschwender (generationOn), Shannon Hudson (Tuttle Middle School, Crawfordsville), Ryan Steuer (generationOn and former teacher at Decatur M.S., Indpls)</td>
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<td><strong>Modeling Chemical Bonds and Reactions with Legos</strong></td>
<td>Room 101</td>
<td>High School</td>
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<td>Students can memorize rules for writing ionic formulas and balancing chemical equations, but by building particle models with Legos true comprehension is unlocked.</td>
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<td>Presenter(s): Craig Williams (Northwestern High School)</td>
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<td><strong>Simple and Cheap Demos and Experiments to do with Elementary Students</strong></td>
<td>Room 102</td>
<td>Elementary</td>
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<td>Join us for hands-on experiments to encourage science in your students’ lives. Experiments are for all elementary ages, require readily-available materials and explain simple science concepts.</td>
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<td>Presenter(s): Abby Koester (Terre Haute Children’s Museum), Rachael Nickel (Terre Haute Children’s Museum), Teresa Cribelar (Rockville Jr./Sr. High School)</td>
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<td><strong>We have iPads®, Now What?</strong></td>
<td>Room 103</td>
<td>High School</td>
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<td>Now you have iPads in the classroom and you are not sure what to do next. Learn tips, tricks, apps and ideas on how to integrate the iPads for real learning in the science classroom.</td>
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<td>Presenter(s): Kim Terry (South Vermillion High School)</td>
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<td><strong>Earning Money for your Classroom Through Grant Writing</strong></td>
<td>Room 104</td>
<td>General</td>
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<td>Join me as I walk you through the basics of grant writing for classroom projects. Links to possible grantors will be distributed.</td>
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<td>Presenter(s): Kate Baird (IUPUC)</td>
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<td><strong>Coaching and Teaching Science - Are There Enough Hours in the Day?</strong></td>
<td>Room 105</td>
<td>High School</td>
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<td>Presenters will share over 50 years of combined experiences of teaching science and coaching extra-curricular sports. Both aspects of being an educator require many hours of dedication, and some insights and helpful hints will be shared to help others with the desire to be an effective classroom teacher and coach.</td>
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<td>Presenter(s): Marshal Overley (West Lafayette), Jane Schott</td>
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Friday, February 7, 2014 9:30 a.m.

21st Century Education
Science Education
Our approach addresses differentiation, diversity, and transience in the modern public high school.
Presenter(s): Peter Berg (Decatur Central High School)

Up, Up, and Away
Physical Science
Come “float Among the stars” as you explore a comprehensive hands-on unit with hot air balloons and Archimedes’ Principle of Buoyance.
Presenter(s): Ken Wertz (Fremont Community Schools)

Lab Performance Assessments
Chemistry
Student lab practical exams can be a management nightmare. We want to encourage you to go for it (assessment ideas with standards-based rubrics included).
Presenter(s): Elizabeth Ernst (Herron High School), Mary Hansen (Saint Maria Goretti Catholic School), Noelle King

Individualized Honors Chemistry (iChem)
Chemistry
This session introduces iChem: a student-centered, honors level, 1st year chemistry class in which students decide when and where to do most assignments.
Presenter(s): Kendal Smith (Lake Central)

Medical Explorer - Making Real World Connections with Medical Case Studies
Life Science
This FREE classroom ready curriculum includes global health issues, diverse cultures, service learning, and a variety of life science topics explored through guided inquiry.
Presenter(s): Dr. Lance Brand (Delta High School), Dr. Chuck Dietzen (Timmy Global Health)

Integrate iPad® and other Mobile Devices with Vernier Technology
Interdisciplinary
In this workshop, you will use Vernier’s digital tools to carry out an investigation with either Graphical Analysis for iPad or Vernier Data Share for other mobile technologies (BYOD). Design and conduct an investigation that addresses NGSS Practices and Performance Expectations, as well as many state standards.
Presenter(s): Angie Harr (Vernier Software & Technology)

Digital Resources and Tools for Science Teachers
Science Education
Multiple digital resources and tools are available. The most successful ones used by our science teachers will be shared. See www.evscicats.com for a sample.
Presenter(s): Vic Chamness (Evansville Vanderburgh School Corporation)

Secondary Literacy Framework: Methods for Teaching Literacy in Secondary Science
Science Education
Incorporating Indiana’s Common Core Literacy Standards for Technical Subjects requires teachers of all disciplines to engage students in reading nonfiction and technical text.
Presenter(s): Jill Lyday, Caitin Beatson (Indiana Department of Education)
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<tr>
<th>Room</th>
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<tr>
<td>Room 121</td>
<td>Create a Digital Wi-Fi Classroom</td>
<td>9:30 a.m.</td>
<td>General</td>
<td>David Doty (Swift Optical), Roger Wedig (Fisher Science Education)</td>
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<td>Room 122</td>
<td>Creating An Environment for Academic Success for All in the Science Classroom</td>
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<td>General</td>
<td>Deborah Calhoun (Pike High School)</td>
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<td>Room 136</td>
<td>How to Fund Science Projects through Successfully Writing Grant Requests</td>
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<td>General</td>
<td>Norman Leonard (Pike High School)</td>
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<td>Room 137</td>
<td>ULTIMATE Project-Based Learning: Changing the World!</td>
<td></td>
<td>General</td>
<td>Michael Baer (South Adams HS), Myron Schwartz (South Adams HS)</td>
</tr>
<tr>
<td>Room 138</td>
<td>FIRST Lego League</td>
<td></td>
<td>General</td>
<td>Linda (Lin) Wozniewski (Indiana University Northwest)</td>
</tr>
<tr>
<td>Room 139</td>
<td>Game On: Video Games as Tools for Teaching STEM</td>
<td></td>
<td>General</td>
<td>Sonny Kirkley (WisdomTools, Inc./NASA Ignite!), Adrienne Evans Fernandez</td>
</tr>
<tr>
<td>Room 205</td>
<td>When Does the Gender Pipeline Start to Leak?</td>
<td></td>
<td>General</td>
<td>Micha Kilburn (Joint Institute for Nuclear Astrophysics)</td>
</tr>
<tr>
<td>Room 206</td>
<td>Meteor Impacts: What Can We Do About/With Them?</td>
<td></td>
<td>General</td>
<td>Jeramy Powers (Indiana University Southeast)</td>
</tr>
<tr>
<td>Room 208</td>
<td>Urban Green: The Next Generation</td>
<td></td>
<td>General</td>
<td>Erin Nolan-Higgins (School City of East Chicago)</td>
</tr>
</tbody>
</table>
### Earth Partnership for Schools

**Room 209**

**General**

**Ecology/Environment**

This workshop will provide a few lessons from a whole curriculum designed to actively engage students in restoring ecosystems in their schools.

Presenter(s): Leslie Samelson (Michigan City Area Schools), Amy Hammond (Barker Middle School), Amanda Maycroft (Krueger Middle School), Nicole Messacar (LaPorte County Soil and Water Conservation District)

### Infusing Real Research into the Science Classroom!

**Room 210**

**High School**

**Interdisciplinary**

We will show several research projects that have been completed in our biology and research classes over the past years.

Presenter(s): Becky Kehler (Greenwood Community High School), Rich Perry (Greenwood Community High School)

### Foldable Projects – Let’s Push the “Envelope”

**Room 211**

**General**

**Interdisciplinary**

In this fast-paced, interactive session you will cut, fold, and more as you transform manila envelopes into project-based Envelope Graphic Organizers.

Presenter(s): Nancy Wisker (Dinah Might Adventures)

### Beyond the Classroom: Challenging your Students with Independent Research

**Room 212**

**High School**

**Science Education**

Your students have ideas. Empower them through independent research! Learn the time-saving tools on how to start and manage long-term student projects.

Presenter(s): Stacey Summitt-Mann (University High School of Indiana)

### Standards for the Next Generation

**Friday General Session**

**Sagamore Ballroom 3**

A once-in-a-generation change is underway in science education with the release of the Framework for K-12 Science Education and the Next Generation Science Standards. These reports provide guidance for educators on how to help students engage in science and engineering practices such as modeling and argumentation to gain a deep understanding of the core ideas in each of the science disciplines as well as concepts such as causality and systems that cut across all disciplines. In addition, these reports describe a vision of STEM education where science and engineering are intertwined and connections to mathematics and English language arts are made explicit.

But while the Framework and NGSS have much to offer, they can take some getting used to. This session will provide a tour of both documents that highlights the overall vision they describe, explains their essential elements, and describes how educators can use them to improve teaching and learning right away and over the years to come.

Presenter(s): Ted Willard

### The NSTA Learning Center – An Amazing Resource for Teachers

**Room 101**

**General**

**Interdisciplinary**

You do not have to be a member of NSTA to access almost 4,000 free resources for teaching and professional development. Come find out how!

Presenter(s): Tina Harris (Indiana University)
**HASTI: THE NEXT GENERATION**

Friday, February 7, 2014 12:30 p.m.

### No Note Taker Left Behind - Scrolling Powerpoint Notes

**Interdisciplinary**

Learn how to manipulate PowerPoint to produce notes that scroll like a teleprompter. 
Template and demo files are available for download. 
Presenter(s): Rick Dubbs (Monrovia Middle School)

### Fat Dogs and Coughing Horses

**Biology**

Looking for new ways to teach traditional high school biology concepts? Come learn about teaching strategies flavored with veterinary medicine real-world relevancy. 
Presenter(s): Joseph Ruhl (Lafayette Jefferson High School), Jenny Veatch (Crawfordsville High School)

### Income Tax for Teachers

**Interdisciplinary**

Will answer income tax questions for teachers. 
Presenter(s): Charles W Gwaltney (Retired)

### Measuring and Modeling the Invisible - Leading Edge Particle Physics and Applications for Science, Technology and Mathematics

**Physics**

Explore concepts related to cosmic rays, models of matter and energy, measurement of the random, and analysis of the invisible with QuarkNet. 
Presenter(s): David Sederberg (Purdue University), Matthew Jones (Purdue University)

### Engineering Projects for Physics

**Physics**

Assigning introductory-level engineering projects with few constraints allows students to problem-solve in a more genuine way than by simply completing problem sets. 
Presenter(s): Aaron Ellis (Brebeuf Jesuit Preparatory School)

### Inquiry Based Science Teaching and Cross-Curricular Connections

**Interdisciplinary**

An opportunity to gain an introduction to inquiry based teaching and learning techniques, as well as extend scientific concepts across the curriculum by providing resources and ideas for implementation. 
Presenter(s): Demetrice Smith (EdPower), Roshelle Sayles (Tindley Preparatory Academy)

### Where's the DATA? Media Literacy and the Science Literacy Standards

**Chemistry**

Creating scientifically literate students who can dissect science news, look for science in the data, and give it a critical review. 
Lesson plans and rubrics included. 
Presenter(s): Elizabeth Ernst (Herron High School), Noelle King

### Catching a Mystic Tiger by the Tail - High Powered Rocketry in Secondary Education

**Chemistry**

Guiding high school chemistry 2 students through AP/HTPB/Al (ammonium perchlorate/hydroxyl-terminated polybutadiene/aluminum) rocket motor research is a BLAST! 
Presenter(s): Melissa McCarthy (William Henry Harrison High School)

### Starting a STEAM School

**Interdisciplinary**

What is a STEAM school? How do you start one? Learn what one school has discovered in its first six months of their transformation. 
Presenter(s): Susan Disch (ETHOS Science Center), Matthew McQueen (Elkhart Community Schools/ETHOS Science Center), Douglas Hunnings (Elkhart Community Schools), Jeff Komins (Elkhart Community Schools)
Website Tools You Need for Science
Interdisciplinary
This session will share online tools that can be used to research, explore, and communicate student understanding of science in creative ways.
Presenter(s): Sue Keene (West Newton Elementary)

Teaching Science as Questions, Claims, and Evidence. An Introduction to the Science Writing Heuristic
Science Education
This presentation explains how to teach science as questions, claims, and evidence and how to develop and foster this approach in your elementary classroom.
Presenter(s): Matthew Benus (Indiana University Northwest)

Next Generation Science Standards/ K12 Science Framework: An Introduction, Overview, and Where Indiana Stands for Implementation
Science Education
The IDOE’s Science Specialist will provide Indiana’s science teachers with information about the NGSS and Framework as well as where Indiana is with its implementation.
Presenter(s): Jeremy Eltz (Indiana Department of Education)

The Advantages of Using Science Notebooks
Science Education
Participants will better understand the advantages for the teacher and student when a science notebook is used. Receive a simple guide, tips, and see examples of student notebooks.
Presenter(s): Donna Phair (Franklin Community Middle School)

Teaching Simple Machines, Force and Motion and a Little Energy Using LEGO
Science Education
Hands-on session where teachers will be shown how to teach pulleys, levers, gears, wheels and axles, force and motion and a little energy using a LEGO®.
Presenter(s): Ivery Toussant, Jr. (LEGO Education)

SCIENCE ON SATURDAYS! C.S.I. ELEMENTARY – An Experience-Based Science Program for 3rd Graders
Interdisciplinary
IMPD Officer Tracy Dobbs responded to a 911 call from someone at Sycamore School. He found no evidence of forced entry at the front door; however, evidence suggested someone had broken into the building. Further investigation found a body on the premises!
Presenter(s): Mary Jo Wright (Sycamore School)

PASCO’s SPARKscience for High School Students – Free Sensors for Lucky Attendees!
Science/Technology/Society
Learn how SPARKscience engages students in scientific and engineering practices. Participate in real-time data collection with probeware and SPARKvue software investigations.
Presenter(s): Dorothy Haggerty (PASCO scientific)
World Food Prize Youth Institute at Purdue

Interdisciplinary

Students complete a research paper on food security in a developing country to participate in a free two-day event at Purdue interacting with experts in global food security.

