

Friday 8:30 Elevate your class with Case Studies

Length: 1 **Alexis Henry** **Thoroughbred 5**
Session 12 Phenomena
P E M Biology / Life Science Environmental Science Physics

Science is everywhere. We live it, we breathe it, we see it every day, but do we really understand it? Do your students understand it? What does STEM look like? Science should be interactive, engaging, and hands-on for all students. STEM should be: Science that uses Technology, while incorporating the Engineering design process, and using Math to help students solve problems. Come join us to explore how to Elevate Science.

Friday 8:30 One and Done.... Now Teaching is Fun!

Length: 1 **David Frongillo** **Thoroughbred 7**
Session 13 No Strand
E M H Environmental Science Physics Chemistry Earth / Space

20% of your students take up 80% of your time. Too often disruptive classroom behavior dominates that 80%. Just imagine, speaking to your troublesome student(s) just once, and it ends there. It can happen, and it does. Veteran or not, this is the session you need to attend.

Friday 8:30 Science Bits: 5E Made Easy!

Length: 1 **John Holt** **Thoroughbred 2**
Session 14 Phenomena
M H Environmental Science Physics Chemistry Earth / Space

Come see why Science Bits is the most awarded comprehensive curriculum in the world. Science Bits facilitates teaching that promotes deep understanding and instigates conceptual change necessary for learning science. We combine 5E lesson plans, constructivist pedagogy, and innovative multimedia tools to revolutionize science instruction.

Friday 8:30 STEM-ulating Simulations

Length: 1 **Elizabeth Riggs** **Scott-Woodford Room**
Session 15 Reasoning From Evidence
E M H Biology / Life Science Environmental Science Physics

Investigate how to use simulations to support the NGSS through a STEM centered approach using claim, evidence and reasoning models. Bring science concepts to life and increase depth of knowledge as students become scientists and become actively engaged in a science experiment. Bring a personal device and be an active participant.

Friday 8:30 Teaching Science Graphically: Science in Comics

Length: 1 **C.A. Preece, Josh Woodward** **Jessamin-Franklin Room**
Session 16 Phenomena
M H Environmental Science Physics Chemistry Earth / Space

Comics can be used to teach science? Why yes! From Superman to Feynman, there is science of all kinds to aid in the classroom and put a POW in to your lesson. Join in to see where to find the science and ways to present the comics to the students to make learning more fun and engaging.

Friday 8:30 Using Sound to Explore Scientific Phenomena

Length: 1 **Wilson Gonzalez, Laura Parker** **Thoroughbred 8**
Session 17 Reasoning From Evidence
M H Earth / Space Sciences

Join us and learn how blind students heard last August's solar eclipse. In addition, sound activities that make science accessible to ALL students will be shared. This session is a collaboration between Morehead State University, The Kentucky School for the Blind, the International Astronomical Union's Office of Astronomy for Development, and the Astronomy Demo Lab at Harvard University.

Friday 8:30 Beyond the CER: Getting to How or Why

Length: 1 **Diane Johnson, Patti Works** **Thoroughbred 4**
Session 18 Reasoning From Evidence
E M H Biology / Life Science Environmental Science Physics

Explanations include a how or why account of the phenomenon that draws on a scientific model or generalized principles that use disciplinary ideas. Come learn some specific strategies and tools for helping students get to the how or why in their explanation.

Friday 8:30 Modeling Instruction in the High School Science Classroom

Length: 1 **Elizabeth Howard** **Thoroughbred 3**
Session 19 Phenomena
H Chemistry Engineering Design

Modeling Instruction is a teaching style that leads to a student centered, hands on learning environment that immerses students into scientific practices. Conceptual understanding is devised through particle diagrams and classroom discussions. Learn how to help improve a student's level of understanding and to increase content retention through a demonstration aligned with NGSS.

