

## Schedule of Programs – Wednesday October 24, 2018

Key: **I/G** (Integrated/General Science), **B/LS** (Biology/Life Science), **C** (Chemistry), **E/SS** (Earth/Space Science), **ENV** (Environmental Science), **P/PS** (Physics/Physical Science), **SL/SUP** Science Leaders/Supervision, **T** (Technology)

### 8:00-9:00

- (086) 6-8 ENV, E/SS Hands-On Bainbridge  
**EARTH Program Through Monterey Bay Aquarium Research Institute - Real-World Data and 3-D Learning**  
EARTH 2018 participants will discuss their experience and share hands-on activities created collaboratively with scientists using near-real-time data from ocean observatories to engage students in NGSS 3-D learning.  
**Presenter(s):** Kate Russo; Stacey Sebert Hillsborough Middle School
- (087) K-5 STEM/STEAM, I/G Hands-On Forrestral  
**Engaging English Language Learners in the General Education STEAM Classroom**  
Come take part in a STEAM lesson that incorporates literature and hands-on activities for English language learners mainstreamed into general education. Engaging methods and ELL techniques will be explored!  
**Presenter(s):** Lauren Seibert; Meredith Alvarez Milltown School
- (088) 9-12 NGSS, I/G Discussion Henry  
**Obtaining, Evaluating, and Communicating Information: Developing Authentic Lab Posters and Reports**  
Participants will discuss authentic strategies for using lab notebooks, posters, and reports to assess and prepare students for college and professional scientific communications.  
**Presenter(s):** Caitlin M Ament; Theodore J. Graham Passaic High School
- (089) Not Grade Specific NGSS, Data Literacy Discussion Nassau 28  
**Bring on the Data! Beginning Strategies to Integrate Data Literacy into Science Classrooms**  
Regardless of what topic area or subject, integrate data to make it pop! We will explore ways to leverage how people learn from data and beginning strategies to integrate data successfully alongside your content.  
**Presenter(s):** Kristin Hunter-Thomson Rutgers University
- (090) 6-8 STEM/STEAM, P/PS Lecture Nassau 29  
**Tricked into Thinking!**  
Everyday events make us wonder. Some of these events happen every day, some only once in a while. Some events can easily be investigated, some not. However, each of these events provides us the opportunity to THINK.  
**Presenter(s):** Thom O'Brien Explorelearning
- (091) 6-8 STEM/STEAM Lecture Nassau 30  
**How We Survived a Zombie Apocalypse STEAM STYLE!**  
Students are expected to use STEAM concepts to survive daily challenges related to a hypothetical zombie apocalypse. All aspects of STEAM are addressed in one or more of the daily challenges.  
**Presenter(s):** Kerri Mora; Nicole Korinko, Chris Kleinwaks Franklin Avenue Middle School

### 8:00-9:30

- (092) 9-12 B/LS, NGSS Hands-On Campus  
**Solve a Giant Panda Problem**  
Be a conservation biologist working to save the Giant Panda by determining which female is ovulating using an ELISA assay.  
**Presenter(s):** Sherri Andrews Bio-Rad

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### 8:00-9:30 (continued)

- (093) 6-8 NGSS, Engineering Hands-On Dod  
**Bridging to 21st Century Skills Through Engineering**  
Experience a NASA-inspired design challenge that will engage you (and your students) in 21st century skills of critical thinking, communication, collaboration and creativity and share ideas for additional challenges.  
**Presenter(s):** Cary Sneider, PhD Houghton Mifflin Harcourt
- (094) 9-12 C, P/PS Hands-On Lowrie  
**Phenomodeling: Providing Scaffolding for Phenomena-based Modeling**  
Learn how to provide scaffolding for your students to create models and construct explanations of phenomena using fool-proof strategies. Ideal for any teacher new to using phenomena in the classroom.  
**Presenter(s):** Karen Randazzo Hillsborough High School
- (095) 9-12 P/PS, NGSS Hands-On Maclean  
**Determining the Density of the Glass in a Snapple Bottle**  
A lab where participants will develop and execute an experiment to determine the density of the glass in a Snapple bottle by non-destructive means. Provides in-depth understanding of density.  
**Presenter(s):** Joe Wyatt Bayonne High School
- (096) 9-12 NGSS, B/LS Lecture Nassau 25  
**Using Mitotic Division to Introduce Statistical Hypothesis Testing in AP and IB Biology**  
Turn the root tip mitosis lab into an opportunity to teach test of correlation and chi-squared so students are prepared to analyze more complex data.  
**Presenter(s):** Kristen Dotti Verde Valley School
- (097) 9-12 STEM/STEAM, P/PS Lecture Nassau 27  
**Introduction to Engineering Design for Science Instruction**  
Teachers do an engineering design challenge and work together to outline the engineering design process they used, and then compare and contrast those steps to the NGSS science and engineering practices.  
**Presenter(s):** Katey Shirey Knowles Teacher Initiative
- (098) 9-12 B/LS, NGSS Hands-On Rush  
**Changing Habitats, Changing Populations**  
Come use free resources from HHMI BioInteractive that help teach how environmental changes impact populations. These are NGSS-aligned and can be used for 3-dimensional lessons, 6-12 grades, also for Earth Science.  
**Presenter(s):** Karen Lucci Hopewell Valley Central High School
- (099) PreK B/LS, ENV Hands-On Wilson  
**Marvelous Manatees: Gentle Giants of the Sea**  
Put on your wet suits and deep dive into the sea to learn about manatees, their habitats, and why they are important to our ecosystem. Learn about manatees, their habitats and what we can do to help them survive.  
**Presenter(s):** Cheryl Filipak Newark Public Schools

