CONNECTICUT SCIENCE CONNECTION

January 2017

THE CONNECTICUT BUILDING A PRESENCE FOR SCIENCE NETWORK IS SUSTAINED THROUGH THE ADVOCACY OF THE CCAT, CONNECTICUT SCIENCE SUPERVISORS ASSOCIATION, AND THE CONNECTICUT SCIENCE TEACHERS ASSOCIATION

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NAMES AND E-MAIL ADDRESSES OF OUR POINTS OF CONTACT AND KEY LEADERS ARE NOT SHARED WITH ANY OTHER ENTITY

Resourc

Find Your Science Education Solutions

Join NSTA and *Martian* author Andy Weir for an out-of-this-world experience at the 2017 National Conference in Los Angeles

TRAINING! From our Guru of Safety Ken Roy! The annual calendar for the Science Safety Workshop Series is ready! Information can be found at :http://www.wesleyan.edu/greenstreet/professionaldev/sciencesafety.html. This year we are excited to announce that each registration includes a copy of Dr. Ken Roy's latest book – *Science Laboratory Safety Manual*. A $99 value with over 450 pages of legal safety standards, best practices, and more for your reference! February 16, 2017 – Safety in the Art Classroom/Studio March 9, 2017 – Safety in the Next Generation Science Standards (NGSS) March 23, 2017 – Science Lab Safety and Liability for Administrators .

Connecticut Science Teachers Association

"...to inspire, promote and support the learners of science in the state of Connecticut."

CSTA has a new website coming! If you need to renew now, do so vthe new site. The direct link is https://csta.wildapricot.org/Join-us Renew on the web site or print form!

Penn State Learning has an opening for our Coordinator for Math Learning Communities position. Please visit https://psu.jobs/job/68337 for further details and to apply. Center for Science and the Schools The Pennsylvania State University

Penn State Learning is seeking an individual to work in a multidisciplinary STEM environment developing approaches to support out-of-class learning based on an understanding of the multiple ways in which students develop and learn.

FREE NGSS Workshop for Teachers and Educational Administrators

Learn how two nationally recognized non-profit organizations and regional leaders for science education can help you create and support an effective curriculum & implementation for the Next Generation Science Standards (NGSS) for 2017, K-12 . This course will be hosted by NESS and EBEC. Learn more. February 2 | Registration Required

FREE WORKSHOP for Regional Leaders in Science and STEM education
February 2, 2017, 8:30 am - 2:30 pm, New England Science and Sailing Foundation, 70 Water Street, Stonington, CT
Hosted by the New England Science & Sailing Foundation (NESSF) and East Bay Educational Collaborative (EBEC)
At this workshop you will learn how two nationally recognized non-profit organizations and regional leaders for science education can help you create and support an effective curriculum & implementation for the Next Generation Science Standards (NGSS) for 2017, K-12 .This work shop will provide information on:

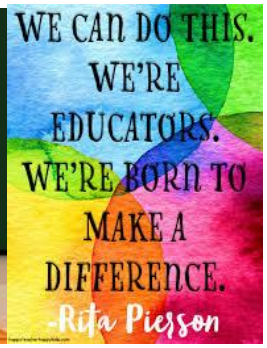
- **An overview of the Next Generation Science Standards (NGSS).**
- **How you can utilize nationally developed science kit programs, specifically aligned to NGSS, such as FOSS and SEPUP for K-8 in an affordable manner**
- **The latest high school programs developed nationally and about current grant supported opportunities;**
- **Learn about a cost effective approach for implementation and continuing science materials resources support ;**
- **Learn about free professional development opportunities and other grant opportunities**

Morning Coffee, Luncheon, and door prizes will be provided. *Please note this facility is not handicap accessible at this time*
Online advance registration by January 24, 2017 is required. Registration limited to 30 participants
Further information is on the EBEC or NESS websites: ebecri.org or nessf.org

Deepen your science content knowledge, interact with working scientists, and gain valuable resources for your classroom with *Seminars on Science*, the American Museum of Natural History's online professional learning program. The 6-week online courses in the life, Earth, and physical sciences are co-taught by Museum scientists and classroom educators and are accessible on your schedule. Graduate credit is available from our university partners. The next session starts January 30th. Save $50 when you use code SCIENCEMATTERS. Courses include: *Climate Change; The Diversity of Fishes; Earth: Inside & Out; Evolution; The Ocean System; Sharks and Rays;* and *Space, Time and Motion.* For more information about the program, check out *Seminars on Science* at amnh.org/learn. If you have any questions, send us an email at learn@amnh.org or call (800) 649-6715.

