STEMteachersNYC
Science • Technology • Engineering • Math

By teachers, for teachers, about teaching
Affiliated with the American Modeling Teachers Association
Co-sponsored by Teachers College, Columbia University

Excellent PD opportunities from STEMteachersNYC

Weekend workshops are only $19.99! We are an approved NYC DOE Vendor (Vendor Number: STE-068881), an approved CTLE Sponsor (CTLE ID # 3385), and Co-sponsored by Teachers College, Columbia University. If you're a NYC DOE teacher you can even get compensated at the "per session" rate ($45.65/hour) for attending our weekend workshops. There are also many excellent summer workshops that are sure to inspire and rejuvenate. Ask your admin to provide financial support ($350/week) with this **ready-to-use letter.** Many also offer a graduate credit option.

Sunday, April 2nd - 10 AM to 1 PM

Facilitating Students' Creativity Through Experimental Design Plus

Led by (Sr.) Pat Connick, Ph.D.

Register at: https://creativityandexperimentaldesign.eventbrite.com

We know conducting research builds scientific thinking, but do you find it challenging to incorporate authentic experimental design into your already jammed pack curriculum? This workshop will offer some time saving and effective techniques to build more research and experimental design into your high school STEM classroom. Participants will work through and discuss a suggested week-by-week structure of the research program, which will includes steps to develop basic research skills such as: asking testable questions, designing data collection, working through analysis, dealing with "failure", and communicating results. The methods presented in this workshop could be used for a biological, physical, chemical, environmental, or mathematical theme, and better yet it can be done in a timeframe that does not overwhelm already busy high school students. This approach will discuss and share how to engage students in quality data collection methods in particular utilizing Vernier Scientific probeware, so If possible please bring a laptop with Logger Pro already downloaded on it. Participants will walk away with an overview of how to embed experimental design in a effective and efficient manner, plus be provided with some handouts on the implementation structure, and some sample research experiments.

A STEAMy Introduction to OpenSCAD and 3-D Printing

Led by Justin Gohde

Register at: https://steamyintroduction.eventbrite.com

Computer Science. Computational Thinking. STEAM. 3D Printing. Engineering. Spatial Reasoning.... Everyone agrees that these 21st Century Skills are vitally important, but how in the world can schools fit all of this "new" content into their already packed curriculum? This hands-on workshop will introduce participants to a promising solution: OpenSCAD, an easy-to-use and accessible open source 3D programming language. Participants will learn to use arithmetic, loops, decisions, and modules to quickly code a virtual 3D model that can be either 3D Printed or imported into most 3D/Virtual Reality applications. After quickly learning the basics, participants will work through a case study where they use a simple mechanical drawing as a guide to build to specification, design a physical interface for interlocking components, and apply the essential skills learned in the first part of the workshop. This workshop will present many resources that can easily be integrated into existing middle and high school Computer Science, Science, Math, Art, Design, Engineering, or Robotics curricula. So educators join us for this fantastic opportunity to explore methods for teaching computational thinking in a STEAM-infused environment that actively engage students. So come give it a try! No experience necessary.

Sunday, April 23rd - 10 AM to 1 PM

Incorporating Multiple Representations

Led by Zhanna Glazenburg

Register at: https://multiplerepresentations.eventbrite.com

Utilizing multiple representations helps students create a deeper and more thorough understanding of scientific concepts. When students build connections and explain their thinking using pictures, graphs, equations, and words they construct a much more profound understanding. Thus both Next Generation Science Standards and the redesigned College Board AP Biology, Chemistry & Physics standards place great importance on effective use and implementation of multiple representations of scientific concepts. The purpose of this workshop is to share some excellent strategies for incorporating multiple representation activities. This workshop will focus on how to integrate effectives strategies, and how to adjust current lessons and curriculum to authentically add in the use of multiple representations. Workshop participants will have an opportunity to engage in and review successful physical science examples. As well as, work in groups to practice designing their own multiple representation-informed models. Finally, participants will focus on reviewing and writing assessment questions (both formative and summative) aimed at using the multiple representation reasoning strategies as a way of illuminating student thinking and student understanding of concepts. High school physical science examples will be used in the workshop, however the strategies are highly applicable to any STEM educator grades 6-12.

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Saturday May 13th: 10am - 1pm

"Can we have a group test?" Designing collaborative, active, alternative assessments for physics and chemistry classes

Led by: Kelly O'Shea

Register at: https://collaborativeassessments.eventbrite.com

The Next Generation Science Standards require that students construct explanations and design solutions using scientific practices. Lab practicums are an engaging and effective way for students to demonstrate their understanding. At the same time, students often learn and work in groups, and scientists also work in teams. How can we design assessments that challenge students to use their practical skills while also reflecting the social nature of scientific understanding? In this workshop, participants will experience a collaborative practical exam, learn about different approaches to group and practical assessments, think through how to apply these assessments in their own classrooms, and have an opportunity to design and try out a practical assessment of their own. Examples will be presented from both high school physics and chemistry classes.