Friday 8:30 Developing grade 3--5 Classroom Embedded Assessments (CEA)

Length: 2 **Dr. Tom Tretter, Dr. Justin McFadden, Dr. Sheron** **Regency 3**
Session 20 **Dr. Sheron Mark, Dr. Stephanie Phillip** Phenomena
E Biology / Life Science Environmental Science Physics

Presenters will share a structured, sequential process for developing strong, 3-dimensional (practices, crosscutting concepts, content) formative Classroom Embedded Assessments (CEA) for seamless use during classroom instruction. This will include a guided facilitation of the underlying thinking and decision-making that informs the process of CEA development. Resources helpful for this effort will be highlighted and shared.

Friday 8:30 Developing High School Classroom Embedded Assessments (CEA)

Length: 2 **Dr. Tom Tretter, Dr. Justin McFadden** **Thoroughbred 1**
Session 21 **Dr. Sheron Mark, Dr. Stephanie Phillip** Phenomena
H Biology / Life Science Environmental Science Physics

Presenters will share a structured, sequential process for developing strong, 3-dimensional (practices, crosscutting concepts, content) formative Classroom Embedded Assessments (CEA) for seamless use during classroom instruction. This will include a guided facilitation of the underlying thinking and decision making that informs the process of CEA development. Resources helpful for this effort will be highlighted and shared during the facilitation.

Friday 8:30 Exploring Energy Use in My School

Length: 1 **Tyler Cvitkovic** **Thoroughbred 6**
Session 22 Reasoning From Evidence
E M H Environmental Science Engineering Design

Participants will use measurement tools to survey the use of energy in their school building environment, record the data, compare to environmental standards of comfort and safety and make recommendations for changes to improve energy conservation and efficiency.

Friday 8:30 How to Argue in Science Class

Length: 1 **Kathy Armstrong, Roxane Dupuis** **Kentucky Room**
Session 23 Reasoning From Evidence
E Engineering Design

Help students develop scientific argumentation skills by making claims based on observable evidence. Put these skills into practice with researchbased investigations, as we prove (or disprove) fundamental science concepts. Leave with strategies to try with students next week.

Friday 8:30 Jump into middle school Through Course Tasks (TCTs)

Length: 1 **Olga Payne, David Grossman** **Regency 2B**
Session 24 Reasoning From Evidence
M Physics Chemistry Engineering Design

Join us for an informal session to learn about the TCT process from design to implementation. Begin to understand the thinking behind the TCT design, then collaboratively work on a TCT in preparation for implementation to take back to your school. Ideas for scaffolding, etc.

Friday 9:45 Actual Living Scientist (Teachers!)

Length: 1 **Dr. Amanda Glaze** **Regency 2B**
Session 25 Phenomena
P E M H Biology / Life Science Environmental Science Physics

As science education grows to become more dynamic in nature and practice, so too must our conceptions of science teachers. A recent hashtag explosion on Twitter highlighted #ActualLivingScientists to point out that there are scientists everywhere and provide an introduction to the public. We will extend that to #ActualLivingScientistTeacher to highlight the role of teachers as scholars and scientists in their own right, leading their students in bold new ways!

Friday 9:45 Blending Instructional Technology with Science

Length: 1 **Dr. Stephanie Hendrith** **Jessamin-Franklin Room**
Session 26 Phenomena
P E Earth / Space Sciences

This session will help teachers blend instructional technology to help teach diverse learners. The focus is on apps, programs, centers, and how to structure inquiry activities. Topics include ideas for visual learners, kinesthetic learners, struggling readers, differentiation, and how technology can be used to assist in reaching everyone.

Friday 9:45 Energy House

Length: 1 **Tyler Cvitkovic, Whit Pennington** **Thoroughbred 6**
Session 27 Reasoning From Evidence
E M H Engineering Design

Participants learn about efficiency, conservation, and diminishing returns by using various materials to insulate their house and then test its efficiency.

Friday 9:45 Meeting K-2 Life Science Standards Through an Outdoor Field Trip

Length: 1 **Meg Grivil, Jackie Gallimore** **Scott-Woodford Room**
Session 28 No Strand
P Biology / Life Science Environmental Science Earth /

See how NGSS Life and Earth Science Standards correlate with outdoor learning during a field trip to the Kentucky Children's Garden at the Arboretum. Come experience a sampling of education stations offered during such a field trip. We also want to hear from you!

