



Western STANYS Mini-Conference
in Partnership with
NYS Master Teacher Program
March 27, 2019, 3:30-7:00pm
at Buffalo State College



Indicates session led by STANYS Subject Area Representative



Indicates session led by a NYS Master Teacher

We are excited to announce the following presentations are confirmed for our mini-conference:



Bouncing Balls & Lost Energy
Presented by Jeff Salerno (Physics)

We'll be using Claim-Evidence-Reasoning to investigate energy loss in a bouncing ball. We'll model its motion with white boards at various points along the motion using Energy Bar Charts and sample Motion Graphs. We'll develop some reasoning for the motion graphs for each of the possible explanations for the energy loss before beginning to experiment! We'll use Video Physics and Ipads to view the bouncing motion and take a look at the actual motion graphs. One prediction will clearly be supported by our Video Physics motion graphs.



Demystifying Biomolecules Through Paper Model:
Presented by Katie Sugg (Living Environment)

Using paper models students figure out for themselves about the names and building blocks of carbohydrate, protein, and lipid biomolecules. With this hands on learning students remember much more and can apply their knowledge throughout your course. A digestive system extension will also be provided.

Thimble.io Hands-on Hardware: Simple Arduino Projects

Presented by: Oscar Pedroso from Thimble.io and Ellen Harp (Grades 5-12)

Participants will have the opportunity to use a handheld electronic breadboard and a Learning Platform called Thimble. After a brief introduction to coding concepts, we will build small projects with the Arduino hardware and downloaded software. No previous skill is necessary but a sense of adventure is helpful.



Assessment in 3-D for the New NYSSLS:

Presented by Cheryl Aldrich (Grades 3-8)

The assessment dates are official! New assessments are coming!

But what in the world will they look like? Explore what groups like Stanford NGSS Assessment Project and Paul Anderson have developed, and identify the skills our students will need to complete such assessments. Also shared will be the instructor's attempts to develop these 3-dimensional assessments, how they are scored, and how they actually worked with students! Target: Grades 3-8.

WNY Rocks!: Learning Earth Science with Penn Dixie (Grades K-12)

Presented by Holly Schreiber, PhD

New York State is known for its fossils and Penn Dixie showcases these unique resources. Students have an exciting opportunity to learn about fossils and rocks in hands-on lessons facilitated by trained Penn Dixie educators both at the fossil park and in their own classrooms. This presentation will provide an overview of Penn Dixie Fossil Park & Nature Reserve, including background, field trips, and classroom programs.



Dissecting Online Lessons: Do They Really Meet the NYSSLS Criteria?

Mary Kay Flett, Susan Cyruik (Grades K-12)

Do you troll the internet to find that next great lesson? Can you tell if it aligns with NYSSLS? We can help you determine whether the lesson plan you have found is worth your time! In this BYOD workshop you will find a lesson and use a rubric that determines if it truly 3D and includes developmentally appropriate instructional strategies. You will walk out with at least one verified lesson plan, knowing it lines up with NYSSLS. Bringing your own device will allow you to go online, but is not necessary for workshop attendance.



What Would Happen If...? Implementing and Integrating the Question Formulation Technique into the Chemistry Classroom **Presented by: Sarah English and Shelly Hinchliffe**

Gain insight into implementing the Question Formulation Technique model in a chemistry classroom and the impact on student engagement. The QFT model can be used in any area of science. Come check out how to better engage your students in asking questions in the classroom.



WNY Youth Climate Action Summit: Developing Resilient Regional Leaders (Grades 5-12) **Presented by: Adam Gollwitzer**

Endeavoring to provide a space for youth to gather, learn, and exchange ideas for action around the issues related to climate change, our group is set to host its third annual summit. With over 140 students from over 50 school districts across WNY, the Youth Action Climate Summit is as diverse and dynamic as it is distinct. Join us to learn how this gathering can benefit your students along with your classroom content.

Hands-on STEM as presented by The National Inventors Hall of Fame (Grades K-6)

Presented by: Chrystal Manos

This workshop experience is for Pre-K- 6th grade educators on understanding the power of integrating STEM into their current curricular requirements. Teachers will understand the creativity and innovation pathway put forth by the Inductees of the National Inventors Hall of Fame and will be provided transference tools for their use in their own classrooms. Attendees will participate in hands-on Stem activities that have been inspired by the most innovative minds in the world- NIHF inductees.

Engaging STEM Programs for Your Students (Grades K-12)

Presented by Intefada Wardia from Cradle Beach

In this hands-on workshop, participants will learn to build a balloon-powered car and share methods for connecting Newton's Laws of Motion with students. Please note that this workshop uses Latex balloons. Cradle Beach's Living Classrooms provides STEM-focused programming year-round to excite and engage individuals ages 5-18 through active learning.

Become a Citizen Scientist for the Birds (Ties to NYSSLS) (Grades K-12)

Presented by Carol Rogers, NYS Parks

Birds are everywhere in our communities and many times have to adapt to human impact on their habitats. This presentation will focus on how we can become Citizen Scientists and introduce you to programs out there that students can participate in that are both educational and beneficial to scientific researchers as well as bird species.