Presenter(s): Donna Keener (Purdue University), Kelly Delp (Purdue University)

Research Goes to School: Bringing Advanced Research on Biofuels to the High School Classroom

Interdisciplinary

High school STEM teachers show how they incorporated advanced research on the conversion of biomass to biofuels into their courses. Lesson plans and strategies included.

Presenter(s): Lisa Kirkham (Purdue University), Thomas Everett (Eastern High School), Laurie Simmons (Knox High School), Michael Kelley (Harrison High School/Evansville), Jordan Kelsey (Harrison High School/Evansville), Daniel Tillman (Harrison High School/Evansville), Rachel Williamson (Mississinewa High School), Tim Strand (Mississinewa High School)

Attention, Meaning, and Primacy-Recency: Making the Connection

Interdisciplinary

Join the UIndy WW Fellows as they share brain-compatible strategies for engaging students in making meaningful connections to science in the first and last ten minutes of class.

Presenter(s): Deb Sachs (University of Indianapolis), Kelly Crider (University of Indianapolis), Corbin Feldhaus (University of Indianapolis), Nikki Holladay (University of Indianapolis), Sergio Madera (University of Indianapolis), Ashley Owen (University of Indianapolis)

Technology Activities 101 and More

Science Education

Next Generation Science will include technology. Get a head start and come find some Web 2.0 Tools to explore.

Examples include: Glogster, Prezi, and Pinterest.

Presenter(s): Reena Markstahler (Southwood High School), Esther Garrison (Southwood School), Becky Zacher (Rensselaer Central Middle School)

Meeting NGSS through Permaculture, Resiliency, and Biodynamics

Ecology/Environment

Environmental STEM is moving forward fast. The terminology and links to classroom learning outcomes can be hard to figure out. How do you get past basic gardening and recycling and to deeper, meaningful, interactive, interdisciplinary curriculum?

Presenter(s): Teddie Mower (Indiana University Southeast/UofL)

The Dynamics of Climate: A Toolkit for Teacher Professional Development

Ecology/Environment

This session will provide an overview of the Dynamics of Climate teacher professional development toolkit. Several activities from the toolkit will be demonstrated.

Presenter(s): Dan Shepardson (Purdue University), Mary Cutler (Tippecanoe County), Ted Leuenberger, Hans Schmitz (Purdue Extension), Olivia Kellner (Purdue University), Dev Niyogi (Purdue University)

Geo Spatial Technologies in Your Classroom

Interdisciplinary

Using diverse, free resources from GeoSpatial technologies, help your students acquire, manage, and analyze information from a spatial perspective are the top skills for employment in the 21st Century.

Presenter(s): Kathy Kozenski (Geography Educators’ Network of Indiana, Inc.), B. Dewayne Branch (Purdue University)

Are Your Students Excited About Science? Technology and the ISI curriculum

Life Science

A hands-on Vernier extension from 2013 summer workshops of South Bend 5th-8th grade teachers investigating the Indiana Science Initiative kits.

Presenter(s): Gordon Berry (University of Notre Dame), Joseph J. Bellina, (Northern Indiana Science, Math & Engineering Collaborative), Patrick Kurowski (Edison Intermediate Center, SBCSC), Nate Cole (St. Joseph Grade School, South Bend)
<table>
<thead>
<tr>
<th>Event Title</th>
<th>Room</th>
<th>Type</th>
<th>Time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Two Birds with One Stone: Including Literacy in Energy Education</strong></td>
<td>211</td>
<td>Interdisciplinary</td>
<td>12:30 p.m.</td>
<td>Use materials from NEED to improve literacy and teach your students about energy sources. Literature, drama, and informational text activities will be highlighted. Presenter(s): Caryn Turrel (National Energy Education Development Project (NEED))</td>
</tr>
<tr>
<td><strong>Microscope Cameras: Why You’ll Love Them!</strong></td>
<td>212</td>
<td>Science Education</td>
<td>1:30 p.m.</td>
<td>Come play with microscope cameras. It’s easy! Walk away with sample lessons on how to adapt your classic activities into fun, modern laboratory investigations. Presenter(s): Stacey Summitt-Mann (University High School of Indiana)</td>
</tr>
<tr>
<td><strong>Great Reads for Science Book Talk</strong></td>
<td>101</td>
<td>Interdisciplinary</td>
<td>1:30 p.m.</td>
<td>A science teacher and school librarian share our favorite science themed reads with book talks. Read books aloud or encourage student exploration beyond the science classroom! Presenter(s): Deborah Gaff (Greensburg Junior High School), Susan Knight (Greensbug Junior High School)</td>
</tr>
<tr>
<td><strong>Mixing Light and Paint</strong></td>
<td>102</td>
<td>Physics</td>
<td>1:30 p.m.</td>
<td>Make art and learn how to combine it with physics to demonstrate how light mixes differently than paint. You’ll have to see for yourself! Presenter(s): Luke Crawley (University High School)</td>
</tr>
<tr>
<td><strong>How to Grab a Teenager’s Attention</strong></td>
<td>103</td>
<td>Biology</td>
<td>1:30 p.m.</td>
<td>Take home ideas for fun, inexpensive biology demonstrations (sort of a “best hits” of this 35-year veteran’s bag of tricks!) designed to engage your kids. Presenter(s): Joseph Ruhl (Lafayette Jefferson High School)</td>
</tr>
<tr>
<td><strong>Using the iPhone to Record Data in a Physics Classroom</strong></td>
<td>105</td>
<td>Physics</td>
<td>1:30 p.m.</td>
<td>An introduction on how to use the Sensor Data app from Wavefront Labs to access sensors on the iphone and stream this data to devices. Presenter(s): Tim Duman (University of Indianapolis)</td>
</tr>
<tr>
<td><strong>The Joys of Teaching AP Science</strong></td>
<td>106</td>
<td>Interdisciplinary</td>
<td>1:30 p.m.</td>
<td>Strategies that aid in student success! Presenter(s): Karen Morris (Univ. of Notre Dame - AP-TIP IN), Amy Keller</td>
</tr>
<tr>
<td><strong>Be Green, Learn Green, Earn Green: An EPA-Funded Intensive Summer Program in Sustainability for High School Science Teachers</strong></td>
<td>107</td>
<td>Interdisciplinary</td>
<td>1:30 p.m.</td>
<td>Want to invigorate your curriculum, learn science, earn continuing education credits, and receive a paid stipend? Learn more about the Institute for Green and Sustainable Science. Presenter(s): Carl Lecher (Marian University)</td>
</tr>
</tbody>
</table>
Friday, February 7, 2014 1:30 p.m.

**The Principles of Mechanics from Less than One Second of Data**  
*Physics*  
An outline for introducing kinematic and mechanics principles that are developed from a simple classroom demonstration (and data collection) of a falling ball.  
Presenter(s): George Devendorf (Indiana Academy)

**A Grab Bag of Biology and Chemistry Labs**  
*Interdisciplinary*  
In our session we will share various labs that we do in our biology and chemistry classes.  
Presenter(s): Rich Perry (Greenwood Community High School), Becky Kehler (Greenwood Community High School)

**Endocrine Disruptors and PBDEs and Epigenetics, Oh My…Emerging Issues in Environmental Health**  
*Interdisciplinary*  
Focus on current research challenging understanding of impacts that environmental exposures have on individuals and society, and resources to engage students on these relevant issues.  
Presenter(s): Maryann Suero (US Environmental Protection Agency)

**The Effect of Learner-Directed Scientific Investigations on Students’ Questionings and Their Nature of Science Views**  
*Science Education*  
Questioning is an important aspect of scientific inquiry. Students do not always ask “investigable” questions. This study examined the effect of outdoor-learning on student questioning.  
Presenter(s): Banu Avsar Erumit (Indiana University), Khadija Fouad (Indiana University), Valarie Akerson (Indiana University)

**What’s so Flipping Exciting about Flipping the Classroom? Lecture-Free Teaching Methods That Engage Students**  
*Science Education*  
Come learn about how flipping your class puts the responsibility of learning on the student, allowing for a more engaging, higher order learning, classroom experience.  
Presenter(s): Curt Coffman (Vincennes University), Aimee Hawley (Decatur Central High School)

**Science Education, Literacy and Equity: Perfect Partners!**  
*Science Education*  
This session will explore strategies for ensuring that all diverse learners - particularly English Language Learners and others with low reading and writing skills - have access to and success in science classrooms.  
Presenter(s): Leslie Fatum (Indiana Department of Education)

**UIndy Jr-Scientist Program: Using Minds-on Science Activities to Complement Non-Fiction Literature**  
*Science Education*  
Participate in 5E format lessons designed by the UIndy Jr-Scientist program, which get students thinking like scientists by combining minds-on activities with non-fiction literature.  
Presenter(s): Mary Gobbett (University of Indianapolis), Smithson, Candace (Cowan Jr-Sr High School), Nancy Steffel (University of Indianapolis)

**Is Paperless Possible?**  
*Science Education*  
No more copiers! No more missed work folders! No more recycle bin piled to the ceiling! The dream of a paperless environment is finally within reach!  
Presenter(s): Timothy Martin (Batchelor Middle School), Cody Messmann

**Hawaii Marine Science Seminar**  
*Interdisciplinary*  
This is an opportunity for teachers to learn how to recruit and escort their students to Hawaii for a two week program which mainly focuses on Marine Science.  
Presenter(s): Dennis O’Rourke
Day in the Life of a 1:1 Science Teacher
Science Education
Teachers from a 1:1 school will share what the classroom looks like when students have laptops in class.
Presenter(s): Carissa Prater (East Noble High School), Mark Liepe (East Noble High School), Cameron Lahee (East Noble High School)

Integrating Technology in the Middle School Science Classroom
Science/Technology/Society
From bell ringers to exit slips, learn strategies to engage, challenge, and assess students using a variety of iPad applications and Senteo/SMART technologies.
Presenter(s): Sue Gnagy (Manchester Jr/Sr High School), Brooke Nelson (Southport Middle School)

Converting Summer Research into Engaging Classroom Experiences
Interdisciplinary
STEM Teachers who participated in Notre Dame’s Summer RET describe their research and how they will use that research in their classrooms (come see a 3-D printer).
Presenter(s): John Gensic (Penn High School), Lexi Kutch (New Prairie High School), Ann Rutherford (Marian High School), Ken Poling (Penn High School)

The Quake Cottage Program
Earth Science
The Quake Cottage Program provides teaching resources related to emergency preparedness and earthquakes in addition to simulation of various magnitude events.
Presenter(s): Walt Gray (Indiana Geological Survey)

Effective Strategies for Sharing Climate Change Science and Energy Consumption Implications in the Classroom
Ecology/Environment
Explore the scientific foundations of what we know about climate change, greenhouse gases, and energy consumption through effective hands-on and data-rich classroom activities from NESTA.
Presenter(s): Steven Smith (Purdue University), Christopher M Roemmele (Purdue University: Department of Earth, Atmospheric, and Planetary Sciences)

A Blast From the Past
Physics
Travel through time to see scientists from the past performing numerous experiments for the next generation.
Presenter(s): Pam Roller (Thompson Elementary)

How Do We Get All This Energy?
Physical Science
Teachers will work through two kinesthetic activities designed to show energy flows to young students.
Presenter(s): Caryn Turrel (National Energy Education Development Project (NEED))

Biology Preconception Alert: PHOTOSYNTHESIS & RESPIRATION Are Linked!
Biology
Students have major misconceptions about photosynthesis and cellular respiration, but this content is essential for understanding how matter and energy flows, both at the micro (cellular) and macro (ecosystem) levels. Using a computer simulation, a hands-on activity, and notebooking and discussion strategies, expose student thinking—all from SEPUP’s new Science and Global Issues: Biology from LAB-AIDS.
Presenter(s): Denis Baker, Bill Cline (Lab-Aids)
Friday, February 7, 2014

Teaching H.S. Biology to 8th Graders Successfully!