Friday 9:45 NGSS on a Budget

Length: 1 **Ruby Parker, Justin Magaw** **Thoroughbred 8**
Session 29 Phenomena
E M Engineering Design

Join Kentucky Science Center as we practice facilitating a phenomena based lesson on a budget. Learn how the Science Center applies these practices to all of their programs!

Friday 9:45 State Science Assessment System: Classroom Embedded Assessments

Length: 1 **Rae McEntyre (KDE)** **Thoroughbred 4**
Session 30 Gathering Data
P E M H Biology / Life Science Physics Chemistry Earth / Space

Learn about the role of the classroom embedded assessment within the science assessment system. We will share

resources that will assist you in their development.

Friday 9:45 STEM Teacher/Science Teacher: What's the Difference?

Length: 1 **Pam O'Brien** **Thoroughbred 7**
Session 31 No Strand
E M H Environmental Science Physics Chemistry Earth / Space

Distinguishing between science and STEM is important as teachers integrate STEM in their practice. Join us to discuss the unique nature of STEM, the research based instructional strategies necessary to support its outcomes, and a STEM certification pathway that encourages self reflection and growth in STEM teaching.

Friday 9:45 Trout in the Classroom: Using Fish to Enhance Education

Length: 1 **Parker Owen, Melanie Trowel, Natalie Butcher** **Thoroughbred 5**
Session 32 Phenomena
E M H Environmental Science Engineering Design

Trout in the Classroom allows students at any grade to experience a unique opportunity to see past the four walls of their classroom. By teaming up with Trout Unlimited, you can literally bring your science standards to life. Give your students the ultimate project-based learning as they help hatch trout eggs and raise the baby trout from newborns to fingerlings.

Friday 9:45 Using Notebooks to Make Sense of Science

Length: 1 **Kathy Armstrong, Roxane Dupuis** **Kentucky Room**
Session 33 Reasoning From Evidence
P E Engineering Design

Discover ways to have students use notebooks to make meaning of what they do in science. Experience a science lesson that incorporates Next Gen science standards that are research based on how students learn. Take away resources and strategies that will enrich your teaching.

Friday 9:45 Virtual Labs You Can Conduct and Grade in Under an Hour

Length: 1 **Dr. Janice Gobert, Cam Betts** **Thoroughbred 2**
Session 34 Reasoning From Evidence
E M H Physics Chemistry Earth / Space Sciences

Learn about virtual labs (grades 5-10) that grade themselves and allow students to practice authentically forming questions, collecting data, analyzing data, and communicating findings with a claim/evidence/reasoning framework. Participants receive a detailed rubric to use with hands on labs, and a free trial to use "InqITS".

Friday 9:45 What's All This I Hear About Climate Change?

Length: 1 **Debbie Niehaus** **Thoroughbred 3**
Session 35 Reasoning From Evidence
M H Environmental Science Earth / Space Sciences

This is an easy to understand, entertaining overview of the causes and effects of climate change, presented in a nonjudgemental, nonpolitical way. The powerpoint can be downloaded for use in your classroom, and includes modifications for various educational levels.

Friday 11:00 3D Sense-making to Build Authentic Student Understanding

Length: 1 **Mindy Curless (KDE)** **Thoroughbred 4**
Session 36 Phenomena
P E M H Biology / Life Science Environmental Science Physics

This session will share simple strategies for shifting your classroom instruction/assessment towards the 3D sensemaking experiences required for students to attain the Kentucky Academic Standards for Science. Learn how to create and implement 3D tasks that obtain appropriate evidence of the 3 dimensions in order to make the best next decisions for moving students forward in their learning.

Friday 11:00

Argue This!

Length: 1

Desiree Sujoy, Aimee Tait

Thoroughbred 8

Session 37

Reasoning From Evidence

E M H

Environmental Science Physics Chemistry Earth / Space

The work of Scientists comprises planning and carrying out investigations, collaborating with other scientists, and communicating results through peer reviewed articles. Scientific argumentation and even argument driven inquiry mimic the work of scientists and provide an additional level of rigor and relevance in addressing Science & Engineering Practices and content with our students.