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### 8:30-9:30

- (100) 6-8 NGSS, C Lecture Fitzgerald  
**Measuring Science Proficiency Through a More Authentic Virtual Science Laboratory**  
The open-ended, authentic 3D virtual laboratory prototype helps examine students' science sense-making skills. The VSL is programmed to include interactive supplies and scientifically accurate simulated phenomena.  
**Presenter(s):** Shu-Kang Chen Educational Testing Service
- (101) 9-12 C, NGSS Hands-On Princeton  
**NGSS Chemistry for Struggling Learners**  
Experience NGSS activities in Chemistry made accessible to all including students with IEPs. You will be able to learn from co-teachers who have 28 years of experience in teaching the inclusion students.  
**Presenter(s):** Anjana Iyer; Catherine Zavacki Hillsborough High School
- (102) 9-12 P/PS, T Hands-On Witherspoon  
**Coding to Understand Friction**  
Coding the TI Calculator to drive the Rover will allow us to explore the concept and consequences of rolling friction in interactive ways. The goal is to understand a level beyond formula manipulation commonly done.  
**Presenter(s):** Jacklyn Drucker Texas Instruments

### 8:30-10:00

- (103) Not Grade Specific NGSS, I/G Hands-On Carnahan  
**Planning NGSS-Aligned Lessons and Assessments**  
Learn how to plan NGSS aligned lessons and assessments in which students make sense of natural phenomena. We will highlight lesson planning resources and tools and we will practice how to use them.  
**Presenter(s):** Wil van der Veen; Stacey van der Veen, Leadership in Science LLC; Cathlene Leary-Elderkin, Rider University; Anne Catena, Princeton University Raritan Valley Community College - Science Education Institute
- (104) 6-8 ENV, NGSS Hands-On Mercer  
**STEM-ulating Activities on Human Ecology**  
Discover innovative ways to teach middle schoolers about human-environmental interactions, while also building STEM skills through problem solving, mathematical modeling, interactive technology and more!  
**Presenter(s):** Judy Levine Population Connection

### 9:30-10:30

- (105) 9-12 Forensics, P/PS Lecture Bainbridge  
**Forensic Analysis of Glass**  
Properties of glass (density, refractive index, fracture patterns) enable scientists to determine if glass data is consistent with crime scene evidence. Using inexpensive materials examine these tools. Handouts.  
**Presenter(s):** Anthony Bertino; Patricia Nolan Bertino National Geographic/Cengage
- (106) 9-12 ENV, NGSS Hands-On Henry  
**NGSS and Engineering in the Environmental Science Classroom**  
Join us as we share ideas on how to incorporate science and engineering practices into current high school environmental science lessons and activities.  
**Presenter(s):** Jessica Stibitz; Joe Hernandez Hillsborough High School

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### 9:30-10:30 (continued)