Matter via the Particle and Energy Model

led by Tammy Gwara

(registration will open soon - the link will soon be on our website - www.stemteachersnyc.org)

Sunday June 4th: 10am - 1pm

Show & Tell, Annual Meeting, and Elections

It's FREE Register to attend and reserve a table at: https://steamyintroduction.eventbrite.com Share what you are doing, see what your colleagues are doing, network with other teachers, and find out what's being planned for the future. We encourage you to reserve a table to showcase your favorite demo, activity, resource, or student work.

Summer 2017 Workshops

Now is the time to ask your principal to support your summer PD plans!

Short Workshops

Assessment/Standards-Based Grading, Mark Schober and Manjula Nair, July 5-7 (3 days)
For more information and to register visit: https://assessmentandsbg.eventbrite.com
Short description: This three-day workshop will guide you through the steps to set up your classes for standards-based grading. We will show you an incremental approach to implementing SBG principles, provide sample learning standards, assessments, and gradebooks, and give you structured time and feedback as you tailor these tools for your own classes. Throughout, we will consider how to make an effective assessment strategy that is an integral part of a cyclical learning process.

How to Plan & Lead 3-hour PD Workshops, Mark Schober, July 22-23 (2 days)
For more information and to register visit: https://plan-lead-pd.eventbrite.com
Short description: This two-day workshop will provide tips, training, and practice in planning and leading a successful STEM teacher professional development workshop. For both experienced and new leaders, leading workshops is a powerful form of professional development that benefits the leader as well as the participants.

Intro to Modeling, Mark Schober, July 10-14 (1 week)
For more information and to register visit: https://introtomodeling2017.eventbrite.com
Short description: During this one-week introduction to the principles of Modeling Instruction we'll introduce several aspects of modeling such as facilitating student discourse, the modeling cycle, multiple representations in problem solving, and model-based curriculum design. We will explore these ideas by exploring content from several cross-cutting-concepts such as examining the role of energy, electricity, and light in biological and physical science contexts at middle and high school levels.

2-3-week Workshops

Electricity & Magnetism Modeling, Michael Crofton, July 10-21, with optional 3rd week, July 24-28.
For more information and to register visit: https://eandm2017.eventbrite.com
Short description: Teachers will work through coherent model-centered materials for high school electricity and magnetism from a microscopic perspective to develop a deep understanding of content and how to teach it effectively. The course will begin with the study of electric charge and the electric fields produced by charges. Followed by electrical energy, the concept of electric potential, circuits, electric fields, magnetic fields, and magnetic forces. With an optional 3rd week on electromagnetic waves and electromagnetic induction.

Mechanics Modeling (NYS Regents aligned), Zhanna Glazenburg, July 17-28 (2 weeks)

For more information and to register visit: https://mechanicsmodeling2017.eventbrite.com

Short description: Come learn a fantastic teaching method known as Modeling InstructionTM and how it can help improve and deepen your students' understanding of crucial concepts in physics. This workshop will immerse you in Modeling Instruction so that you can develop the skills necessary to implement this student-centered, research-informed, standards-based, NYS regents aligned curricular approach.

Chemistry 2 Modeling, Donghong Sun and Rachel Ward, July 24 - Aug 4 (2 weeks)

For more information and to register visit: https://2017chemistry2.eventbrite.com

Short description: Chemistry II Modeling Workshop is intended for chemistry teachers who have taken the Chemistry I Modeling workshop, and have begun to teach chemistry using Modeling Instruction, a research-based, reformed pedagogy that is completely aligned with the eight Science & Engineering Practices in the NGSS. Topics include the internal structure of the atom, covalent bonding, intermolecular forces, equilibrium and acids and bases.

Middle School Modeling, Jeff Hengesbach, July 31-Aug 11 (physical, earth & space sciences, with optional 3rd week, Aug 14-18 on life sciences)

For more information and to register visit: https://middleschoolmod2017.eventbrite.com

Short description: Our Middle School Science Modeling workshop will highlight and embed a notably successful method of STEM instruction known as Modeling Instruction(TM); which is characterized by inquiry-based labs, and classroom discussions based around whiteboarding. Participants will learn some great activities to invigorate their teaching practices as well as learn some notable strategies to improve student engagement, content retention, and student discourse.

Best Practices in HS Biology, Christopher Resch and Glen Stuart, Aug 7-18 (2 weeks)

For more information and to register visit: https://bestpractices-inbio.eventbrite.com

Short description: This workshop is aimed at expanding teachers' best practices toolbox for facilitating student discourse and reflection in their high school biology class. Participants will learn strategies to incorporate in their own classroom that will get their students to articulate findings using the claim, evidence, reasoning framework. During this workshop, teachers will be able to experience the use of these tools while experiencing and exploring engaging biology themed activities that can be used in their own classroom.

Send questions to: Registration@stemteachersnyc.org

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