Friday 11:00

Argument-Driven Inquiry in the Elementary Classroom

Length: 1

Victor Sampson

Regency 2B

Session 38

Reasoning From Evidence

E

Engineering Design

This session is an introduction to a new approach to lab instruction called Argument-Driven Inquiry (ADI). ADI is an innovative instructional model that is based on current research about how people learn science and is designed to foster the development of science proficiency. This instructional approach gives students an opportunity to learn how to read, write, and speak in the context of science.

Friday 11:00

Connecting Science to Sports

Length: 1

Alana Teller

Scott-Woodford Room

Session 39

Reasoning From Evidence

E M

Physics Engineering Design

By using online modules, Future Goals -Hockey Scholar brings science, math and engineering concepts to life by leveraging the fast-paced game of Hockey. Through immersive game simulations Hockey Scholar explores real life applications of STEM concepts such as area/volume of an ice rink, conservation of energy of a falling puck, and speed/velocity using skates.

Friday 11:00

Cool Coal Story - Coal in the Round

Length: 1

Whit Pennington

Thoroughbred 6

Session 40

No Strand

E M H

Environmental Science Physics Earth / Space Sciences

Model the flow of energy to produce electricity, identifying energy forms and transformations in the process.
Extensions: Replace coal with other renewable and non-renewable energy sources in the demonstration.

Friday 11:00

Demystifying STEM - Earthquake Proof Towers & Engineering Design

Length: 1

Pam O'Brien

Thoroughbred 7

Session 41

Phenomena

E M

Environmental Science Physics Earth / Space Sciences

While investigating the phenomenon of Waves we will use three models to design and build earthquake proof towers that can withstand the devastating horizontal S waves. Through this hands-on investigation, using models, simulations, and tower engineering we will demystify the 3D NGSS Standards for Waves, the practices of engineering design, and how best to teach them through STEM.

Friday 11:00

Increase Student Engagement Using Community Partners

Length: 1

Lana Swartz, Thomas Wolford

Jessamin-Franklin Room

Session 42

Scientific Communication

M H

Biology / Life Science Engineering Design

Engage your students in project based learning (PBL) with community partners. Students gain real world experience while developing their content knowledge and science communication abilities. During this session participants will receive strategies for collaborating with different partners in the community.

Friday 11:00 **Making Learning Local: Place--based Science and Social Studies**
 Length: 1 **Dr. Kay Gandy, Dr. Jeanine Huss** **Thoroughbred 3**
Session 43 No Strand
 E M H Environmental Science

This session will give an overview about placebased teaching and provide examples of how to apply place based teaching to K12 science and social studies classrooms. Examples in science include using place to study local plants, animals, and patterns in nature. It also includes conducting an energy audit at the school or home environment. Students can study local parks, science museums, zoos, aquariums, hospitals, and weather stations to witness science first hand.

Friday 11:00 **Science Assessment System: State Summative Assessment**
 Length: 1 **Rae McEntyre (KDE)** **Thoroughbred 1**
Session 44 No Strand
 E M H Biology / Life Science Physics Chemistry Earth / Space

This session will discuss the state summative test for grades 4 and 7 and the field test for Biology EOC. You will learn about the test development process, tools used and the instructional implications.

Friday 11:00 **Simulating Science**
 Length: 1 **Lucy May** **Thoroughbred 5**
Session 45 Reasoning From Evidence
 E M H Biology / Life Science Environmental Science Physics

Science (and Math) topics come to life when using these research proven online simulations to introduce, develop and expand conceptual understanding. Simulate science topics that aren't easily replicated within the four walls of the classroom; and watch as student engagement and depth of understanding soar. Participants will experience these live simulations and learn how to supplement and enhance instruction when implemented into science curriculum.