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|--|------|---------------|------------|-----------|
| (107)  | 9-12 | T, Assessment | Discussion | Nassau 24 |
| <b>Effective Use of Classroom Technology</b>   |      |               |            |           |
| Learn strategies for implementation of technology that supplements student understanding and increases student engagement. We will also discuss developing and managing assessments and tracking student growth. |      |               |            |           |
| <b>Presenter(s):</b> David Frangiosa    Pascack Hills HS   |      |               |            |           |
|  |      |               |            |           |
| (108)  | K-5  | NGSS, I/G     | Lecture    | Nassau 28 |
| <b>Using Multimedia Resources to Obtain Information in the Science Classroom (K-8)</b>   |      |               |            |           |
| Participants will learn various grade level appropriate resources for obtaining, evaluating and communicating information and how to incorporate these resources into the K-5 science classroom.                 |      |               |            |           |
| <b>Presenter(s):</b> Kristen Crawford    School District of the Chathams   |      |               |            |           |
|  |      |               |            |           |
| (109)  | 9-12 | C, I/G        | Lecture    | Nassau 29 |
| <b>Using Portfolios in a High School Science Classroom</b>   |      |               |            |           |
| Science portfolios are a useful tool to assess students on their comprehension and application of the subject matter. Students can personalize their assessments through their selections and visual aids.       |      |               |            |           |
| <b>Presenter(s):</b> Stacey DeRose    Vineland High School   |      |               |            |           |
|  |      |               |            |           |
| (110)  | 6-8  | NGSS, T       | Demo       | Nassau 30 |
| <b>Get Your Game On: Game-based Learning with Legends of Learning</b>  |      |               |            |           |
| Experience Legends of Learning and see how you can integrate an exciting game-based learning platform into your curriculum to give your students the superpower of knowledge! Please bring a computer with you.  |      |               |            |           |
| <b>Presenter(s):</b> Josh Goldberg    Legends of Learning  |      |               |            |           |

### 9:30-11:00

- |   |     |      |          |           |
|---|-----|------|----------|-----------|
| (111)   | K-5 | NGSS | Hands-On | Forrestal |
| <b>Science and Engineering Practices in the NGSS</b>  |     |      |          |           |
| Join TCI for an engaging Bring Science Alive! investigation to make sense of the natural and designed world. Participants act as students to build models, analyze and interpret data, and communicate their methods. |     |      |          |           |
| <b>Presenter(s):</b> Laura Obert    Teachers' Curriculum Institute  |     |      |          |           |

### 10:00-11:00

- |   |                    |                    |         |            |
|---|--------------------|--------------------|---------|------------|
| (112)   | Not Grade Specific | SL/SUP, STEM/STEAM | Lecture | Fitzgerald |
| <b>Leadership Strategies and Tools Ensuring Each Student Has a STEM Future.</b>   |                    |                    |         |            |
| Investigate strategies using the NGSS Framework, CTE and local resources to develop a program that ensures each student, K-12, has high quality challenging STEM opportunities-creating a STEM School District. |                    |                    |         |            |
| <b>Presenter(s):</b> Bob Sotak    National Science Education Leadership Association   |                    |                    |         |            |
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- |  |                    |               |          |         |
|--|--------------------|---------------|----------|---------|
| (113)  | Not Grade Specific | STEM/STEAM, T | Hands-On | Maclean |
| <b>Integrating Chromebook™ with Vernier Technology</b>   |                    |               |          |         |
| Participate in fun and engaging experiments using various Vernier sensors with Chromebooks to compare grip strength, investigate pressure and volume relationships, and match position graphs. |                    |               |          |         |
| <b>Presenter(s):</b> Fran Poodry    Vernier Software & Technology  |                    |               |          |         |

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### 10:00-11:00 (continued)

- (114) 9-12 Forensics, B/LS Lecture Nassau 25  
**Forensics: Who Did It? What Happened to Crystal?**  
Come learn how to design a crime scene that promotes hands-on learning while challenging the students to put together a story through the analysis of multiple pieces of physical and trace evidence.  
**Presenter(s):** Wendy Bruffy Kinnelon High School
- (115) K-5 NGSS, Common Core Lecture Nassau 27  
**Amazing Informational Texts and the Next Generation Science Standards: Grades K-3**  
Informational texts that match specific standards (K-3) will be shared and lessons intended to build knowledge of the standards, as well as literacy skills, will be described.  
**Presenter(s):** Sarah Anderson; Dr. Susan Dougherty Metuchen Public Schools
- (116) 6-8 NGSS, E/SS Hands-On Princeton  
**Tying Together Scale and Modeling in the Middle School Earth/Space Science Classroom**  
Explore multiple resources and models to support student understanding of scales of time and distance as they apply to the study of the Earth's history and its place in the solar system.  
**Presenter(s):** Ann Marie Carrick South River Middle School
- (117) 9-12 B/LS, I/G Lecture Wilson  
**Starla's Cover the Basics and Create the Best**  
Learn simple techniques that help you eliminate most classroom distractions and problems. Great teaching skills will be presented to you in a way that empowers you and motivates your students to be successful.  
**Presenter(s):** Starla Ewan Starla's Creative Teaching Tips
- (118) 6-8 Engineering, P/PS Hands-On Witherspoon  
**Rockets and Newton's Laws Workshop - Think Like an Engineer and Have Some Fun!**  
This hands-on workshop uses inexpensive materials to build and test rockets. A fun, engaging activity with content ties to Newton's Laws, design engineering, criteria and constraints, and competing design solutions.  
**Presenter(s):** Steven Per; Julia Giordano Thomas Grover Middle School
- ### 10:00-11:30
- (119) 9-12 B/LS, Forensics Hands-On Campus  
**Who Is Baby Whale's Father? DNA Fingerprinting Solves the Mystery!**  
You can do hands-on electrophoresis in your own classroom! You will pour, load, and run a gel, capture gel image, analyze the results, and deduce a probable conclusion for a whale of a forensic mystery.  
**Presenter(s):** Erika Fong The MiniOne Systems
- (120) 6-8 P/PS, STEM/STEAM Hands-On Dod  
**Building Simple Electric Motors to Teach Engineering Design**  
Teach students the engineering design process as they study relationships between coil number, wire thickness, magnet specifications and motor speed. Integrates science, technology, engineering, math and writing.  
**Presenter(s):** Roxane Ohl AquaPhoenix Scientific (Kemtec)
- (121) K-5 E/SS, ENV Hands-On Lowrie  
**Demystifying the 3D NGSS and STEM Through the Phenomenon of Earthquakes**  
In this study of the phenomenon of earthquakes, create and use models of waves, see patterns through simulations and design authentic and engaging solutions.