**Biology**
Teaching Biology – 8th grade style. Hands-on activities, graphic organizers, teaching ideas and tips for helping your students do well on the Biology ECA.
Presenter (s): Deb Smith (Yorktown Middle School)

Rube Goldberg Machine Encore

**Physics**
Using a Rube Goldberg machine as a high school physics project that incorporates physics modeling curriculum along with mentorship from engineers throughout the fall semester.
Presenter (s): Josie Sillampa (Western High School)

Delegating Lab Work Among Students: Cooperative – Inquiry Lab Teaming

**Physics**
Participants will engage in a discussion and brief lab activity of a teaming method, experiencing a lab structure that trains students as cooperative experimental teams.
Presenter (s): John Taylor (Elkhart Memorial High School), Heather Fellows (Elkhart Memorial High School)

30 Ideals in 30 minutes: An Action Packed Classroom!

**Science Education**
Join us for a session designed to give you things you can take back and use in your classroom at any grade level starting tomorrow.
Presenter (s): Jed Freels (Dekalb Middle School)

Mastering the Chemical Formula: An Exceptionally Effective Way to Teach Subscripts and Coefficients

**Chemistry**
What is the difference between subscripts and coefficients? What does “balancing” a chemical equation mean? Many students have trouble with these fundamental concepts in chemistry. If students do not fully understand the chemical formula, then moles, reactions, and stoichiometry are hopelessly confusing. Join us for an elegant, intuitive lesson that encourages students of all levels to master the chemical formula and advance in this course from LAB-AIDS—A Natural Approach to Chemistry.
Presenter (s): Denis Baker, Bill Cline (Lab-Aids)

Using Lego Robotics to Support Math and Science Self-Efficacy in K-8 Learners

**Science/Technology/Society**
Join us as we walk through how we are using shared language, science notebooks, Lego robotics, and engineering challenges to build skills for K-8 learners.
Presenter (s): Kate Baird (Indiana University Purdue University Columbus), Craig Montgomery (Indiana University Purdue University Columbus), Davida Harden (Indiana University Purdue University Columbus)

Labs for Understanding the Impacts of Global Warming: Designed for Climate Change Deniers

**Science/Technology/Society**
Three lab experiences will demonstrate the nature of science for implications of ice disappearance, subsequent ocean warming, ocean thermal expansion, and impacts on human society.
Presenter (s): Dave Wilms (Retired)
ICE AGE GIANTS
The Mystery of Mammoths and Mastodons

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2013 PAEMST Finalists

Congratulations 2013 PAEMST Finalists:

Philip Cook – Culver Academies
Liviu Haiducu – Avon High School
Amy Hamman – Barker Middle School
Hugh Ross – St. Theodore Guerin High School
Kenneth Wertz – Fremont Middle School

The Hoosier Science Teacher

The editorial staff of THE HOOSIER SCIENCE TEACHER (THST) would like to invite all HASTI members and science educators to submit articles to the magazine editor for possible publication. We especially want to encourage presenters at the 2014 HASTI Conference to share their ideas with those who could not attend this year’s conference. If you are scheduled to speak at the HASTI Conference and your presentation utilizes multimedia that you can communicate in writing, please consider writing for the THST.

However, we will accept submissions from all people whether or not they will be presenting at the conference.

Authors are asked to submit through our web site at http://www.hasti.org/publications/thst.html. A copy of “Guidelines for Authors” may be download here and your final electronic article should be submitted to the editor at E-mail: thst@hasti.org.
Aaron Pickett is a teacher at Bradie Shrum Upper Elementary School in Salem, IN. He has taught for eleven years. Over the course of those eleven years, he has helped pilot the use of iPads in the classroom for student use, where now they are used in more classrooms. He has also worked on committees that have included ones to hire new teachers, adopt new textbooks, as well as working to help students through Response to Intervention (R.T.I.).

Aaron spent his first ten years teaching fourth grade. During that time, he discovered his love of teaching science. “As a kid growing up, science was just something we read, if we did it at all. I do not remember doing any experiments until later in middle school. With that, I never had much appreciation for science. My first year teaching, I found science to be my most challenging subject to teach due to the fact that I had the least interest in it. The book we had to use was not the best either.” Luckily, that book was at the end of its use, so the next year a new one was adopted, and it was better at explaining topics and had a lot of good experiments for the kids to perform. Each year Aaron found himself liking science more and more to the point that in the last two years, it has become one of his favorite subjects to teach. He loves watching students explore and learn through the act of doing something hands on like an experiment. Today, he now teaches fifth grade – where his students still spend their science time exploring, observing, predicting, and finding answers to their scientific questions.

“In teaching science through hands on methods, I hope to instill a love for the subject in my students, because over the years, teaching science has helped instill that love in me.”

– Aaron Pickett
HASTI: the Next Generation

2013 Charlotte M. Boener Award for Innovative Middle School Science Teaching

HASTI Congratulates Samantha Joll

Samantha is a 2003 graduate of Valparaiso University, majoring in Chemistry and Education with a minor in Native American Studies. She is in her ninth year teaching, eighth year at Chesterton Middle School, as well as her eighth year coaching her school’s Science Olympiad team. Samantha is married and lives in Porter, Indiana and is a mother of three children as well as three step children. Her hobbies include: geology, canoeing, gardening, reading, playing the banjo, hiking, and worm farming, to name just a few! Samantha enjoys her job immensely and works very hard at continually improving her curriculum and how it is delivered. However, though she is dedicated and driven, she also very much enjoys laughing and having fun!

“I chose teaching as my profession because I am passionate about making a difference in the lives of young people. It is my way of “paying it forward” in remembrance of all of those who helped me succeed in life to the happy place I have found. It is a wonderful thing to know that I am actually making a difference.”

– Samantha Joll
HASTI Congratulates Dr. Sharon Schleigh

Originally from Hawaii, Dr. Schleigh earned her bachelor’s in Natural Science at the University of Hilo, a master’s in curriculum & instruction at the University of Phoenix, a master’s in space science and planetary sciences at the American Military University, and her doctorate in Science Education, Earth & Space Science from Arizona State University. She taught at Arizona State University and East Carolina University before coming to teach at Purdue University Calumet in 2011 in the Chemistry & Physics Department. Dr. Schleigh is a co-author of the NSTA book titled Scientific Argumentation in Biology: 30 Classroom Activities and has been a leader in science education through her work with professional development and her interest in science education outreach. Aside from teaching astronomy, physics and science methods for educators, she has worked on projects such as the NASA Deep Impact project, the FINESSE (Faculty Institute for NASA Earth & Space Science Education) project, and the Galileo Teacher Training Program, providing both pedagogical and content training for educators and their students. She has been involved in providing summer workshops for science and math educators such as CREATE (Classrooms Reaching Enquiry through Astronomy & Telescope Education) since 2005, involving k-12 students in her workshops to embed real experiences for the workshop participants to practice what they are learning. She has served as a State Science Fair judge, an international Science Fair Mentor, a Regional Science Fair Director in North Carolina, as the Regional Science Olympiad Director in Indiana, and as the Director of Mentor Coordination and Mentor Trainer for the International Virtual Science Fair for the Near East South Asia Collaboration of schools. This virtual science fair involves multiple universities across the United States and k-12 classroom students from over 50 countries. These efforts have lead to her nomination for the Association of Science Teacher Educators Award of Outstanding Science Educator Mentor in 2011 and 2012.

Dr. Schleigh has focused her classroom teaching on the implementation of argumentation through traditional classroom interactions as well as through online and hybrid learning environments, including the flip classroom structures. As an instructor she has successfully integrated technology to allow students to participate in online discussions and to engage in inquiry that students find exciting and meaningful. The students become a part of the science rather than merely the learners of science by using real data and providing their own ideas and evidence to support their claims as they learn about the topics in their coursework. Her expertise in flip classroom courses is supported by her research background in scientific argumentation and her experience as a science as inquiry teacher. While she works with students pursuing science careers, she enjoys working with STEM educators and future STEM educators to help them better prepare our future leaders and improve STEM education across the United States. She hopes to help make science a topic that more people find interesting and useful including those that come from underserved and underrepresented populations.

“Science is fun, but more importantly, it is how we make informed decisions and learn to ask the ‘right’ questions. People should learn to question what they are told and to ask for meaningful evidence, even in everyday circumstances. Science is not just what happens in the classroom, but what happens in our everyday lives; and it is therefore something that everybody can and should be actively engaged in.”

– Dr. Sharon Schleigh
The Hoosier Association of Science Teachers, Inc. would like to salute the Indiana teachers who have been selected as recipients of the prestigious Presidential Award for Excellence in Mathematics and Science Teaching. These teachers have exhibited exemplary teaching in their discipline and have justifiably been recognized nationally for their service. We are proud of their accomplishments and know that they will serve as models for their colleagues.

<table>
<thead>
<tr>
<th>Year</th>
<th>Discipline</th>
<th>Name</th>
<th>School</th>
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### HASTI Past Presidents 1969-2013

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### Past Recipients of the Edward L. Frazier HASTI Distinguished Service Award

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<td>John V. Davis</td>
<td>1997</td>
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<td>Jon R. Hendrix</td>
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<td>Margaret Flack</td>
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<td>Isadore Julien</td>
<td>2013</td>
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IGSS Summer Program 2014

Call for High School Teacher Applications

Attend: A seven-week, EPA-sponsored course on the science of sustainability on campus of Marian University

For: Central Indiana high school teachers in the life and physical sciences who want to add sustainability education to their curricula. Middle school science teachers with degrees in the life and physical sciences will also be considered.

When: June 9th – July 25th

Earn: five credit hours from Marian University with complete tuition remission

Earn: $400 per week of research stipend (total of $2,800)

Develop: environmentally relevant labs / modules for your classroom

Network: with science educators across the state

For more information visit our website at www.marian.edu/IGSS - or - www.facebook.com/MU.IGSS

HASTI Booth # 306-308

Summer 2013 IGSS Participants
10 Students, 4 teachers, 3 MU -Academic Leaders

MARIAN UNIVERSITY
Indianapolis

School of Mathematics and Sciences
## Elementary Sessions

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<tr>
<th>Date</th>
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<td>8:30 a.m.</td>
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<td>Elementary FUN = Foods help to Understand Nutrition</td>
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<td>Thur.</td>
<td>8:30 a.m.</td>
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<td>Elementary Improving Student Learning through the Engineering of Compost!</td>
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<td>Thur.</td>
<td>8:30 a.m.</td>
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<td>Elementary STEM is Elementary</td>
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<td>Elementary Elementary Literacy Framework: Methods for Teaching Literacy in Elementary Science</td>
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<td>Thur.</td>
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<td>Thur.</td>
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<td>Elementary Every School Yard Is A Habitat</td>
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<td>Thur.</td>
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<td>Thur.</td>
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<td>Elementary Crime Busters: A Mobile Hands-On Chemistry Camp</td>
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<td>Elementary I Taught It, Did They Learn It?</td>
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<td>Fri.</td>
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<td>Elementary Examining the Evidence for Student Learning</td>
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<td>Fri.</td>
<td>9:30 a.m.</td>
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<td>Elementary Simple and Cheap Demos and Experiments to do with Elementary Students</td>
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<td>Elementary Teaching Science as Questions, Claims, and Evidence. An Introduction to the Science Writing Heuristic</td>
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<td>Fri.</td>
<td>12:30 p.m.</td>
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<td>Elementary SCIENCE ON SATURDAYS! C.S.I. ELEMENTARY - An Experience-Based Science Program for 3rd Graders</td>
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<td>Fri.</td>
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<td>Elementary Two Birds with One Stone: Including Literacy in Energy Education</td>
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<td>Elementary Ulindy Jr-Scientist Program: Using Minds-on Science Activities to Complement Non-Fiction Literature</td>
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<td>Fri.</td>
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<td>Elementary How Do We Get All This Energy?</td>
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## Middle Level Sessions