Connecting the Real World of Science: From Energy to Flight (Grades 5-12)
Presented by Dr. Michelle Kavanaugh, WNY STEM Hub

WNY STEM Hub and partners will offer two project-based STEM experiences in the Fall of 2019. A new program, Energize Your Future, will encourage high school student teams to design an alternative energy proposal and model that will be capped by a shark-tank style event. The Take Flight Project in its third year will enable Gr 5-12 students teams to design flight experiments to be conducted at the International Space Station and ground-truth tested using micro-gravity labs. Hear the details on both projects.

Science and Literacy: Better Together (Grades K-6)
Presented by Liz Kaplan, Learning A-Z

With Science A-Z, K-6 teachers can use NYS Science Learning Standards-aligned nonfiction texts to combine literacy instruction with inquiry-based science instruction. Attendees receive a 3 month trial of Science A-Z and will explore the Project Based Learning Packs, Storylines, Science in the News, Debates and other resources that can be printed and also digitally assigned to students. Science literacy and reading comprehension expanded with each use.

Bravery, Resilience & Leadership through Coding. Join the Girls Who Code Movement! (Grades 3-12)

Presented by Betsy Rivera, Girls Who Code

Girls Who Code is a national nonprofit organization driven to close the gender gap in technology. Through this presentation, participants will explore an overview of Girls Who Code Clubs, get a glimpse into 3rd to 5th Grade Clubs as well as 6th to 12th Grade Clubs, and discover its impact on girls across the nation. Participants will learn how to launch a club, what is needed, learn about the support given to partners, and how to join the Girls Who Code movement. In addition, participants will receive insight into becoming a Community Partner and learn about benefits for partners with multiple Clubs. Lastly, there will be a Question & Answer session.



The Wonder of Electric and Magnetic Interactions! (Grades 3-8)
Presented by: Dr. David Henry, SUNY Buffalo State
Alayla Henry, King Center Charter School

The new NYSSLS Standards provide a great opportunity to dive deeper into Static Electricity and Magnetism, see for example performance expectations 3-PS2-3 and MS-PS2-5. In this presentation teachers will learn new ideas about Electric and Magnetic interactions and take away ready-to-use activities that use cheap materials.

Engaging Students in Municipal Stormwater Pollution Prevention Programs (Grades K-12)

Presented by Mary MacSwan, Erie County DEP/Western NY Stormwater Coalition

Many municipalities have NY state mandated stormwater pollution prevention programs that require public education. Erie County DEP, in partnership with the WNY Stormwater Coalition, has developed a student-based component to their programs. This presentation includes opportunities available to local educators/groups that engage students in active learning experiences.



There's stuff out there for NYSSLS! Learn how to recognize the best.
(Grades K-12)

Presented by Kathaleen Burke and Joseph Zawicki

Participants will conduct a NGSS designed activity that exemplifies the characteristics of 3-dimensional learning that supports NYSSLS Performance Expectations. They will use this activity as a model as they examine and discuss an extensive resource list compiled by the the presenters as a useful tool for classroom and district decisions. Concerns regarding differentiation, assessment and technological literacy will also be addressed.

STEM-ulating Activities on Human Ecology (Grades 5-12)

Presented by Michael Jabot, SUNY Fredonia

Teaching human ecology (an interdisciplinary and transdisciplinary study of humans and their environment) makes for relevant lessons in the life and earth sciences that also brings in math and social science content. In this hands-on session, the presenter will lead participants in small-group problem solving, data analysis, and online tool demonstration covering a range of human ecology topics including human population and natural resource use trends, and their resulting impacts on ecosystems, biodiversity, climate and the availability of fresh water. Receive lesson plans and background materials in an electronic format matched to state standards in multiple disciplines.



New standards...same old test...now what?!

Bridging the Gap Between Regents and NYSSLS

Presented by: Annette Miller & Katie Agen, Science Teachers

International Preparatory School – Buffalo Public Schools (High School)

In this session we will offer resources and strategies, focusing on the 5E model, for implementing NYSSLS while still preparing for the Regents exams. We will have sample lessons and a collection of online resources to help you make the transition.

Modulated Laser Transmitter/Receiver Make and Take (Grades 5-12)

Aaron Krehbiel and Dan MacIsaac, Buffalo State College

Participants will construct a device to transmit an audio signal over a distance with a laser, It is a useful tool for demonstrating a simplified version of the principles of fiber optics data transmission. To use the tool in the classroom teachers will need a sound source (phone works fine) and amplified computer speakers

Engineering & Applied Mathematical & Visualization

Presented by: James Schuetz from Parsons Engineering

Principal Hydrogeologist / Technical Director with Parsons specializing in groundwater modeling, bioremediation, and complicated geological environments.

Learn how visualization modeling and applied mathematics are used in the field of science and engineering.

The word “model” has a wide range of use and perceived definition, ranging from a general depiction of the subsurface to highly involved numerical finite difference algorithms. The purpose of this presentation is to communicate a deeper understanding of environmental models, as applied in science and engineering projects. This presentation defines and explains a variety of non-mathematical and mathematical models to help practitioners, technical teams and project managers make decisions on how to best analyze and represent site data. Approach to applying models to site examples is demonstrated. A detailed discussion regarding the differences between analytical and numerical models is provided, in context with the importance of governing equations and of boundary conditions.

Fundamentals to the process are clearly explained, including model workflow, calibration and sensitivity analysis.