Friday 11:00 **The TCT Process & Professional Learning Resources**
 Length: 1 **Christine Duke (KDE)** **Thoroughbred 2**
Session 46 No Strand
 P E M H Biology / Life Science Environmental Science Physics

This session will focus on the use of information from the TCT field test and resulting resources to support professional learning as Kentucky teachers continue to grow their understanding of the TCT component of the Science Assessment System. Emphasis will be on TCT Process as a tool for teacher teams to calibrate and refine strategies and expectations for student performance.

Friday 11:00 **Using Environmental Data for Public Health Action**
 Length: 1 **Janie Cambron, Benjamin Scott** **Kentucky Room**
Session 47 Gathering Data
 M H Environmental Science Earth / Space Sciences

This session will focus on EnviroHealthLink, Kentucky's Environmental Public Health Tracking Network and how it can be a great resource for students and teachers alike to learn how to integrate health and environment data all in one location. To help teach students how the environment affects them and how they affect the environment in a easy, interactive format.

Friday 11:00 **Whipping Your Way Through NGSS with Waller-Coasters**
 Length: 1 **Amber Carter** **Regency 3**
Session 48 Phenomena
 P E Physics Engineering Design

Need a way to excite your students in the NGSS world? This engaging, active, hands-on experience with Waller-Coasters will do the trick! Join us for a featured fourth grade 5E lesson on energy transformation and learn how you can adapt this lesson to any grade level, K-7.

Friday 12:15 Got Data...Now What Do You Do With It?

Length: 1 **Patti Works, Diane Johnson** **Regency 2B**
Session 49 Gathering Data
P E Biology / Life Science Environmental Science Physics

How do we teach students to collect, represent and make sense out of data at the elementary level? How can we analyze and interpret data to make sense of phenomena? Join us for some strategies to promote student sense making with Practice 4.

Friday 12:45 Featured Speaker: Dr. Stephen Pruitt

Length: 1 **Dr. Stephen Pruitt** **Thoroughbred 1**
Session 50 No Strand
P E M H Biology / Life Science Environmental Science Physics

Friday 2:15 Deep Dive Learning Experiences to Enhance Scientific Practices

Length: 1 **Andrea New** **Thoroughbred 2**
Session 51 Reasoning From Evidence
H Biology / Life Science Chemistry Earth / Space Sciences

Students start with a phenomena that sparks a compelling question. The compelling question causes a chain reaction of supporting questions that require sources or investigations to foster a better understanding and develop new skills and scientific practices. Finally, both formative and summative tasks are completed in a deep dive learning experience. The summative piece incorporates engineering standards within the NGSS that answers the compelling question.

Friday 2:15 Meeting K-2 Life Science Standards Through Outdoor Field Trips

Length: 1 **Meg Gravil, Jackie Gallimore** **Regency 3**
Session 52 No Strand
P Biology / Life Science Environmental Science Earth /

See how NGSS Life and Earth Science Standards correlate with outdoor learning during a field trip to the Kentucky Children's Garden at the Arboretum. Come experience a sampling of education stations offered during such a field trip. We also want to hear from you!

Friday 2:15 Argument-Driven Inquiry in Middle and High School

Length: 1 **Dr. Victor Sampson, Karin Johnson** **Jessamin-Franklin Room**
Session 53 Reasoning From Evidence
M H Physics Chemistry Earth / Space Sciences

This session is an introduction to a new approach to lab instruction called Argument-Driven Inquiry (ADI). ADI is an innovative instructional model that is based on current research about how people learn science and is designed to foster the development of science proficiency. This instructional approach gives students an opportunity to learn how to read, write, and speak in the context of science.

Friday 2:15 Blending Instructional Technology with Science

Length: 1 **Dr. Stephanie Hendrith** **Thoroughbred 4**
Session 54 Phenomena
P E Earth / Space Sciences

This session will help teachers blend instructional technology to help teach diverse learners. The focus is on apps, programs, centers, and how to structure inquiry activities. Topics include ideas for visual learners, kinesthetic learners, struggling readers, differentiation, and how technology can be used to assist in reaching everyone.

Friday 2:15 CER: How to Get Students from Novice to Proficient
 Length: 1 **Kori Rogalinski** **Thoroughbred 8**
Session 55 Scientific Communication
 M Biology / Life Science Environmental Science Physics

Learn different ways to scaffold the CER process for students.