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<th>Discipline</th>
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<tbody>
<tr>
<td>Wed.</td>
<td>8:00 a.m.</td>
<td>12:00 p.m.</td>
<td>Middle Level Home and School Science Activities</td>
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<td>Physical Science</td>
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<tr>
<td>Wed.</td>
<td>8:00 a.m.</td>
<td>12:00 p.m.</td>
<td>Middle Level ED2: Earth Day Every Day</td>
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<td>Wed.</td>
<td>8:00 a.m.</td>
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<td>Middle Level Science in Seconds</td>
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<tr>
<td>Wed.</td>
<td>8:00 a.m.</td>
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<td>Middle Level Explore STEM Learning with NASA Ignite!</td>
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<tr>
<td>Wed.</td>
<td>1:00 p.m.</td>
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<td>Middle Level Working “in Space” with LEGOs</td>
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<tr>
<td>Wed.</td>
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<td>Middle Level Climate Change Exploration with NASA</td>
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<td>Thur.</td>
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<td>Middle Level Indiana Science Initiative Seventh Grade Roundtable: Physical Science</td>
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<td>Thur.</td>
<td>8:30 a.m.</td>
<td>9:15 a.m.</td>
<td>Middle Level Talk to Think, Listen to Understand, Write to Explain</td>
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<td>Thur.</td>
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<td>Middle Level Indiana Science Initiative (ISI) in a 1:1 School</td>
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<td>Middle Level The Science in Soil</td>
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<td>Thur.</td>
<td>9:30 a.m.</td>
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<td>Middle Level Making Sense of Graphs in the ISI FOSS Force and Motion Module</td>
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<td>Thur.</td>
<td>9:30 a.m.</td>
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<td>Middle Level Reciprocal Teaching: Using the Fab Four Reading Strategies to Improve Comprehension</td>
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<td>Middle Level Science Education for Global Citizenship: People, Food, Energy and Sustainability</td>
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<td>Middle Level Empowering Students to Impact the Environment</td>
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<td>Thur.</td>
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<td>Middle Level What is the Connection Between Science and Engineering?</td>
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<td>12:30 p.m.</td>
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<td>Middle Level Grade 7 Science Teachers—Force and Motion Unit part of the SEPUP Indiana Model Curriculum (Grades 6-8)!</td>
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<td>1:30 p.m.</td>
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<td>Middle Level Grade 5 Science Teachers—Energy Unit part of the SEPUP Indiana Model Curriculum (Grades 6-8)!</td>
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<td>Thu.</td>
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<td>Middle Level Finn Activities to Integrate STEM Education</td>
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<td>Thu.</td>
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<td>Middle Level Middle Level Sharathon - Sharing Our Best with the Best</td>
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<td>Thu.</td>
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<td>Middle Level What Every Middle School Teacher Needs…</td>
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<td>Thu.</td>
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<td>Middle Level Blogging Isn’t Just for Feelings: Science Blogging in Your Classroom</td>
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<td>Thu.</td>
<td>2:30 p.m.</td>
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<td>Middle Level Teaching Engineering Concepts to Harness Future Innovators and Technologists (TECHFIT)</td>
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<td>Thu.</td>
<td>2:30 p.m.</td>
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<td>Middle Level Grade 8 Science Teachers—Chemistry of Materials Unit part of the SEPUP Indiana Model Curriculum (Grades 6-8)!</td>
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<td>Fri.</td>
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<td>Middle Level What The Heck Happened???</td>
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<td>Fri.</td>
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<td>Middle Level Teaching Science with Engineering Design</td>
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<td>Fri.</td>
<td>8:30 a.m.</td>
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<td>Middle Level Interactions Toward Promoting the Development of Whole-Class Dialogue in a Middle School Science Classroom</td>
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<td>Fri.</td>
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<td>Middle Level Working “in Space” with LEGOs</td>
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<td>Science/Technology/Society</td>
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<td>Fri.</td>
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<td>Middle Level generationOn - Real-World Learning Through Service-Learning</td>
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<td>Fri.</td>
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<td>Middle Level Digital Resources and Tools for Science Teachers</td>
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<td>Fri.</td>
<td>12:30 p.m.</td>
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<td>Middle Level Inquiry Based Science Teaching and Cross-Curricular Connections</td>
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<td>Fri.</td>
<td>12:30 p.m.</td>
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<td>Middle Level The Advantages of Using Science Notebooks</td>
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<td>Fri.</td>
<td>1:30 p.m.</td>
<td>2:15 p.m.</td>
<td>Middle Level Are Your Students Excited About Science? Technology and the ISI curriculum</td>
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<td>Fri.</td>
<td>1:30 p.m.</td>
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<td>Middle Level Great Reads for Science Book Talk</td>
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<td>Science/Technology/Society</td>
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<td>Fri.</td>
<td>1:30 p.m.</td>
<td>2:15 p.m.</td>
<td>Middle Level Integrating Technology in the Middle School Science Classroom</td>
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<td>Fri.</td>
<td>2:30 p.m.</td>
<td>3:15 p.m.</td>
<td>Middle Level Teaching H.S. Biology to 8th Graders Successfully!</td>
<td>High School</td>
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### High School Sessions

<table>
<thead>
<tr>
<th>Date</th>
<th>Sched Time</th>
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<tr>
<td>Wed.</td>
<td>8:00 a.m.</td>
<td>12:00 p.m.</td>
<td>High School Teaching Physics for the 1st Time</td>
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<td>Wed.</td>
<td>9:00 a.m.</td>
<td>2:00 p.m.</td>
<td>High School BioBuilder: Ready-to-use Classroom and Lab Curricula that Integrates Engineering Into Biology</td>
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<td>Wed.</td>
<td>1:00 p.m.</td>
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<td>High School Hands-On with Nuclear Science</td>
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<td>1:00 p.m.</td>
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<td>High School Hands-On Experiments Using a Mini Gas Chromatograph</td>
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<td>Thur.</td>
<td>8:30 a.m.</td>
<td>9:15 a.m.</td>
<td>High School Kinesthetic Activities for High School Classrooms</td>
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<td>Thur.</td>
<td>8:30 a.m.</td>
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<td>High School Engaging Students in Mitosis and Meiosis</td>
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<td>Thur.</td>
<td>8:30 a.m.</td>
<td>9:15 a.m.</td>
<td>High School Physics First: Building (or rebuilding) a Physics Program at your School</td>
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<td>Thur.</td>
<td>8:30 a.m.</td>
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<td>High School Physics Demonstrations: Vibrations, Waves, and Sound</td>
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<td>Thur.</td>
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<td>High School An Energy Efficient Way to Teach Energy</td>
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<td>High School Inquiry Learning in the Chemistry Classroom using POGIL</td>
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<td>Thur.</td>
<td>8:30 a.m.</td>
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<td>High School Going Paperless: Electronic Lab Notebooks in the High School Classroom</td>
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<td>High School Collaboration Made Easy: Using Google Apps (and Chromebooks) in High School Classrooms</td>
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<td>Thur.</td>
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<td>High School The Forces of Learning</td>
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<td>Thur.</td>
<td>8:30 a.m.</td>
<td>9:15 a.m.</td>
<td>High School Engage Students and Bring Inquiry into the Human Body Systems Curriculum</td>
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<td>Thur.</td>
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<td>High School Hawaii Marine Science Seminar</td>
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<td>Thur.</td>
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<td>High School Q &amp; A with Chemistry Modelers</td>
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<td>Thur.</td>
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<td>High School Science Express Lessons for Chemistry, Biology, Physics and Earth Science Teachers</td>
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<td>High School New Advanced Inquiry Labs for AP Chemistry from Flinn Scientific</td>
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<td>High School Simon Says Have Fun With Anatomy</td>
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<td>High School Incorporating Inquiry Instruction &amp; Statistical Analysis in the Science Classroom</td>
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<td>High School The 2013 AP Biology Exam - A Debriefing</td>
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<td>High School YOU CAN Get There from Here!</td>
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<td>Thur.</td>
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<td>High School Understanding Enzymes using the Alphabet, Puzzles and LEGOs™</td>
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<td>Thur.</td>
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<td>High School Looking Through the Eyes of a Chemistry Professor</td>
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<td>High School Teaching Electron Configuration Using a Popular Board Game</td>
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<td>Thur.</td>
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<td>High School An Introduction to Standards-Based Grading in Science</td>
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<td>High School Neuroscience: The Brain &amp; Beyond</td>
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<td>High School “Unrulian” – It’s Not Just a Patriotic Story about the Founding of Our Country</td>
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<td>High School The Indiana Modeling Curriculum: New Results for 1st Year Biology and ICP;Future PD Workshops</td>
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<td>Thur.</td>
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<td>High School Catch a Wave</td>
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<td>High School The Chemistry Conversation Pit</td>
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<td>Standards-Based Grading in Science: Management and Implementation</td>
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<td>Carbon Cycle and Climate Change - How They're Connected</td>
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<td>Preparing Students for Careers in Science and Technology</td>
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<td>Modeling Instruction in the Classroom: Physics</td>
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<td>Sustainability in Science in the High School Classroom</td>
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<td>Thur.</td>
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<td>Assessments Made Easy: Find FREE Online Tools for Developing Assessments to Refresh Your Inquiry/PBL classroom</td>
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<td>Fri.</td>
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<td>IABT Breakfast Meeting/Quick Hits II</td>
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<td>Fri.</td>
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<td>I Teach ICP Differently and So Can You!</td>
<td>Physical Science</td>
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<td>Fri.</td>
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<td>Physics I Standards: IDE vs. NGSS</td>
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<td>Introducing Forces First</td>
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<td>Fri.</td>
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<td>Using Technology to Build Student Understanding of the Structure, Properties, and Changes of Matter</td>
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</tr>
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<td>Fri.</td>
<td>8:30 a.m.</td>
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<td>Reading, Writing, and Chemistry</td>
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<tr>
<td>Fri.</td>
<td>8:30 a.m.</td>
<td>High School</td>
<td>Problem-Based Learning: Changing the Way a Department Works</td>
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<td>Fri.</td>
<td>8:30 a.m.</td>
<td>High School</td>
<td>Bioethics in The Hunger Games: Evaluating the Effects of Genetic Engineering through Popular Fiction</td>
<td>Life Science</td>
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<td>Fri.</td>
<td>8:30 a.m.</td>
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<td>Solid Waste Management: Issues and Options</td>
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<td>Fri.</td>
<td>9:30 a.m.</td>
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<td>Infusing Real Research into the Science Classroom!</td>
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<td>Fri.</td>
<td>9:30 a.m.</td>
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<td>Modeling Chemical Bonds and Reactions with Legos</td>
<td>Physical Science</td>
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<td>Fri.</td>
<td>9:30 a.m.</td>
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<td>We have iPads, Now What?</td>
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<td>Fri.</td>
<td>9:30 a.m.</td>
<td>High School</td>
<td>Coaching and Teaching Science - Are There Enough Hours in the Day?</td>
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<td>9:30 a.m.</td>
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<td>21st Century Education</td>
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<td>Lab Performance Assessments</td>
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<td>Secondary Literacy Framework: Methods for Teaching Literacy in Secondary Science</td>
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<td>Beyond the Classroom: Challenging your Students with Independent Research</td>
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<td>Geo Spatial Technologies in Your Classroom</td>
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<td>Fat Dogs and Coughing Horses</td>
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<td>Fri.</td>
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<td>Measuring and Modeling the Invisible - Leading Edge Particle Physics and Applications for Science, Technology and Mathematics</td>
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<td>Fri.</td>
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<td>Where's the DATA? Media Literacy and the Science Literacy Standards</td>
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<td>PASC0's SPARKscience for High School Students -- Free Sensors for Lucky Attendees!</td>
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<td>World Food Prize Youth Institute at Purdue</td>
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<td>Research Goes to School: Bringing Advanced Research on Biofuels to the High School Classroom</td>
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<td>Microscope Cameras: Why You'll Love Them!</td>
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<td>Fri.</td>
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<td>Mixing Light and Paint</td>
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<td>How to Grab a Teenager's Attention</td>
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<td>Fri.</td>
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<td>The Joys of Teaching AP Science</td>
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<td>Be Green, Learn Green, Earn Green: An EPA-Funded Intensive Summer Program in Sustainability for High School Science Teachers</td>
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<td>The Principles of Mechanics from Less than One Second of Data</td>
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<td>A Grab Bag of Biology and Chemistry Labs</td>
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<td>Fri.</td>
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<td>Endocrine Disruptors and PBDEs and Epigenetics, Oh My... Emerging Issues in Educational Environmental Health</td>
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<td>1:30 p.m.</td>
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<td>What's so Flipping Exciting about Flipping the Classroom? Lecture-Free Teaching Methods That Engage Students</td>
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<td>Is Paperless Possible?</td>
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<td>Fri.</td>
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<td>Converting Summer Research into Engaging Classroom Experiences</td>
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<td>Fri.</td>
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<td>The Quake Cottage Program</td>
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<td>Fri.</td>
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<td>Effective Strategies for Sharing Climate Change Science and Energy Consumption Implications in the Classroom</td>
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<td>Biology Preconception Alert: PHOTOSYNTHESIS &amp; RESPIRATION are Linked!</td>
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## 2014 HASTI Sessions by Audience