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**Presenter(s):** Pam O'Brien     STEMscopes

### 10:00-11:30 (continued)

(122)                      9-12                      B/LS, I/G                      Hands-On                      Rush

**Designing Your Own Escape the Room (ETR)**

Escape the Room is an interactive experience to engage students in DCIs & CCCs through problem-solving. Participants will engage in an ETR for an evolution unit and learn how design both physical and digital ETRs.

**Presenter(s):** Stefanie Ucles; Karen Lucci, Eric Guise     Hopewell Valley Regional School District/ Biology Teacher's Association of NJ

### 10:30-11:30

(123)	6-8	I/G, NGSS	Lecture	Carnahan
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**Designing and Using 3-D Formative Assessments to Support Meaningful NJSL-S Investigations**

Come examine samples of student responses and explore how to design assessments of three-dimensional learning and engage in sense-making to interpret student responses.

**Presenter(s):** Michael Heinz

(124)                      9-12                      NGSS, ENV                      Hands-On                      Mercer

**Cultivating the Scientific Practice of Asking Questions: Tools for Teachers and Students**

This workshop models strategies to assist teachers and students in the scientific practice of asking questions. We will share tools that help guide students to develop and evaluate the sophistication of questions.

**Presenter(s):** Vicky Piltisis; Missy Holzer     Hopewell Valley Regional School District

### 11:00-12:00

(125)                      Not Grade Specific     NGSS, I/G                      Discussion                      Henry

**Finding the HOW and WHY in the Lab Procedure**

The mechanisms for why results occur in a lab experiment are often found in the procedure. Explore how to use a lab procedure to initiate conversations about how experiments generate evidence to support claims.

**Presenter(s):** Caitlin M Ament; Theodore J. Graham     Passaic High School

(126)                      Not Grade Specific     NGSS, I/G                      Lecture                      Nassau 24

**STARS: Experiences in Aligning Curriculum and Assessment to NGSS**

Rider and Princeton Universities partnered with four districts to develop NGSS-aligned curricula and assessments. The presentation will focus on formative assessment tasks/prompts that align with the curriculum.

**Presenter(s):** Deborah Cook; Kim Feltre     Rider University

(127)                      K-5                      I/G, NGSS                      Lecture                      Nassau 28

**Best Practices in Content Area Classroom Libraries**

Participants will learn how to utilize multimedia resources to create text sets that students can use to think like scientists and build a strong knowledge base.

**Presenter(s):** Julie Allen     Booksource

(128)                      6-8                      I/G, NGSS                      Lecture                      Nassau 29

**Visualize Crosscutting Concepts: A Middle School Integrated Science Lesson That Works**

Engage students to make real world connections between natural phenomena, earth's systems and crosscutting concepts. Applies to all science domains. Develops observation and scientific drawing skills. NGSS aligned.

**Presenter(s):** Robert Chernow; Lindsay Heinrich     Randolph Middle School

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### 11:00-12:00 (continued)

(129) 6-8 STEM/STEAM, Bilingual STEM Lecture Nassau 30  
education in an Urban Setting

#### **Strategies for Teaching STEM to Bilingual Students in an Urban Setting.**

In this session, we present ways to use STEAM to introduce and expose Bilingual students from urban high poverty areas to authentic learning experiences that prepare them to be global citizens.