Subject: [CTEnvL] Trail Construction & Maintenance Intern Positions Available for Summer, 2017

Do you know an 18-24 year-old who would benefit from a great outdoor experience this coming summer working on a Trails Crew to maintain Blue-Blazed Hiking Trails in Connecticut? If so, please let them know about this internship opportunity (training and a stipend are included): http://www.ctwoodlands.org/about-us/job-opportunities



THE FOLLOWING ANNOUNCEMENTS WERE IN THE NOVEMBER EDITION OF THE CONNECTICUT SCIENCE CONNECTION, BUT ARE STILL VERY CURRENT AND ARE BEING REPRINTED IN CASE YOU MISSED THEM! HAPPY NEW YEAR!

UConn's Natural Resources Conservation Academy Environmental Programs for Teens, Adult Learners & Teachers

Three opportunities to engage in exciting environmental education programs through UConn's Natural Resources Conservation Academy (NRCA): 1) Conservation Ambassador Program for high school students, 2) Conservation Jump-start Workshops for high school students and adult learners, and 3) Teacher Training (see below for details).

NRCA's Conservation Ambassador Program

The NRCA's Conservation Ambassadors Program is great for high school students (grades 9 to 11) that are interested in the environment or science. Through a week-long field experience at UConn and an individual community conservation project, this program engages high school students in natural resource science and conservation biology in a fun and exciting way through experiential, place-based learning. This program will be entering into its sixth year of programming and was awarded the 2016 Maria Pirie Environmental Education Program Award from the New England Environmental Education Alliance.

Learn More About the NRCA's Conservation Ambassador Program: http://nrca.uconn.edu/

NRCA's Conservation Jump-start Workshops

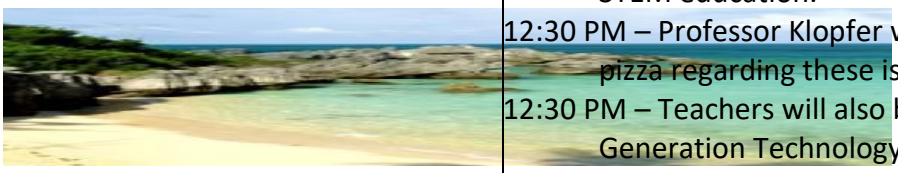
Beginning August 2017, faculty from UConn's Center for Land Use Education & Research and Departments of Natural Resources & the Environment and Education will be running multiple 2-day workshops for high school students and adult learners. Workshops will introduce participants to innovative, user-friendly geospatial technology that can be utilized to study and address local conservation issues.

NRCA's Teacher Training

Also, beginning July 2017, faculty from UConn's Center for Land Use Education & Research and Departments of Natural Resources & the Environment and Education will be running a 3-day professional

development workshop for secondary school teachers. Participants will be immersed in relevant local and regional water resource issues and online mapping tools to study these issues further. Each participant will also design 5-7 classes on a Water and Sustainability Science unit based on Next Generation Science Standards during the workshop that can be tailored to their needs.

If you are interested in learning more about these programs, I would be happy to discuss them with you further over email (laura.cisneros@uconn.edu) or by phone (860-486-4917). I am also visiting schools to give brief presentations on our programs to the students and teachers.



BERMUDA NEXT SUMMER!!

Interested in a professional development workshop this summer from June 26-July1 in Bermuda at the Bermuda Institute of Ocean Sciences? Learn the latest in data collection techniques including ocean "gliders." Also learn how to plan and implement a field study course at BIOS for your students. Contact Ed Argenta at: Edandpat74@comcast.net or Kaitlin Baird at: kaitlin.Baird@bios.edu for more information.