### College Sessions

<table>
<thead>
<tr>
<th>Date</th>
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<th>Session Title</th>
<th>Audience</th>
<th>Discipline</th>
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<tr>
<td>Thur.</td>
<td>2:30 p.m.</td>
<td>3:15 p.m.</td>
<td>Rube Goldberg Machine Encore</td>
<td>College</td>
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<td>Fri.</td>
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<td>Delegating Lab Work Among Students: Cooperative - Inquiry Lab Teamung</td>
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<td>Fri.</td>
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<td>Mastering the Chemical Formula: an Exceptionally Effective Way to Teach Subscripts and Coefficients</td>
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<tr>
<td>Wed. 8:00 a.m.</td>
<td>12:00 p.m.</td>
<td>General</td>
<td>Historical Developments in Electricity and Magnetism</td>
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<td>Wed. 8:00 a.m.</td>
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<td>General</td>
<td>Exploring the Moon with NASA- Lunar Rock and Meteorite Certification Workshop</td>
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<td>Wed. 1:00 p.m.</td>
<td>5:00 p.m.</td>
<td>General</td>
<td>Recharge your Teaching Batteries with the Flipped Classroom</td>
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<td>Science/Technology/Society</td>
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<tr>
<td>Wed. 1:00 p.m.</td>
<td>5:00 p.m.</td>
<td>General</td>
<td>Engineeriing STEM Success – Building PBL Projects: Warsaw Community Schools/Ball State University MSP Partnership</td>
<td>General</td>
<td>Interdisciplinary</td>
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<tr>
<td>Thur. 9:30 a.m.</td>
<td>10:15 a.m.</td>
<td>General</td>
<td>Preparing Science Teachers for High Needs High School Students: The Woodrow Wilson Indiana Teaching Fellowship Program at Ball State University</td>
<td>General</td>
<td>Science Education</td>
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<td>Thur. 9:30 a.m.</td>
<td>10:15 a.m.</td>
<td>General</td>
<td>STEM Initiatives of the United States Air Force Auxiliary-Civil Air Patrol</td>
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<td>Thur. 9:30 a.m.</td>
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<td>Concentrated Animal Feeding Operations (CAFOS) as Potential Incubators Influenza Outbreaks</td>
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<td>STEM Education and STEM Schools - Indiana Department of Education’s STEM Initiative</td>
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<td>Thur. 12:30 p.m.</td>
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<td>Thur. 12:30 p.m.</td>
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<td>Using an NSTA Student Chapter to Change Science Education through Hands-On Science Saturdays' Workshops</td>
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<td>Thur. 12:30 p.m.</td>
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<td>General</td>
<td>“How do you know?” - The Most Important Question in Science</td>
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<td>The Power of Formative Assessment</td>
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<td>Thur. 1:30 p.m.</td>
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<td>Exploring Chemistry Beyond the Classroom-Activities for Science Nights and Outreach Programs</td>
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<td>Thur. 1:30 p.m.</td>
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<td>IDOE Office of eLearning: eLearning in Indiana - What's Now, What's New, What's Possible?</td>
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<td>Successful PBL: Design, Momentum and Accountability</td>
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<td>Hands-On with Hisser</td>
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<td>Building Science Vocabulary One Fold at a Time</td>
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<td>General Model Student Stewardship Projects to Foster Watershed Protection</td>
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<td>General The International Orangutan Center's Educator Academy – Teacher Professional Development at the Indianapolis Zoo!</td>
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<td>General The Annual Collaborating for Education and Research Forum: a Catalyst for Building Professional STEM Community</td>
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<td>General Cardboard Regatta - A Great Way to End the School Year!</td>
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<td>General Science Notebooking in an Inquiry-Based Classroom</td>
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<td>General The Psychological Science: Mind, Brain, and Behavior</td>
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<td>General Outreach Division of School Improvement-Indiana Department of Education's Initiative to Support Schools</td>
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<td>General Making Sense of Data Using Google Forms</td>
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<td>General Innovative Thinking: Inspiring Students to be Innovators</td>
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<td>General Earth Science Teachers Share-A-Thon</td>
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<td>General Monarchs in the Classroom: Creating Citizen Scientists</td>
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<td>General Fusing Science and Art</td>
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<td>Fri.</td>
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<td>General How the NSTA Learning Center Can Make Teaching Easier</td>
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<td>Fri.</td>
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<td>9:15 a.m.</td>
<td>General Integrate iPad® and BYOD with Vernier Technology</td>
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<td>General Educator Licensing and Evaluation-Question and Answers</td>
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<td>General Why Go Wi-Fi</td>
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<td>General Don't Call It the Vomit Comet: Weightless Wonders with NASA</td>
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<td>General If I Could Only Read Their Minds</td>
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<td>General Environmental Literacy - What It Is, How to Include It, and Why It's Important!</td>
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<td>General Science Olympiad: A Standards-Based Curriculum</td>
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<td>General IESTA Annual Rock Raffle</td>
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<td>General Composting with Worms -- Make a Worm Bin</td>
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<td>Fri.</td>
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<td>General Inquiry and Creativity</td>
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<td>General Earning Money for your Classroom Through Grant Writing</td>
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<td>General Medical Explorer - Making Real World Connections with Medical Case Studies</td>
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<td>10:15 a.m.</td>
<td>General Integrate iPad® and other Mobile Devices with Vernier Technology</td>
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<td>General Create a Digital Wi-Fi Classroom</td>
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<td>General Creating An Environment for Academic Success for All in the Science Classroom</td>
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<td>9:30 a.m.</td>
<td>10:15 a.m.</td>
<td>General How to Fund Science Projects through Successfully Writing Grant Requests</td>
<td>General</td>
<td>Science Education</td>
</tr>
<tr>
<td>Fri.</td>
<td>9:30 a.m.</td>
<td>10:15 a.m.</td>
<td>General ULTIMATE Project-Based Learning: Changing the World!</td>
<td>General</td>
<td>Interdisciplinary</td>
</tr>
<tr>
<td>Fri.</td>
<td>9:30 a.m.</td>
<td>10:15 a.m.</td>
<td>General FIRST Lego League</td>
<td>General</td>
<td>Science/Technology/Society</td>
</tr>
<tr>
<td>Fri.</td>
<td>9:30 a.m.</td>
<td>10:15 a.m.</td>
<td>General Game On: Video Games as Tools for Teaching STEM</td>
<td>General</td>
<td>Science Education</td>
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<tr>
<td>Fri.</td>
<td>9:30 a.m.</td>
<td>10:15 a.m.</td>
<td>General When Does the Gender Pipeline Start to Leak?</td>
<td>General</td>
<td>Science Education</td>
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<tr>
<td>Fri.</td>
<td>9:30 a.m.</td>
<td>10:15 a.m.</td>
<td>General Meteor Impacts: What Can We Do About/With Them?</td>
<td>General</td>
<td>Earth Science</td>
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<tr>
<td>Fri.</td>
<td>9:30 a.m.</td>
<td>10:15 a.m.</td>
<td>General Urban Green: The Next Generation</td>
<td>General</td>
<td>Ecology/Environment</td>
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<td>Fri.</td>
<td>9:30 a.m.</td>
<td>10:15 a.m.</td>
<td>General Earth Partnership for Schools</td>
<td>General</td>
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<tr>
<td>Fri.</td>
<td>9:30 a.m.</td>
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<td>General Foldable Projects - Let's Push the “Envelope”</td>
<td>General</td>
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<tr>
<td>Fri.</td>
<td>12:30 p.m.</td>
<td>1:15 p.m.</td>
<td>General The NSTA Learning Center - An Amazing Resource for Teachers</td>
<td>General</td>
<td>Interdisciplinary</td>
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<tr>
<td>Fri.</td>
<td>12:30 p.m.</td>
<td>1:15 p.m.</td>
<td>General No Note Taker Left Behind - Scrolling Powerpoint Notes</td>
<td>General</td>
<td>Interdisciplinary</td>
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<tr>
<td>Fri.</td>
<td>12:30 p.m.</td>
<td>1:15 p.m.</td>
<td>General Income Tax for Teachers</td>
<td>General</td>
<td>Interdisciplinary</td>
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<tr>
<td>Fri.</td>
<td>12:30 p.m.</td>
<td>1:15 p.m.</td>
<td>General Next Generation Science Standards/ K12 Science Framework: An Introduction, Overview, and Where Indiana Stands for Implementation</td>
<td>General</td>
<td>Science Education</td>
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<tr>
<td>Fri.</td>
<td>12:30 p.m.</td>
<td>1:15 p.m.</td>
<td>General Teaching Simple Machines, Force and Motion and a Little Energy Using LEGO</td>
<td>General</td>
<td>Science Education</td>
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<td>Fri.</td>
<td>12:30 p.m.</td>
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<td>General Attention, Meaning, and Primate-Recency: Making the Connection</td>
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<td>Fri.</td>
<td>12:30 p.m.</td>
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<td>General Technology Activities 101 and More</td>
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<td>Fri.</td>
<td>12:30 p.m.</td>
<td>1:15 p.m.</td>
<td>General Meeting NGSS through Permaculture, Resiliency, and Biodynamics</td>
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<td>Fri.</td>
<td>12:30 p.m.</td>
<td>1:15 p.m.</td>
<td>General The Dynamics of Climate- A Toolkit for Teacher Professional Development</td>
<td>General</td>
<td>Ecology/Environment</td>
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<td>Fri.</td>
<td>12:30 p.m.</td>
<td>1:15 p.m.</td>
<td>General Starting a STEAM School</td>
<td>General</td>
<td>Interdisciplinary</td>
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<td>Fri.</td>
<td>1:30 p.m.</td>
<td>2:15 p.m.</td>
<td>General The Effect of Learner-Directed Scientific Investigations on Students’ Questionings and Their Nature of Science Views</td>
<td>General</td>
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<td>Fri.</td>
<td>1:30 p.m.</td>
<td>2:15 p.m.</td>
<td>General Science Education, Literacy and Equity: Perfect Partners!</td>
<td>General</td>
<td>Science Education</td>
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<td>Fri.</td>
<td>2:30 p.m.</td>
<td>3:15 p.m.</td>
<td>General 30 Ideals in 30 minutes: An Action Packed Classroom!</td>
<td>General</td>
<td>Science Education</td>
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<td>3:15 p.m.</td>
<td>General Using Lego Robotics to Support Math and Science Self-Efficacy in K-8 Learners</td>
<td>General</td>
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<td>Fri.</td>
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<td>3:15 p.m.</td>
<td>General Labs for Understanding the Impacts of Global Warming: Designed for Climate Change Deniers</td>
<td>General</td>
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</table>
2014 HASTI Conference Strands

To help you make the most of this professional development opportunity, the 2014 HASTI Conference features five strands, enabling you to focus on a specific area of interest or need. The Conference Committee has identified sessions that are relevant to each of the five strands and that fit together to provide a cohesive, multi-session experience. These sessions are listed below and will also be identified by icons in the program listing. Plan your attendance around the strands to meet your individual professional growth plan and to justify to your school district the value of attending this professional development conference.

Inquiry Instruction

**Wednesday, February 5**

- Exploring the Moon with NASA: Lunar Rock and Meteorite Certification Workshop
- Teaching Physics for the 1st Time
- ED2: Earth Day Every Day
- Science in Seconds
- Explore STEM Learning with NASA Ignite!
- BioBuilder: Ready-to-use Classroom and Lab Curricula that Integrates Engineering Into Biology
- Bring the Ocean to Your Classroom while Enhancing STEM Instruction - Ocean Waves, Tides, Upwelling, and El Ninos
- Hands-On with Nuclear Science
- Working “in Space” with LEGOs

**Thursday, February 6**

- Filling Young Brains with NeuroscienceFUN = Foods Help to Understand Nutrition
- STEM is Elementary
- Physics First: Building (or rebuilding) a Physics Program at your School
- An Energy Efficient Way to Teach Energy
- Inquiry Learning in the Chemistry Classroom using POGIL
- The Forces of Learning
- Engage Students and Bring Inquiry into the Human Body Systems Curriculum
- Indiana Science Initiative Seventh Grade Roundtable: Physical Science
- Outdoor Science
- Bring the Ocean to Your Classroom while enhancing STEM Instruction - Wind-Driven Ocean Circulation
- Smiling Faces
- Using an NSTA Student Chapter to Change Science Education through Hands-On Science Saturdays Workshops
- "How do you know?" - The Most Important Question in Science
- If You Put a Teacher in the Amazon...
- Hawaii Marine Science Seminar
- Science Express Lessons for Chemistry, Biology, Physics and Earth Science Teachers
- Making Sense of Graphs in the ISI FOSS Force and Motion Module
- Indiana Children & Nature
- Prepare the Ocean to Your Indiana Classroom while enhancing STEM Instruction - Density-Driven Circulation

Inquiry Instruction

**Saturday, February 8**

- Preparing Science Teachers for High Needs High School Students: The Woodrow Wilson Indiana Teaching Fellowship Program at Ball State University
- Incorporating Inquiry Instruction & Statistical Analysis in the Science Classroom
- Understanding Enzymes using the Alphabet, Puzzles and LEGO®
- Teaching Electron Configuration Using a Popular Board Game
- Neuroscience: The Brain & Beyond
- Making Science Notebooking Manageable
- What is the Connection Between Science and Engineering?
- Hands-On with Hissers
- Walking with Science
## 2014 HASTI Conference Strands