**Presenter(s):** Albert Padilla; Ahmed Hassanein Jersey City Public Schools

### 11:00-12:30

(130) 9-12 B/LS, Forensics Lecture Bainbridge

#### **Chicken Decomposition/Entomology Study: Forensics, Ecology, Evolution and Animal Behavior**

Inexpensive activity guaranteed to capture student interest. Observe insect succession, behavior, symbiotic relationships, development, adaptation, decomposition, injury sites and postmortem interval. Handouts.

**Presenter(s):** Anthony Bertino; Patricia Nolan Bertino National Geographic/Cengage

### 11:30-12:30

(131) K-5 NGSS, ENV Hands-On Forrestal

#### **NGSS, EE and You !**

This 1-hour workshop will show teachers how to cover the NGSS standards while teaching important concepts in Environmental Education.

**Presenter(s):** Laura McCluskey Parsippany Hills High School

(132) 6-8 P/PS, T Lecture Nassau 27

#### **Solubility Science: Combining Science, Technology, Language Arts**

Crystal formation intrigues students as it is easily observed. Students apply scientific concepts of solubility with technology skills, script-writing, and creating a movie.

**Presenter(s):** Paulette Cinotti; Christine Sullo Ridgewood Ave School

(133) 9-12 B/LS, NGSS Hands-On Wilson

#### **DNA Glow Lab: A New Way to Investigate DNA Structure**

Discover a new way of studying DNA in the classroom. Students investigate how factors like temperature, pH, and sequence affect DNA structure. Go beyond models and introduce a lab to your DNA unit. And it glows!

**Presenter(s):** Ezequiel Alvarez Saavedra miniPCR

### 11:30-1:00

(134) 6-8 P/PS, C Hands-On Maclean

#### **Implementing NGSS into your Middle School Physical Science Classroom!**

The perfect workshop for those who need fun ways to implement the NGSS into your Middle School physical science classroom. Includes many ideas, demos and hands-on activities with an emphasis on the design engineering process.

**Presenter(s):** Shannon Corcoran West Essex Middle School

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### 11:30-1:00 (continued)

- (135) 9-12 NGSS, B/LS Lecture Nassau 25  
**Infuse Math into Your APES/IB ESS or AP/IB Biology Course by Using Data Generating Games Each Day**  
Discover data-generating activities that teach scientific phenomenon and NGSS through modeling. Use the data set to write a mathematic equation and hypothesis supported with evidence.  
**Presenter(s):** Kristen Rae Dotti Verde Valley School
- (136) Not Grade Specific NGSS, P/PS Hands-On Princeton  
**Developing Three-Dimensional Science Assessment Tasks Aligned to NGSS**  
We will model and design 3D science performance-based assessment tasks aligned to NGSS by using an approach that begins with the PEs and uses the foundation boxes to organically develop items in coherent blocks.  
**Presenter(s):** Tricia Maxwell; Shu-Kang Chen Educational Testing Service
- (137) 6-8 B/LS, ENV Hands-On Witherspoon  
**Teach Evolution with Confidence Using TIES Resources**  
The Teacher Institute for Evolutionary Science helps teachers teach evolution with confidence. Receive a free unit of materials, including a presentation and exam. Activities integrate core concepts and practices.  
**Presenter(s):** Robert Cooper Pennsbury High School-Retired

### 12:00-1:00

- (138) 9-12 E/SS, ENV Demo Mercer  
**Case Studies - Compelling and Engaging 3-D Instructional Tools**  
Looking for creative ways to engage students in phenomena? This session models how to create and use case studies to teach complex phenomena in Earth and Environmental sciences.  
**Presenter(s):** Margaret Holzer, PhD; Carrie Ferraro, PhD, Tanya Oznowich, Environmental Education Supervisor NJDEP Chatham High School
- (139) 9-12 NGSS Hands-On Rush  
**Practical Modeling in the Science Classroom**  
In this practical guide to modeling in science classrooms, teachers will work through what is a conceptual model, what makes a good conceptual model, and how can to create your own modeling activities.  
**Presenter(s):** Jason Rothman Hunterdon Central Regional High School

### 12:00-1:30

- (140) 6-8 E/SS, NGSS Hands-On Campus  
**Ocean Science: Hand-on Lesson**  
Teaching about oceans can be overwhelming. Experience a hands-on lab where students learn the impact of wind, land, density, and temperature on ocean currents. Educators come away with the free lesson and resources.  
**Presenter(s):** Lissa Johnson Mosa Mack Science
- (141) Not Grade Specific NGSS, I/G Hands-On Carnahan  
**What an NGSS-Aligned Classroom Looks Like and Sounds Like**  
We have spent three years visiting K-12 classrooms around the state to learn from teachers as they implement the NGSS. We'll share high-impact strategies and success stories from these classrooms.  
**Presenter(s):** Stacey Van der Veen; Wil van der Veen Leadership in Science