Friday 2:15 Engineering Awesome Education
 Length: 1 **Parker Owen** **Thoroughbred 7**
Session 56 Reasoning From Evidence
 E M H Engineering Design

Think of it as the Mythbusters meeting up with MacGyver. In this session, participants will use ordinary everyday objects to create or complete specific engineering challenges, utilizing each step of the Engineering Design Process. Introducing these activities into the classroom can help open students up to the process of learning science concepts and do require outside the box thinking.

Friday 2:15 Interactive Word Walls for the M.S/H.S. Classroom
 Length: 1 **Sherry Blosser** **Thoroughbred 5**
Session 57 Scientific Communication
 M H Biology / Life Science Environmental Science Physics

At first interactive word walls seemed like a daunting task in my middle school classroom. How could I make them interactive while teaching 150 students, in 6 classes, in one room, each day? This session will walk attendees through a process of creating an Interactive word wall from initial set up to completion. Student work samples, tips, resources and first hand knowledge will be shared.

Friday 2:15 Modeling Instruction in the High School Science Classroom
 Length: 1 **Elizabeth Howard** **Thoroughbred 3**
Session 58 Phenomena
 H Chemistry Engineering Design

Modeling Instruction is a teaching style that leads to a student centered, hands on learning environment that immerses students into scientific practices. Conceptual understanding is devised through particle diagrams and classroom discussions. Learn how to help improve a student's level of understanding and to help increase content retention through a demonstration aligning with NGSS.

Friday 2:15 Science Assessment System Q & A
 Length: 1 **KDE Science Consultants** **Thoroughbred 1**
Session 59 Phenomena
 P E M H Biology / Life Science Environmental Science Physics

Representatives from the Kentucky Department of Education will be on hand to answer questions about the new science assessment system.

Friday 2:15 Sensational STEM Collaboration
 Length: 1 **Andi Bosar, Crystal Ezell** **Kentucky Room**
Session 60 Phenomena
 P E Environmental Science Earth / Space Sciences

See how STEM collaboration can work across grade levels in an elementary setting. Through project based learning, this school is using NGSS to drive instructional practices K-6th grade. Engineering projects, experiences, and labs all stem from natural phenomena to ignite learning!

Friday 2:15 Teaching with Talk Partners/Learning Groups

Length: 1 **Chris Lacy, Kim Sparkman** **Thoroughbred 6**
Session 61 Scientific Communication
E M H Biology / Life Science Environmental Science Physics

Learn how to promote scientific communication between classroom students via talk partners and learning groups in a science classroom setting. Together we will discuss, practice, and demonstrate how to use a blend of Growth Mindset, Kagan Strategies, and Formative Assessment to promote discussion, questioning skills, and lateral classroom communication.

Friday 2:15 TOOLS To Maximize Teaching = TOOLS For Time To Teach

Length: 1 **Sherri Hunsaker** **Scott-Woodford Room**
Session 62 No Strand
P E M H Environmental Science Physics Chemistry Earth / Space

Teachers have an ever growing list of responsibilities they are required to attend to on a daily basis. Visit our session to discover how to utilize commonsense, research-based classroom management tips and techniques that can be implemented into your classroom tomorrow with positive and observable results. Learn how to diffuse discipline problems before they become an instructional disruption in your classroom.

Friday 3:30 Hack Learning with Gamification

Length: 1 **Stella Pollard** **Thoroughbred 5**
Session 63 Phenomena
M H Environmental Science Physics Chemistry Earth / Space

Attendees will get a first hand glance inside a classroom that includes gamification. Teachers will receive resources, ClassCraft swag, and ideas on how gamification can lead their students to their highest level of engagement. See how teachers can incorporate "Science Quests", "Boss Battles", random events and much more in a science setting.

Friday 3:30 Intro to IQWST: Can I Believe My Eyes?

Length: 1 **Diane Wright** **Thoroughbred 6**
Session 64 Phenomena
M Physics

Intro to IQWST: Can I Believe My Eyes? A session for educators who are new to IQWST that focuses on constructing models to explain light phenomena.