<table>
<thead>
<tr>
<th>Monday, February 3</th>
<th>Tuesday, February 4</th>
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<tbody>
<tr>
<td>The International Orangutan Center’s Educator Academy – Teacher Professional Development at the Indianapolis Zoo!</td>
<td>Tom McConnell, 1:30 p.m.</td>
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<tr>
<td>The Indiana Modeling Curriculum: New Results for 1st Year Biology and ICP; Future PD Workshops</td>
<td>Gordon Berry, 1:30 p.m.</td>
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<tr>
<td>Catch a Wave</td>
<td>Elaine Gwinn, 1:30 p.m.</td>
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<tr>
<td>ISI Middle Level Discussion Pit</td>
<td>Jane Hunn, 1:30 p.m.</td>
</tr>
<tr>
<td>Inquire Handbook</td>
<td>Shannon Gwinn, 1:30 p.m.</td>
</tr>
<tr>
<td>Crime Busters: A Mobile Hands-On Chemistry Camp</td>
<td>Linda (Lin) Wozniak, 2:30 p.m.</td>
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<tr>
<td>Cardboard Regatta – A Great Way to End the School Year!</td>
<td>Chris Ludby, 2:30 p.m.</td>
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<tr>
<td>Innovative Thinking: Inspiring Students to be Innovators</td>
<td>Michael O’Bryan, 2:30 p.m.</td>
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<tr>
<td>Ice Age Animals of Indiana’s Karst</td>
<td>Darlene Sefert, 2:30 p.m.</td>
</tr>
<tr>
<td>Modeling Instruction in the Classroom: Physics</td>
<td>Craig Williams, 2:30 p.m.</td>
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### Inquiry Instruction

<table>
<thead>
<tr>
<th>Friday, February 7</th>
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<tbody>
<tr>
<td>Examining the Evidence for Student Learning</td>
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<tr>
<td>Don’t Call It the Vomit Comet: Weightless Wonders with NASA</td>
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<tr>
<td>Science Olympiad: A Standards-Based Curriculum</td>
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<tr>
<td>Problem-Based Learning: Changing the Way a Department Works</td>
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<td>What The Heck Happened?!?</td>
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<tr>
<td>Working “in Space” with LEGO’s</td>
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<td>Inquiry and Creativity</td>
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<td>Earning Money for your Classroom Through Grant Writing</td>
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<td>Medical Explorer - Making Real World Connections with Medical Case Studies</td>
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<td>Game On: Video Games as Tools for Teaching STEM</td>
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<td>Earth Partnership for Schools</td>
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<tr>
<td>Modeling Chemical Bonds and Reactions with Legos</td>
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<td>Infusing Real Research into the Science Classroom!</td>
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<tr>
<td>Are Your Students Excited About Science? Technology and the ISI curriculum</td>
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<tr>
<td>SCIENCE ON SATURDAYS! C.S.I. ELEMENTARY - An Experience-Based Science Program for 3rd Graders</td>
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<tr>
<td>How to Grab a Teenager’s Attention</td>
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<tr>
<td>Engineering Projects for Physics</td>
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<tr>
<td>Inquiry Based Science Teaching and Cross-Curricular Connections</td>
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<tr>
<td>Starting a STEAM School</td>
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<td>A Blast From the Past</td>
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<td>The Effect of Learner-Directed Scientific Investigations on Students’ Questionings and their Nature of Science Views</td>
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<td>How to Grab a Teenager’s Attention</td>
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<tr>
<td>The Principles of Mechanics from Less than One Second of Data</td>
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<tr>
<td>What’s so Flipping Exciting about Flipping the Classroom? Lecture-Free Teaching Methods That Engage Students</td>
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<tr>
<td>Hawaii Marine Science Seminar</td>
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<td>30 Ideals in 30 Minutes: An Action Packed Classroom!</td>
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<td>Using Lego Robotics to Support Math and Science Self-Efficacy in K-8 Learners</td>
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<tr>
<td>Delegating Lab Work Among Students: Cooperative – Inquiry Lab Team</td>
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<tr>
<td>Teaching HS Biology to 8th Graders Successfully</td>
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</tbody>
</table>
## 2014 HASTI Conference Strands

### Assessment for Understanding

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<thead>
<tr>
<th>Topic</th>
<th>Presenter</th>
<th>Time</th>
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<tbody>
<tr>
<td>Relevant Communication</td>
<td>Jeremy Johnson</td>
<td>8:30 a.m.</td>
</tr>
<tr>
<td>Kinesthetic Activities for High School Classrooms</td>
<td>Shannon Wenning</td>
<td>8:30 a.m.</td>
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<tr>
<td>Encouraging Student Thinking and Engagement through Effective Questioning</td>
<td>Deb Sachs</td>
<td>9:30 a.m.</td>
</tr>
<tr>
<td>Wearable Science - State Tested and Kid-Approved</td>
<td>Jody Hodges</td>
<td>9:30 a.m.</td>
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<tr>
<td>The Power of Formative Assessment</td>
<td>William Webb</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>An Introduction to Standards-Based Grading in Science</td>
<td>Jeremy Horner</td>
<td>12:30 p.m.</td>
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<tr>
<td>Successful PBL: Design, Movement and Accountability</td>
<td>Susan Becker</td>
<td>1:30 p.m.</td>
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<tr>
<td>Standards-Based Grading in Science: Management and Implementation</td>
<td>Jeremy Horner</td>
<td>1:30 p.m.</td>
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<tr>
<td>How to Effectively Increase Student Participation in the Classroom</td>
<td>Deb Vannatter</td>
<td>2:30 p.m.</td>
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<tr>
<td>I Taught It, Did They Learn It?</td>
<td>Vickey Zehringer</td>
<td>2:30 p.m.</td>
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<tr>
<td>Earth Science Teachers Share-A-Thon</td>
<td>Elizabeth Ernst</td>
<td>9:30 a.m.</td>
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<tr>
<td>Assessments Made Easy: Find FREE Online Tools for Developing Assessments to Refresh Your Inquiry/PBL Classroom</td>
<td>Lisa Kirkham</td>
<td>2:30 p.m.</td>
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<td>Crystal Pryor</td>
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<td>2:30 p.m.</td>
</tr>
<tr>
<td>What Every Middle School Teacher Needs</td>
<td>Crystal Pryor</td>
<td>2:30 p.m.</td>
</tr>
</tbody>
</table>

### Human Impacts on the Environment

<table>
<thead>
<tr>
<th>Topic</th>
<th>Presenter</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Learning Tree® (PLT) GreenSchools!</td>
<td>Shannon Hudson</td>
<td>1:00 p.m.</td>
</tr>
<tr>
<td>Monarchs in the Classroom: Creating Citizen Scientists</td>
<td>Kirsten Carlson</td>
<td>1:00 p.m.</td>
</tr>
<tr>
<td>Climate Change Exploration with NASA</td>
<td>Susan Kohler</td>
<td>1:00 p.m.</td>
</tr>
</tbody>
</table>

### Human Impacts on the Environment

<table>
<thead>
<tr>
<th>Topic</th>
<th>Presenter</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empower Students as Environmental Stewards</td>
<td>Terri Halley</td>
<td>8:30 a.m.</td>
</tr>
<tr>
<td>The Science in Soil</td>
<td>Sherry Fulk-Bringman</td>
<td>8:30 a.m.</td>
</tr>
<tr>
<td>Project Passenger Pigeon</td>
<td>Joanna Hahn</td>
<td>9:30 a.m.</td>
</tr>
<tr>
<td>Science Education for Global Citizenship: People, Food, Energy and Sustainability</td>
<td>Meredith McAllister</td>
<td>9:30 a.m.</td>
</tr>
<tr>
<td>The Power of Plants</td>
<td>Kristen Poindexter</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Concentrated Animal Feeding Operations (CAFOS) as Potential Incubators Influenza Outbreaks</td>
<td>James Hollenbeck</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Empowering Students to Impact the Environment</td>
<td>Caryl Turrell</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Driving on Sunshine - Cars$, CO2, and You</td>
<td>Dave Wilms</td>
<td>1:30 p.m.</td>
</tr>
<tr>
<td>Sensible Steps for Improving Chemical Management in Schools</td>
<td>Maryann Suero</td>
<td>1:30 p.m.</td>
</tr>
<tr>
<td>Carbon Cycle and Climate Change - How They’re Connected</td>
<td>Caryl Turrel</td>
<td>1:30 p.m.</td>
</tr>
<tr>
<td>Monarchs in the Classroom: Creating Citizen Scientists</td>
<td>Kirsten Carlson</td>
<td>2:30 p.m.</td>
</tr>
<tr>
<td>Fusing Science and Art</td>
<td>Stephanie Dege</td>
<td>2:30 p.m.</td>
</tr>
<tr>
<td>Sustainability in Science in the High School Classroom</td>
<td>Megan Ewing</td>
<td>2:30 p.m.</td>
</tr>
</tbody>
</table>
### 2014 HASTI Conference Strands

#### Human Impacts on the Environment  
Friday, February 7

- Environmental Literacy - What It Is, How to Include It, and Why It's Important!  
  John Brady, 8:30 a.m.
- IESTA Annual Rock Raffle  
  Gary Potter, 8:30 a.m.
- Composting with Worms – Make a Worm Bin  
  Jennifer Woolson-Helrigel, 8:30 a.m.
- Solid Waste Management: Issues and Options  
  Donna Rogler, 8:30 a.m.
- generationOn - Real-World Learning Through Service-Learning  
  Joan Belschwer, 8:30 a.m.
- ULTIMATE Project-Based Learning: Changing the World!  
  Michael Baer, 9:30 a.m.
- Urban Green: The Next Generation  
  Erin Nolan-Higgins, 9:30 a.m.
- Meeting NGSS through Permaculture, Resiliency, and Biodynamics  
  Teddie Mower, 12:30 p.m.
- The Dynamics of Climate: A Toolkit for Teacher Professional Development  
  Dan Shepardson, 12:30 p.m.
- Be Green, Learn Green, Earn Green: An EPA-Funded Intensive Summer Program in Sustainability for High School Science Teachers  
  Carl Lecher, 1:30 p.m.
- Endocrine Disruptors and PBDEs and Epigenetics, Oh My…Emerging Issues in Environmental Health  
  Maryann Suero, 1:30 p.m.
- Effective Strategies for Sharing Climate Change Science and Energy Consumption Implications in the Classroom  
  Steven Smith, 1:30 p.m.
- Labs for Understanding the Impacts of Global Warming; Designed for Climate Change Deniers  
  Dave Wilm, 2:30 p.m.

#### Incorporation of Literacy into Science Education  
Wednesday, February 5

- Home and School Science Activities  
  Bernard Horvath, 8:00 a.m.

#### Incorporation of Literacy into Science Education  
Thursday, February 6

- Improving Student Learning through the Engineering of Compost!  
  Nikki Rumpler, 8:30 a.m.
- Wonderful Weather!  
  Kristen Poindexter, 8:30 a.m.
- Talk to Think, Listen to Understand, Write to Explain  
  Carrie Sanidas, 8:30 a.m.
- Elementary Literacy Framework: Methods for Teaching Literacy in Elementary Science  
  John Wolf, 9:30 a.m.
- Science through the Seasons  
  Kristen Poindexter, 9:30 a.m.
- STEM Initiatives of the United States Air Force Auxiliary-Civil Air Patrol  
  Darrel Williamson, 9:30 a.m.
- Reciprocal Teaching: Using the Fab Four Reading Strategies to Improve Comprehension  
  Carrie Sanidas, 9:30 a.m.
- Notebook Foldables - Not for Novices!  
  Deb Vannatter, 12:30 p.m.
- Using the Science News to Spark Students’ Ideas About Civic Participation  
  Megan Anderson, 12:30 p.m.
- The Ups and Downs of Teaching Energy  
  Heidi Vance, 1:30 p.m.
- Introducing Science Notebooking in the Inquiry Classroom  
  Jennifer Hicks, 1:30 p.m.
- Exploring Chemistry Beyond the Classroom-Activities for Science Nights and Outreach Programs  
  Linda Monroe, 1:30 p.m.
- Building Science Vocabulary One Fold at a Time  
  Nancy Wisker, 1:30 p.m.
- Model Student Stewardship Projects to Foster Watershed Protection  
  Robin Goettel, 1:30 p.m.
- Science Fiction to Reach Science and Science Literacy  
  James Hollenbeck, 1:30 p.m.
- Science Notebooking in an Inquiry-Based Classroom  
  Kelly Masters, 2:30 p.m.
2014 HASTI Conference Strands

Incorporation of Literacy into Science Education

Friday, February 7

Reading, Writing, and Chemistry................................................................. Lori White, 8:30 a.m.
Bioethics in The Hunger Games: Evaluating the Effects of Genetic Engineering through Popular Fiction ................................................................. Donna Keller, 8:30 a.m.
Interactions Toward Promoting the Development of Whole-Class Dialogue in a Middle School Science Classroom ................................................... Matthew Benus, 8:30 a.m.
Creating An Environment for Academic Success for All in the Science Classroom .................................................................................. Deborah Callhoun, 9:30 a.m.
Foldable Projects - Let's Push the “Envelope”.................................................. Nancy Wisker, 9:30 a.m.
Beyond the Classroom: Challenging your Students with Independent Research .................................................................................. Stacey Summitt-Mann, 9:30 a.m.
Teaching Science as Questions, Claims, and Evidence. An Introduction to the Science Writing Heuristic .......................................................... Matthew Benus, 12:30 p.m.
Two Birds with One Stone: Including Literacy in Energy Education ............................................................................................ Caryn Turrel, 12:30 p.m.
Where’s the DATA? Media Literacy and the Science Literacy Standards.................................................................................. Elizabeth Ernst, 12:30 p.m.
World Food Prize Youth Institute at Purdue ............................................................................ Donna Keener, 12:30 p.m.
The Advantages of Using Science Notebooks ....................................................................... Donna Phair, 12:30 p.m.
Juniors Scientist Program: Using Minds-on Science Activities to Complement Non-Fiction Literature ........................................................................ Mary Gobbett, 1:30 p.m.
Great Reads for Science Book Talk ........................................................................................... Deborah Gaff, 1:30 p.m.