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### 12:00-1:30 (continued)

- (142) 6-8 Engineering, I/G Hands-On Dod  
**Developing Innovation Centers**  
Innovation centers are areas where students can collaborate, innovate and create design solutions to engineering challenges. Hands-on workshop will provide ideas for a series of challenges for middle grade students.  
**Presenter(s):** Michael Comer Pearson
- (143) 9-12 C, Safety Hands-On Lowrie  
**Green Chemistry Is Safe Chemistry**  
Be green, be safe. Replace traditional Chemistry labs with Green Chemistry labs that are aligned with NGSS. Green chemistry incorporates safe, non-toxic products and processes in the standard chemistry curriculum.  
**Presenter(s):** Bettyann Howson; Beyond Benign Chatham HS retired

### 12:30-1:30

- (144) 9-12 ENV, NGSS Hands-On Henry  
**NGSS and Differentiation in the Environmental Science Classroom**  
Join us as we share NGSS-based lessons and activities that can be utilized and differentiated in classes for learners at all levels from honors to the resource level classroom.  
**Presenter(s):** Jessica Stibitz; Joe Hernandez Hillsborough High School
- (145) 6-8 NGSS, I/G Lecture Nassau 24  
**Middle School NGSS Lessons that Really Work !**  
Standards-aligned middle school activities. Students doing science !!! Activities that really work !!  
**Presenter(s):** Catherine Justin; Michael McMullen Cinnaminson Middle School
- (146) 6-8 STEM/STEAM Panel Nassau 28  
**Full S.T.E.A.M. Ahead: Building Equitable Next Generation Experience for Middle School Students!**  
Research posits the importance of creating engaging STEAM curricula experiences for students. Our panel will provide teachers/administrators with practical guidance to build equitable middle school STEAM pathways.  
**Presenter(s):** Elford Rawls-Dill; Patricia Hillyer, Mark Irons, Kristin Junquet, Deana Baumert, Mike Wells, Dustin Reynolds Matawan-Aberdeen Regional School District
- (147) 9-12 C Lecture Nassau 29  
**Kinesthetic Chemistry: Get Your Students Up and Moving**  
Through movement activities students will model Chemistry topics to develop understanding. These activities will engage your students, can be used as formative assessments and make your lessons even more enjoyable.  
**Presenter(s):** Catherine Zavacki; Anjana Iyer Hillsborough High School
- (148) 6-8 I/G, T Lecture Nassau 30  
**3D Printing Activities for Science**  
How can you use a 3D printer in the science classroom? We'll share some ideas for projects, ways to add a 3D component to your science lessons, and how to make tools and models to help with instruction.  
**Presenter(s):** Matthew Fritz; Jeannine Yecco, Rebecca Czyzewski Crest Memorial School

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### 1:00-2:00

(149)	6-8	I/G, NGSS	Lecture	Bainbridge
<b>OpenSciEd 6-8 Free Curriculum Materials</b>				
Learn about OpenSciEd, a free grade 6-8 NGSS-DESIGNED science curriculum that is being collaboratively developed by NJDOE, other state adopters, researchers, educators, and experienced curriculum developers.				
<b>Presenter(s):</b> Michael Heinz     NJ Department of Education				

(150)	6-8	NGSS	Hands-On	Forrestal
<b>Engineering Design in the NGSS</b>				
Experience this Bring Science Alive! lesson from the student perspective as you take on the roles of engineers defining problems, developing solutions, and testing to best solve the problem.				
<b>Presenter(s):</b> Laura Obert     Teachers' Curriculum Institute				

(151)	Not Grade Specific	STEM/STEAM, NGSS	Lecture	Nassau 27
<b>Single Point Rubrics in the STEAM Classroom</b>				
Using a single point rubric will offer you freedom to reflect on strengths and weaknesses of student work. These rubrics are especially useful in the STEAM classroom as they don't place a limit on exceptional work.				
<b>Presenter(s):</b> Leigh Fitzsimmons     Henry Hudson Regional School				

(152)	9-12	B/LS, T	Hands-On	Wilson
<b>Energy Quest: Where Cell Pathways ARE Fun and Games</b>				
Enhance your Life Science curriculum with the CPO Science LINK Energy Quest module. Show students how much fun our cells can be using Augmented Reality, game board play and 3D imagery.				
<b>Presenter(s):</b> Lynette Dickerson     School Specialty Science				