Go here for the program flyer: http://www.bios.edu/education/educator-workshops-at-bios/

Subject: [CTEnvL] Trail Construction & Maintenance Intern Positions Available for Summer, 2017
Date: Wed, 9 Nov 2016 17:14:57 +0000

Dear CT Environmental Leader,

Science & Engineering Colloquium for Teachers

MIT Club of Hartford

March 28, 2017

MIT Professor Eric Klopfer

Director of the Scheller Teacher Education Program and the Education Arcad

- Stimulate your intellectual curiosity
- Learn new information on how games and simulations can be applied to STEM
- Continue education opportunities

"Applying Science to Your Students' Lives"

The MIT Club of Hartford will be hosting this colloquium at the Pratt and Whitney Training Center in East Hartford. This colloquium is open to science, mathematics and technology teachers from Southern New England and is free of charge. Each teacher is encouraged to bring motivated, interested students. Space is limited to an audience of 60 teachers and students, so register today. In addition, all attendees must have registered prior to the event.

Program:

10:00 AM – Welcome by Avi Ornstein, MIT Club of Hartford.

10:15 AM – Professor Klopfer will speak on "Games and Simulations in STEM Teaching and Education".

11:00 AM – Professor Klopfer will participate in a group discussion, answering questions from the audience.

11:30 AM – Everyone will participate in a group discussion of what is going on in STEM education.

12:30 PM – Professor Klopfer will have an informal discussion with students over pizza regarding these issues that will affect their future.

12:30 PM – Teachers will also be able to have pizza and will be able to visit the Nex Generation Technology Center and to participate in an entertaining tour of the Pratt aircraft engines led by a retired B52 pilot.

12:45 PM – Students will be able to participate in an entertaining tour of the Pratt aircraft engines led by a retired B52 pilot.

The MIT Club of Hartford is counting on YOUR participation. Please set aside this date. Please contact Avi Ornstein (ornstein@alum.mit.edu) if you are interested in attending or if you desire more information.

Please share this note with other teachers who might be interested.

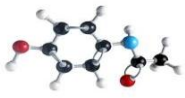
Eric Klopfer is Professor and Director of the Scheller Teacher Education Program and The Education Arcade at MIT. Klopfer's research focuses on the development and use of computer games and simulations for building understanding of science, technology, engineering and mathematics. The games that he works on are designed to build understanding of scientific practices and concepts as well as critical knowledge, using both mobile and web-delivered game platforms. In the realm of simulations, Klopfer's work focuses on students understanding complex systems through critical thinking and connecting computer programming with scientific practice and real-world issues. He is the co-author of the books, "Adventures in Modeling", "The More We Know", and the upcoming "Resonant Games", as well as author of "Augmented Learning." His lab has produced software that includes the UbiqBio line of mobile biology games, the Massively Multiplayer game, and The Radix Endeavor, as well as platforms such as

StarLogo TNG for modeling complex systems, Taleblazer for creating augmented realities, and Gameblox for making games online. His work also includes a series of Mas sive Open Online Courses known a s edTechX, which cover education al technology and games. His work has been funded by federal agencies including NIH, NSF and the Department of Education, as well as the Gates Foundation, the Hewlett Foundation, and the Tata Trusts. Klopfer is also the co-founder and past President of the non-profit Learning Games Network (www.learninggamesnetwork.org) .

Prof. Klopfer will give an overview of ongoing MIT work and will talk a bit more about the structure and goals. Then he will discuss the use of simulations and games in K-12 education and in teacher education. He will focus on why they are doing things and where they fit.

Note:

Due to government security regulations set because of the research done at Pratt & Whitney, to be able to participate in this program, you must RSVP on or before March 20th. The information that is needed is your name, whether you are a teacher or student, the name of your school and its city, your home and email addresses and whether you are or are not a U.S. citizen. If you are not a citizen, you will have to bring your passport with you.