Technology Applications in Science Instruction

Wednesday, February 5

Hands-On Experiments Using a Mini Gas Chromatograph ............................................................ Cheryl Wistrom, 1:00 p.m.

Technology Applications in Science Instruction

Thursday, February 6

Developing Spatial Skills through Geographic Information Systems (GIS) Technologies ............................................................ Shireen Desouza, 8:30 a.m.
Going Paperless: Electronic Lab Notebooks in the High School Classroom ............................................................................................ Erica Posthuma-Adams, 8:30 a.m.
Collaboration Made Easy: Using Google Apps (and Chromebooks) in High School Classrooms ........................................................................ Rebecca Taylor, 8:30 a.m.
Indiana Science Initiative (ISI) in a 1:1 School....................................................... Jeff Chicki, 8:30 a.m.
iPad Apps for STEM Activities in the Classroom ...................................................... Janet Jordan, 9:30 a.m.
Ignite the T in STEM! ............................................................................................... Sara Hunter, 9:30 a.m.
You Can Get There from Here! ................................................................. Jacob Swartz, 12:30 p.m.
Grade 7 Science Teachers—Force and Motion Unit part of the SEPUP Indiana Model Curriculum (Grades 6-8)! ........................................ Denis Baker, 12:30 p.m.
Active Learning and eLearning................................................................................... Deb Vannatter, 1:30 p.m.
IDOE Office of eLearning: eLearning in Indiana - What’s Now, What’s New, What’s Possible? ........................................................................... Candice Dodson, 1:30 p.m.
“Urination” - It’s Not Just a Patriotic Story about the Founding of Our Country................................................................. Gregory McCurdy, 1:30 p.m.
Mobile Learning - Exploring Energy Systems ............................................................ Bianca McRae, 1:30 p.m.
Grade 6 Science Teachers—Energy Unit part of the SEPUP Indiana Model Curriculum (Grades 6-8)! ......................................................... Denis Baker, 1:30 p.m.
The Evolution of Online Science Education....................................................................... Ron Weiss, 2:30 p.m.
The Psychological Science: Mind, Brain, and Behavior .............................................. Benjamin Motz, 2:30 p.m.
Making Sense of Data Using Google Forms ........................................................................ Ryan Bruick, 2:30 p.m.
IACT Share-A-Thon................................................................................................. Bill Bayley, 2:30 p.m.
Flinn Activities to Integrate STEM Education ....................................................... Janet Hoekenga, 2:30 p.m.
Blogging Isn’t Just for Feelings: Science Blogging in Your Classroom......................... Janet Hoekenga, 2:30 p.m.
Teaching Engineering Concepts to Harness Future Innovators and Technologists (TECHFIT) .................................................................................. Alka Harriger, 2:30 p.m.
Grade 8 Science Teachers—Chemistry of Materials Unit part of the SEPUP Indiana Model Curriculum (Grades 6-8)! ........................................ Denis Baker, 2:30 p.m.
### 2014 HASTI Conference Strands

#### Technology Applications in Science Instruction  
*February 5-7, 2014*

<table>
<thead>
<tr>
<th>Session</th>
<th>Presenter</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>How the NSTA Learning Center Can Make Teaching Easier</td>
<td>Kate Baird</td>
<td>8:30 a.m.</td>
</tr>
<tr>
<td>Integrate iPad® and BYOD with Vernier Technology</td>
<td>Angie Harr</td>
<td>8:30 a.m.</td>
</tr>
<tr>
<td>Why Go Wi-Fi?</td>
<td>David Doty</td>
<td>8:30 a.m.</td>
</tr>
<tr>
<td>If I Could Only Read Their Minds</td>
<td>Craig Smiley</td>
<td>8:30 a.m.</td>
</tr>
<tr>
<td>Using Technology to Build Student Understanding of the Structure, Properties, and Changes of Matter</td>
<td>David Doherty</td>
<td>8:30 a.m.</td>
</tr>
<tr>
<td>Teaching Science with Engineering Design</td>
<td>Laura O'Shaughnesssey</td>
<td>8:30 a.m.</td>
</tr>
<tr>
<td>Thermodynamics with Project Based Learning</td>
<td>Kristen Swangin</td>
<td>8:30 a.m.</td>
</tr>
<tr>
<td>Create a Digital Wi-Fi Classroom</td>
<td>Angie Harr</td>
<td>9:30 a.m.</td>
</tr>
<tr>
<td>FIRST Lego League</td>
<td>Kendal Smith</td>
<td>9:30 a.m.</td>
</tr>
<tr>
<td>We have iPads, Now What?</td>
<td>Kim Terry</td>
<td>9:30 a.m.</td>
</tr>
<tr>
<td>Individualized Honors Chemistry (iChem)</td>
<td>Kendall Smith</td>
<td>9:30 a.m.</td>
</tr>
<tr>
<td>Geo Spatial Technologies in Your Classroom</td>
<td>Kathy Kozenski</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Digital Resources and Tools for Science Teachers</td>
<td>Vic Chamness</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Website Tools You Need for Science</td>
<td>Sue Keene</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>The NSTA Learning Center - An Amazing Resource for Teachers</td>
<td>Tina Harris</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>No Note Taker Left Behind - Scrolling Powerpoint Notes</td>
<td>Rick Dubbs</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Teaching Simple Machines, Force and Motion and a Little Energy Using LEGO</td>
<td>Ivery Toussant, Jr.</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Technology Activities 101 and More</td>
<td>Reena Markstahler</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Measuring and Modeling the Invisible - Leading Edge Particle Physics and Applications for Science, Technology and Mathematics</td>
<td>David Sederberg</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Catching a Mystic Tiger by the Tail - High Powered Rocketry in Secondary Education</td>
<td>Melissa McCarthy</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>PASCO’s SPARKscience for High School Students – Free Sensors for Lucky Attendees!</td>
<td>Dorothy Haggerty</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Microscope Cameras: Why You’ll Love Them!</td>
<td>Stacey Summitt-Mann</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Using the iPhone to Record Data in a Physics Classroom</td>
<td>Tim Duman</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>Is Paperless Possible?</td>
<td>Timothy Martin</td>
<td>1:30 p.m.</td>
</tr>
<tr>
<td>Day in the Life of a 1:1 Science Teacher</td>
<td>Carissa Prater</td>
<td>1:30 p.m.</td>
</tr>
<tr>
<td>Converting Summer Research into Engaging Classroom Experiences</td>
<td>John Genisic</td>
<td>1:30 p.m.</td>
</tr>
<tr>
<td>Integrating Technology in the Middle School Science Classroom</td>
<td>Sue Gnagy</td>
<td>1:30 p.m.</td>
</tr>
<tr>
<td>Biology preconception alert: PHOTOSYNTHESIS &amp; RESPIRATION are Linked!</td>
<td>Denis Baker</td>
<td>1:30 p.m.</td>
</tr>
<tr>
<td>Mastering the Chemical Formula: an Exceptionally Effective Way to Teach Subscripts and Coefficients</td>
<td>Denis Baker</td>
<td>2:30 p.m.</td>
</tr>
</tbody>
</table>
Anatomy in Clay Learning System ........................................... 214
Arbor Scientific ....................................................................... 314
Ball State University ............................................................... 417, 516
Benz Microscope Optics Center, Inc. ........................................ 504
Biozone, International Ltd. ..................................................... 702
Bitwixt Software Systems ..................................................... 401
Camp Invention ........................................................................ 106
Conner Prairie ........................................................................... 115
Dinah-Might Adventures .......................................................... 108
Discovery Park/Purdue University ............................................ 804
Drug & Laboratory Disposal, Inc. ............................................. 709
Educational Innovations, Inc. ................................................... 201, 300
einstein™ Tablet+ ..................................................................... 615
eScience Labs, LLC .................................................................... 400
ETHOS Science Center ............................................................. 307, 309, 406, 408
Fisher Science Education .......................................................... 604
Fit to a Tee ............................................................................... 600
Flat Rock River YMCA Camp .................................................... 103
Flinn Scientific, Inc. ................................................................. 105, 107
generationOn Indiana ............................................................... 302
Geography Educators’ Network of Indiana, Inc. ......................... 704
IDNR-Division of Fish & Wildlife .............................................. 616
IMLEA .......................................................................................... 304
IN DNR Forestry ........................................................................ 517
IN Society of American Foresters .............................................. 206
Indiana Caverns ......................................................................... 706
Indiana Department of Environmental Management .................. 605
Indiana Geological Survey ......................................................... 703-707
Indiana Section of the American Association of Physics Teachers .................................................... 208
Indiana Tree Farm ....................................................................... 204
Indiana State Museum and Historic Sites ................................... 114
Indiana University ................................................................. 714-720, 715-721
Indianapolis Zoo ........................................................................ 416
I-STEM Resource Network ......................................................... 808
IU Health Neuroscience Center ............................................... 609
Lab Archives ........................................................................... 708
Lab-Aids .................................................................................... 402
LEGO Education ....................................................................... 301, 303
Marian University ............................................................... 306-308
McGraw-Hill Education ............................................................ 405
Nasco ......................................................................................... 317
National Geographic Learning/ Cengage Learning ..................... 203-205
National Weather Service ......................................................... 202
NISMEC- The Northern Indiana Science, Mathematics and Engineering Collaborative .................................................. 500
NSTA .......................................................................................... 602
PASCO scientific ....................................................................... 200
Pearson ....................................................................................... 101
Purdue University ................................................................. 805, 807, 809
Purdue University College of Agriculture ................................... 806
Rose-Hulman Institute of Technology’s Homework Hotline .......... 603
School Specialty Science/Delta Education/ CPO Science/Frey Scientific ......................................................... 501-505
ScienceWear ............................................................................... 209
The Children’s Museum of Indianapolis ...................................... 104
Vernier Software & Technology ................................................ 109
Wells Center Molecular Medicine In Action ............................... 607
Western Michigan University MA: Science Education Online .......................................................... 215
Winkleman Microscope Service .................................................. 100, 102
<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams, Jason</td>
<td>18</td>
</tr>
<tr>
<td>Albrecht, April</td>
<td>17</td>
</tr>
<tr>
<td>Anderson, Megan</td>
<td>22</td>
</tr>
<tr>
<td>Avsar Ermit, Banu</td>
<td>42</td>
</tr>
<tr>
<td>Baker, Michael</td>
<td>36</td>
</tr>
<tr>
<td>Baird, Kate</td>
<td>14</td>
</tr>
<tr>
<td>Bachtell, Joseph</td>
<td>14</td>
</tr>
<tr>
<td>Baker, Denis</td>
<td>20, 23, 27, 44</td>
</tr>
<tr>
<td>Baker, Heather</td>
<td>16</td>
</tr>
<tr>
<td>Bayley, Bill</td>
<td>18, 21, 24</td>
</tr>
<tr>
<td>Becker, Susan</td>
<td>25</td>
</tr>
<tr>
<td>Bellina, Joseph</td>
<td>28</td>
</tr>
<tr>
<td>Belswender, Joan</td>
<td>32</td>
</tr>
<tr>
<td>Benus, Matthew</td>
<td>38</td>
</tr>
<tr>
<td>Berg, Peter</td>
<td>31</td>
</tr>
<tr>
<td>Berry, Gordon</td>
<td>24, 40</td>
</tr>
<tr>
<td>Berry, Joan</td>
<td>18</td>
</tr>
<tr>
<td>Beyer, Ted</td>
<td>41</td>
</tr>
<tr>
<td>Brady, John</td>
<td>32</td>
</tr>
<tr>
<td>Brand, Dr. Lance</td>
<td>20, 35</td>
</tr>
<tr>
<td>Brown, Teresa</td>
<td>28</td>
</tr>
<tr>
<td>Bruck, Ryan</td>
<td>29</td>
</tr>
<tr>
<td>Bryan, Joel</td>
<td>8, 17</td>
</tr>
<tr>
<td>Calhoun, Deborah</td>
<td>36</td>
</tr>
<tr>
<td>Calhoun, John</td>
<td>16</td>
</tr>
<tr>
<td>Carlson, Kristen</td>
<td>16, 29</td>
</tr>
<tr>
<td>Chamness, Vic</td>
<td>35</td>
</tr>
<tr>
<td>Chicki, Jeff</td>
<td>15</td>
</tr>
<tr>
<td>Coffman, Candy</td>
<td>42</td>
</tr>
<tr>
<td>Conklin, Tracy</td>
<td>32</td>
</tr>
<tr>
<td>Crawley, Luke</td>
<td>15</td>
</tr>
<tr>
<td>Creech, Becky</td>
<td>14</td>
</tr>
<tr>
<td>Cunningham, Suzanne</td>
<td>14, 18, 21, 28</td>
</tr>
<tr>
<td>Dege, Stephanie</td>
<td>23</td>
</tr>
<tr>
<td>DeSouza, Shireen</td>
<td>30</td>
</tr>
<tr>
<td>Devendorf, George</td>
<td>33</td>
</tr>
<tr>
<td>Disch, Susan</td>
<td>38</td>
</tr>
<tr>
<td>Dodson, Candice</td>
<td>33, 38</td>
</tr>
<tr>
<td>Doherty, David</td>
<td>31</td>
</tr>
<tr>
<td>Doty, David</td>
<td>32, 36, 39</td>
</tr>
<tr>
<td>Dubbs, Rick</td>
<td>38</td>
</tr>
<tr>
<td>Duman, Tim</td>
<td>41</td>
</tr>
<tr>
<td>Ellis, Aaron</td>
<td>38</td>
</tr>
<tr>
<td>Eltz, Jeremy</td>
<td>21, 39</td>
</tr>
<tr>
<td>Emmert, Charles</td>
<td>14</td>
</tr>
<tr>
<td>Ernst, Elizabeth</td>
<td>35, 38</td>
</tr>
<tr>
<td>Evans Fernandez, Adrienne</td>
<td>9</td>
</tr>
<tr>
<td>Everett, Georgia</td>
<td>20</td>
</tr>
<tr>
<td>Ewing, Megan</td>
<td>28</td>
</tr>
<tr>
<td>Fatum, Leslie</td>
<td>42</td>
</tr>
<tr>
<td>Flack, Margaret</td>
<td>23</td>
</tr>
<tr>
<td>Folta, Teri</td>
<td>9</td>
</tr>
<tr>
<td>Foster, Sherri</td>
<td>22</td>
</tr>
<tr>
<td>Freels, Jed</td>
<td>44</td>
</tr>
<tr>
<td>Fulk-Bringman, Sherry</td>
<td>16</td>
</tr>
<tr>
<td>Gaff, Deborah</td>
<td>23, 41</td>
</tr>
<tr>
<td>Garvin, Warren</td>
<td>16</td>
</tr>
<tr>
<td>Genisc, John</td>
<td>43</td>
</tr>
<tr>
<td>Giordano, Ashlee</td>
<td>18</td>
</tr>
<tr>
<td>Gnagy, Sue</td>
<td>43</td>
</tr>
<tr>
<td>Gobbett, Mary</td>
<td>14, 42</td>
</tr>
<tr>
<td>Goettel, Robin</td>
<td>16</td>
</tr>
<tr>
<td>Goings, LPG, Martha</td>
<td>26</td>
</tr>
<tr>
<td>Gray, Walt</td>
<td>43</td>
</tr>
<tr>
<td>Gwaltney, Charles W.</td>
<td>38</td>
</tr>
<tr>
<td>Gwinn, Elaine</td>
<td>8, 20, 24</td>
</tr>
<tr>
<td>Haggerty, Dorothy</td>
<td>39</td>
</tr>
<tr>
<td>Hahn, Joanna</td>
<td>19</td>
</tr>
<tr>
<td>Hallesy, Terri</td>
<td>16</td>
</tr>
<tr>
<td>Harr, Angie</td>
<td>32, 35</td>
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<td>36</td>
</tr>
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<td>38</td>
</tr>
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<td>22, 27</td>
</tr>
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<td>31</td>
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</tr>
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<td>16, 19, 23</td>
</tr>
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<td>15, 17</td>
</tr>
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<td>36</td>
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</tr>
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<td>43</td>
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<td>38</td>
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<tr>
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<td>Samelson, Leslie</td>
<td>37</td>
</tr>
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<td>15, 18</td>
</tr>
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<td>23</td>
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<td>Seiberger, David</td>
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<td>Seifert, Darlene</td>
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</tr>
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<td>32</td>
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<tr>
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<td>23, 26, 41, 43</td>
</tr>
<tr>
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<td>23</td>
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<tr>
<td>Vannatta, Deb</td>
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<td>18</td>
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<tr>
<td>World, Linda (Lin)</td>
<td>28, 33, 36</td>
</tr>
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<td>Wright, Mary Jo</td>
<td>39</td>
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<td>Zehringer, Vickey</td>
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</tbody>
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Indiana University-Purdue University Columbus will offer graduate level professional development credits to individuals who attend the 2014 HASTI Conference, “HASTI: The Next Generation,” February 5-7, 2014. 1 or 2 Graduate Credit(s) of Pass/Not Pass credit is available.