### 1:30-2:30

(153)	9-12	B/LS, T	Discussion	Rush
<b>Lab in a Box: A Free Biotechnology Loaner Program from Genes in Space</b>				
Lab in a Box: A free biotechnology loaner program from Genes in Space				
<b>Presenter(s):</b> Sebastian Kraves; Emily Gleason     Mini PCR				

(154)	K-5	P/PS, Engineering	Hands-On	Witherspoon
<b>Using Paper Roller Coasters and the Engineering Design Process to Meet 4-PS 3-4 Energy</b>				
Engage students in the engineering design process by building paper roller coasters to explore the conversion of potential to kinetic energy.				
<b>Presenter(s):</b> Ann Marie Carrick     South River Middle School				

### 1:30-3:00

<b>(155) TIME CHANGE</b>	<b>Not Grade Specific</b>	<b>P/PS</b>	<b>Hands-On</b>	<b>Maclean</b>
<b>NGSS Exploration of the Physics of Collisions for K-12</b>				
Explore an engaging lab that can be adapted for all grade levels using Vernier equipment to help students understand and explore the effects of collisions and its relation to the physics behind car crashes.				
<b>Presenter(s):</b> Andrew Yolleck     Liberty Science Center				

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### 1:30-3:00 (continued)

- |   |                    |   |          |           |
|---|--------------------|---|----------|-----------|
| (156)   | Not Grade Specific | NGSS, I/G   | Hands-On | Mercer    |
| <b>Modeling in the 6-12 Science Classroom</b>   |                    |   |          |           |
| Developing and using models is a very dynamic science and engineering practice. Learn what constitutes a model and how to get your students to use models for cognitive understanding of phenomena.                     |                    |   |          |           |
| <b>Presenter(s):</b> Kristen Crawford; Betsy Yates-Long, Brian Erb. Ceara Cleaves, Jillian Brandt      School District of the Chathams  |                    |   |          |           |
|   |                    |   |          |           |
| (157)   | 9-12               | C, STEM/STEAM   | Lecture  | Nassau 25 |
| <b>Making Sense Out of NGSS - Part II - Focusing on Phenomena</b>   |                    |   |          |           |
| Teachers will go through several exercises in integrating phenomena into their teaching along with CER (claim, evidence, and reasoning) to assist students to become active learners and encourage high order thinking. |                    |   |          |           |
| <b>Presenter(s):</b> Joy Alfano      Belleville High School   |                    |   |          |           |
|   |                    |   |          |           |
| (158)   | K-5                | NGSS, Social Studies:<br>Economics, Innovation, and<br>Technology | Hands-On | Princeton |
| <b>Bridge Builders: Merging STEM into Social Studies Instruction</b>  |                    |   |          |           |
| During this presentation, participants will get a hands-on introduction to one possible way they can merge science, technology, engineering and math with social studies instruction.                                   |                    |   |          |           |
| <b>Presenter(s):</b> Kengo Yamada      Liberty Science Center   |                    |   |          |           |

### 2:00-3:00

- |   |                    |                    |          |        |
|---|--------------------|--------------------|----------|--------|
| (159)   | 6-8                | E/SS, NGSS         | Lecture  | Campus |
| <b>ES:LAB: Asking Questions and Collecting Data</b>   |                    |                    |          |        |
| Come and share exemplary labs and activities that will get your students asking questions and carrying out investigations.  |                    |                    |          |        |
| <b>Presenter(s):</b> Angela Best; Missy Holzer, Marc Rogoff      Beverly City School  |                    |                    |          |        |
|   |                    |                    |          |        |
| (160)   | 9-12               | NGSS, P/PS         | Hands-On | Dod    |
| <b>The Argumentation Process: Training Students on How to Develop Scientific Arguments</b>  |                    |                    |          |        |
| Argumentation is a social process in which students build, question and critique claims using evidence about the natural world. Welcome to the “Generate an Argument Instructional Model”.                      |                    |                    |          |        |
| <b>Presenter(s):</b> David Mwangi; Adrienne Guagenti      East Orange Campus High School  |                    |                    |          |        |
|   |                    |                    |          |        |
| (161)   | Not Grade Specific | SL/SUP, STEM/STEAM | Hands-On | Henry  |
| <b>STEM Teacher - Science Teacher: What's the Difference?</b>   |                    |                    |          |        |
| STEM integration into science brings out the unique nature of STEM. There is a need to shift instructional strategies. See how getting a STEM certificate shifting practice through self-reflection and growth. |                    |                    |          |        |
| <b>Presenter(s):</b> Pam O'Brien      STEMscopes  |                    |                    |          |        |
|   |                    |                    |          |        |
| (162)   | 6-8                | E/SS, STEM/STEAM   | Lecture  | Lowrie |
| <b>Earthquake Engineers</b>   |                    |                    |          |        |
| Looking for a new STEM project? Follow the engineering design process to create an earthquake-resistant structure. Aligned with 21st century skills, this is the perfect fit for your Earth Science curriculum. |                    |                    |          |        |
| <b>Presenter(s):</b> Laura Perry; Chris Parr      Franklin Avenue Middle School   |                    |                    |          |        |