Friday 3:30 MakerMinded: Digital Portal to STEM & Advanced Manufacturing

Length: 1 **Brittany Garrett** **Thoroughbred 3**
Session 65 Scientific Communication
M H Biology / Life Science Environmental Science Physics

MakerMinded is preparing students to fill the demand in the advanced manufacturing industry. Explore how schools in Kentucky have successfully utilized the MakerMinded competition to promote student engagement with local and national STEM activities related to advanced manufacturing. Learn about available activities and prepare a plan for getting students and teachers your school involved.

Friday 3:30 *Featured* Tapping Culture & Controversy to Enhance Science Literacy

Length: 1 **Dr. Amanda Glaze** **Thoroughbred 1**
Session 66 No Strand
P E M H Biology / Life Science

Science literacy has been stated as the goal for science education in the 21st century, however, there are persistent barriers to scientific thinking and understanding that are growing more prevalent with each passing year. In this session we will explore how understandings of cultural currency and the intersections of science and society blend to create spaces for science learning that enable deeper learning and discussion, even with controversial topics.

Friday 3:30 Strategies for Navigating the 4 Levels of Inquiry

Length: 1 **Desiree Sujoy, Aimee Tait** **Thoroughbred 4**
Session 67 Gathering Data
P E M H Environmental Science Physics Chemistry Earth / Space

We will provide examples of the 4 different levels of inquiry: confirmation, structured, guided and open. Teachers will be immersed in learning through participation in two hands on labs and one virtual lab, and we will discuss specific strategies for how to meet the needs of special populations. We will conclude with a discussion of the benefits of each level.

Friday 3:30 Using STEAM as the Engine for Innovation

Length: 1 **Kyle Holloway, Jessica Klosinski** **Thoroughbred 7**
Session 68 Phenomena
P E Physics Engineering Design

Learn how the last two years has seen our school transform learning through the STEAM Lab. See and learn how tech resources can be scaffolded to meet the needs of multiple grade levels while building capacity in students and teachers. From tackling logistics of scheduling and resources to pedagogy that brings out the best from ALL students, prepare your students for the next step in learning.

Friday 3:30 Virtual Labs You Can Conduct and Grade in Under an Hour

Length: 1 **Dr. Janice Gobert, Cam Betts** **Thoroughbred 2**
Session 69 Reasoning From Evidence
E M H Physics Chemistry Earth / Space Sciences

Learn about virtual labs (grades 5-10) that grade themselves and allow students to practice authentically forming questions, collecting data, analyzing data, and communicating findings with a claim/evidence/reasoning framework. Participants receive a detailed rubric to use with hands on labs, and a free trial to use InqITS.

Saturday 8:30 National Board Certification Q&A

Length: 1 **Brian McDowell** **Thoroughbred 8**
Session 70 No Strand
P E M H Biology / Life Science Environmental Science Physics

Now more than ever, teachers must prove themselves in a constantly changing education landscape. Board certification allows teachers to hone their practice, showcase their talent in the classroom, and demonstrate their dedication to their students and their profession.

Saturday 8:30 Argument Driven Inquiry in the Elementary Classroom

Length: 1 **Dr. Victor Sampson** **Regency 2B**
Session 71 Reasoning From Evidence
E Engineering Design

This session is an introduction to a new approach to lab instruction called Argument-Driven Inquiry (ADI). ADI is an innovative instructional model that is based on current research about how people learn science and is designed to foster the development of science proficiency. This instructional approach gives students an opportunity to learn how to read, write, and speak in the context of science. In this session, participants will learn about the stages of the ADI instructional model, how it was designed to address the shortcomings of current laboratory experiences, and how it is aligned with the best practices for teaching science as well as learn about ways to support students during each stage of the approach.

Saturday 8:30 CER: How do you get students from novice to proficient

Length: 1 **Kori Rogalinski** **Thoroughbred 6**
Session 72 Scientific Communication
M Biology / Life Science Environmental Science Physics

Learn different ways to scaffold the CER process for students.