To receive 1 credit you must complete the admissions application (the application fee is being waived for this year). Send the application to IUPUC at the address on the application. You will receive a letter from the campus that you have been accepted. That letter will describe how to create your student account and enroll in this section of the course. You will be billed $394.79 through your student account. In the meantime you must attend HASTI and participating in at least 15 hours of workshops, sessions, field trips, and professional networking in the exhibit hall. You will need to write a short paragraph about each session. This would include what you learned on short courses, in the exhibit hall or in general sessions. Evidence of 15 hours is necessary. Finally you must then complete a 5 page reflective paper about how what you learned at HASTI will be applied into your classroom or other educational setting. This paper should be emailed to me at kabaird@iupuc.edu or submitted via OnCourse by March 17.

To receive 2 credits you must complete the admissions application (the application fee is being waived for this year). Send the application to IUPUC at the address on the application. You will receive a letter from the campus that you have been accepted. That letter will describe how to create your student account and enroll in this section of the course. You will be billed $732.68 through your student account. In the meantime, you must attend HASTI and participating in at least 15 hours of workshops, sessions, field trips, and professional networking in the exhibit hall. You will need to write a short paragraph about each session. This would include what you learned on short courses, in the exhibit hall or in general sessions. Evidence of 15 hours is necessary. You must then choose one idea to implement in your classroom. Finally you must then complete a 10 page reflective paper about what you applied in your room. Provide evidence of the materials you created, evidence of actual instruction and student success. Ideas for modification or future use may be included as well. This paper should be emailed to me at kabaird@iupuc.edu or submitted via OnCourse by March 21.

Educators attend conferences, workshops, participate in curriculum development committees, participate in school improvement plans, and take coursework to stay up-to-date on the latest educational reforms in addition to their classroom responsibilities. The Professional Growth Plan (PGP) is an opportunity for teachers, administrators and school service personnel to control their own professional development and use these experiences towards licensing renewal. One PGP point is given for every contact hour an educator is actively involved in a professional development activity. A total of 90 PGP points is required for submission. PGP activities must be gained since the issue date of the license being renewed.

Educators who hold renewable Bulletin 400, Rules 46-47 and Rules 2002 licenses issued by the Office of Educator Licensing and Development (OELD) may use the Professional Growth Plan to renew those licenses. It is one of three options for renewal for all license holders.

Educators Currently Working in a School Setting
If you are currently working in a school setting, your PGP must be verified by your Building Level Administrator, Superintendent, Director or Supervisor. Your Administrator will verify your 90 PGP points through LVIS. Once your PGP has been verified, you may then submit and pay for your renewal application(s) through your LVIS account. A total of 90 PGP points are required for submission. The professional growth experience points shall be calculated with (1) clock hour qualifying for (1) professional growth experience point.

Educators Currently NOT in a School Setting or renewing from Out of State
Educators that are currently NOT working in a school setting or renewing from Out of State will need to complete their PGP and submit it to the OELD for evaluation through LVIS. Once your PGP has been verified, you may then submit and pay for your renewal application(s) through your LVIS account. A total of 90 PGP points are required for submission. The professional growth experience points shall be calculated with (1) clock hour qualifying for (1) professional growth experience point based on

More Information
If you have additional questions regarding this license renewal option or process, please contact the IDOE at licensinghelp@doe.in.gov for general licensing questions. For questions about the Professional Growth Plan, contact langston@doe.in.gov or krusso@doe.in.gov. For more information, please visit the IDOE website, http://www.doe.in.gov/licensing/professional-growth-plan-pgp.

Name: __________________________________________________________________________________________
Address (include city, state and zip code): __________________________________________________________________________________________

1. Session Name: __________________________________________________________________________________
   Presenter’s Signature: ____________________________________________________________________________
   Date: __________________________________________________________________________________________

2. Session Name: __________________________________________________________________________________
   Presenter’s Signature: ____________________________________________________________________________
   Date: __________________________________________________________________________________________

3. Session Name: __________________________________________________________________________________
   Presenter’s Signature: ____________________________________________________________________________
   Date: __________________________________________________________________________________________

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   Presenter’s Signature: ____________________________________________________________________________
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    Date: _________________________________________________________________________________________

12. Session Name: _________________________________________________________________________________
    Presenter’s Signature: __________________________________________________________________________
    Date: _________________________________________________________________________________________

13. Session Name: _________________________________________________________________________________
    Presenter’s Signature: __________________________________________________________________________
    Date: _________________________________________________________________________________________

14. Session Name: _________________________________________________________________________________
    Presenter’s Signature: __________________________________________________________________________
    Date: _________________________________________________________________________________________
Animal Secrets exhibit at
The Children’s Museum of Indianapolis

Where does a chipmunk sleep? What does an eagle feed its young? How do mother bats find their babies in a cave? Learn the answers to these questions in Animal Secrets as you explore the hidden habitats and secret lives of forest animals.

<table>
<thead>
<tr>
<th>SHH! ANIMAL SECRETS DAY!</th>
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<tbody>
<tr>
<td>School Event</td>
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<tr>
<td>Grades K–2</td>
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<tr>
<td>Thursday, April 17</td>
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<tr>
<td>10 a.m.–12:30 p.m.</td>
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<table>
<thead>
<tr>
<th>EXPLORING ANIMAL SECRETS!</th>
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<tbody>
<tr>
<td>Workshop for Teachers of Grades K–2</td>
</tr>
<tr>
<td>Date: Wednesday, Feb. 12</td>
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<tr>
<td>Time: 9 a.m.–3:30 p.m.</td>
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<tr>
<td>Fee: $55 per person</td>
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For more information on these opportunities and unique school visits related to Animal Secrets, call 317-334-4000 or visit childrensmuseum.org/animalsecrets-teachers.

Additional support provided by the Collins Foundation and Meyer Memorial Trust.

---

Science has excited you since you were a kid.

100% online master’s degree at WMU. Now that’s exciting.

Western Michigan University has been around since 1903. Unlike some online institutions, we have a long history of producing excellent teachers. Here are the top three reasons you should choose our online M.A. in Science Education if you’re looking to further your education.

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3) WMU’s science faculty is nationally recognized. Learn from experts and leaders.

Recapture some of that excitement from your childhood. Visit our website today for more information.

wmich.edu/online/hasti
# Your 2014 Conference Planner

## Thursday, February 6

<table>
<thead>
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<th>Time</th>
<th>Activity</th>
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<tr>
<td>7:30 a.m.</td>
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<td>8:00 a.m.</td>
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<td>8:30 a.m.</td>
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<tr>
<td>9:30 a.m.</td>
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<tr>
<td>10:30 a.m.</td>
<td><strong>General Session</strong>&lt;br&gt;Tyler DeWitt, “Generations Merge: How to Incorporate Next Generation Tools, Technology and Methods into Classic, Transformative, Quality Teaching”&lt;br&gt;Sagamore 3</td>
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<tr>
<td>12:30 p.m.</td>
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<td>1:30 p.m.</td>
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<td>2:30 p.m.</td>
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<tr>
<td>3:30 p.m.</td>
<td>Association Meetings&lt;br&gt;IN-AAPT, IACT, IABT, IESTA, Middle School Conversation Pit</td>
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<tr>
<td>4:30 - 6:30 p.m.</td>
<td><strong>HASTI Social</strong>&lt;br&gt;IUPUI School of Science</td>
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## Friday, February 7

<table>
<thead>
<tr>
<th>Time</th>
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<td>8:00 a.m.</td>
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<td>8:30 a.m.</td>
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<tr>
<td>9:30 a.m.</td>
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<tr>
<td>10:30 a.m.</td>
<td><strong>General Session</strong>&lt;br&gt;Ted Willard, NSTA, “Standards for the Next Generation”&lt;br&gt;Sagamore 3</td>
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<tr>
<td>12:30 p.m.</td>
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<tr>
<td>1:30 p.m.</td>
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<td>2:30 p.m.</td>
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<tr>
<td>3:30 p.m.</td>
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Mark Your Calendars!

FEBRUARY

HASTI 2015
February 11-13

44th Annual Conference
"The Nature of Science"

Invited Speakers:
Dr. William McComas, University of Arkansas
Parks Family Professor of Science Education

Dr. Gregory Poland, Mayo Clinic Vaccine Research Group

Visit www.hasti.org for information on next year’s conference!
Watch your e-mail for details!