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### 2:00-3:00 (continued)

**(163) CANCELLED**      **6-8**      **Engineering, Ecosystems**      **Lecture**      **Nassau 24**  
**Saving Sea Turtle Nests: A Middle School Engineering Design Project**  
Join us in sharing our experiences in creating a 3-dimensional engineering design project that served as a guiding phenomenon for an ecosystems unit focusing on endangered species and human impact.  
**Presenter(s):** Mary Elizabeth Hughes; Catherine Pizzigoni      Auten Road Intermediate School I (Hillsborough Township)

(164)      6-8      NGSS      Discussion      Nassau 30  
**2018 NJSTA Maitland P. Simmons Memorial Award**  
Scholars who attended the 2018 Summer Institute, "3D Learning in Today's Science Classroom..." will reconvene. All others are welcome to attend and hear about the next exciting 2019 Summer Institute.  
**Presenter(s):** Cheryl Zanone; Patti Duncan      NJSTA Maitland P. Simmons Memorial Award Committee

### 2:00-3:30

(165)      Not Grade Specific      NGSS, I/G      Hands-On      Carnahan  
**Using Crosscutting Concepts to Focus Investigations and Guide Class Discussions**  
Crosscutting Concepts provide a way of thinking about science. Learn how to use Crosscutting Concepts to focus science investigations and how to use them in questions to guide productive class discussions.  
**Presenter(s):** Wil van der Veen; Stacey van der Veen, Leadership in Science LLC; Cathlene Leary-Elderkin, Rider University; Anne Catena, Princeton University      Raritan Valley Community College - Science Education Institute

(166)      Not Grade Specific      I/G, Assessment      Discussion      Nassau 28  
**Transitioning to Standards-Based Grading**  
Participate in a discussion about rationale for transitioning to SBG and our process of implementing this assessment model. We will also discuss our challenges, successes and translation to traditional grades.  
**Presenter(s):** David Frangiosa; Elise Burns      Pascack Hills HS

(167)      9-12      P/PS, STEM/STEAM      Demo      Nassau 29  
**The Physics of SCUBA Diving**  
SCUBA diving uses thermo, gas laws, density, fluid mechanics and refractive indices. Using actual equipment we will discuss the challenges of being under water and how those problems are solved using Physics.  
**Presenter(s):** Joe Wyatt      Bayonne High School

### 2:30-3:30

(168)      Not Grade Specific      SL/SUP, Classroom Management      Lecture      Fitzgerald  
**I Am Passing Out Superpowers**  
Class management was rated #1 variable to building and sustaining a high achieving class. Best lessons remain undelivered without the ability to manage class. Learn how to decrease discipline challenges and empower all educators.  
**Presenter(s):** Deb Bingaman      Encinitas Educational Advocate

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### 2:30-3:30 (continued)

(169) K-5 STEM/STEAM, T Hands-On Forrester  
**Coding in the K-5 Classroom: Integrating STEM and Computer Science into Daily Instruction**  
K-5 educators! Integrate coding into your classroom. This session will include an introduction to lessons/courses offered by Code.org, as well as provide access to lesson plans/unplugged activities/coding resources.  
**Presenter(s):** Jessica Napolitano; Stacey Arvanites Lafayette Estates School #25

(170) 9-12 NGSS, Scientific Literacy/ Critical Thinking Lecture Wilson  
**Scientific Literacy and Critical Thinking**  
Students are exposed to headlines and news stories that are not entirely factual. Students need to develop necessary critical thinking skills through scientific literacy to analyze and process any information.  
**Presenter(s):** Stacey DeRose Vineland High School

### 2:30-4:00

(171)	Not Grade Specific	SL/SUP	Discussion	Nassau 27
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**NJSELA Annual Meeting**  
Annual meeting for all NJSELA members, prospective members -- all administrators responsible for science education, and interested guests. We will introduce new officers and plans for the coming year.  
**Presenter(s):** Meegan G. Adames; Eric Seigal