MoDRN (Molecular Design Research Network) from Yale, **developed a number of materials for HS teachers**. These hands-on classroom exercises can be used by educators to introduce the topic of **safer chemical design through inquiry based learning**. The topics can be easily integrated into any existing science curriculum or can be allied health – based curriculum. We also matched the modules so they are aligned with Next Generation Science Standards. (see the attachments)

In addition to these exercises, we developed a database with the science fair ideas which teach the concepts of green chemistry and sustainability.

All materials are free of charge and can be accessed through our website, but I wanted to send some sample pdfs for the ease of distribution.

Attached you will find six modules, which can be also accessed online.

Our website address is http://modrn.yale.edu/education and under high school curriculum you will find the above mentioned materials. I do hope that your network will find them useful, and if possible, please forward to the annual conference participants. And while none of my colleagues is available this weekend, we hope to start building relationship with HS teacher network.

Finally, our collaborators from University of Washington will be sending a follow-up e-mail to NSTA participants who were part of our workshop in early November.

FOR STUDENTS

Official announcement of the new Eileen Kraus Scholarship, a partnership between the Hall and Kaman Corporation thathonors the legacy of 2002 Inductee Eileen Kraus. For each of the next five years, this program will award a $5,000 scholarship to one deserving young woman in Connecticut to launch her into her college experience. Click here for all the application details, and please share this announcement widely with students and colleagues. Application deadline for the first year is February 15, 2017.

New England Science & Sailing

New England Science & Sailing (NESS) has a wonderful scholarship opportunity available to send your students to one of our unique and curriculum enriching field trip programs this winter! NESS is able to provide **free** programming to those schools with a Free and Reduced lunch rate 80% or over, all you need to do is get your students to our waterfront location!

If you are not familiar with NESS, we are a nationally recognized, award winning nonprofit 501(c)(3) adventure education organization based in Stonington CT. We provide students of all ages with year-round programming that includes marine science, sailing and ocean adventure sports with an exceptional combination of on-the-water and in-the-classroom lessons intended to build confidence, teamwork, and leadership. Our programs support and enhance STEM/STEAM based curriculum, utilizing an inquiry-based approach to learning, where we emphasize “hands on, minds on”. All our programs incorporate the Next Generation Science Standards (NGSS), the Ocean Literacy Principles and can be adopted to meet individual classroom needs. Feel free to visit our Educator Guide for further insight into our programs: http://www.nessf.org/schools/invitation-to-educators. In addition, you may enjoy spending 2 minutes to watch our

school program video: http://www.nessf.org/schools/invitation-to-educators. We are excited to share this opportunity with your school district this winter. Our goal is to provide your school with a program that will challenge your students and assist in developing the next generation of STEM based learners. A few of our top recommendations include: STEAM Challenges, the Augmented Reality Sandbox, NESS Tech using ROV's (Remotely Operated Vehicles), Land Sailors, Simple Machines, and our brand new Aquaculture Investigations program.

Climate Cost Project's 2016/2017 *Witnessing Change Video Competition*.

The competition gives advanced high school and college students an opportunity to document local impacts of climate change, educating themselves, their communities, and the public. In addition to the video contest, the Climate Cost Project provides interdisciplinary education al materials on the economics of climate change, including a specialized climate change economics game and 101 environmental economics chapter. You can find out more about the competition, and our work and mission, in the short video further below, and on our website. We hope to see some of your student's submissions in the spring, and of course please get in touch with us if you have any additional questions.

https://www.youtube.com/edit?o=U&video_id=YWaB3wbNuCQ

The Milton Fisher Scholarship wants to support students who excel as creative problem-solvers and to help make their higher education goals more accessible.We encourage you to read the short description about the scholarship below. Please forward this information along to any promising student applicants that you may know and/or to relevant staff members.

To access the online application, see answers to frequently asked questions and read about previous winners, visit our website: **www.rbffoundation.org**

Applications due: April 30, 2017 We offer up to $20,000 (up to $5000 per year for four years) the scholarship is open to exceptionally Innovative and Creative High School Juniors, Seniors and College Freshmen who are: • **Graduating from a high school in Connecticut/New York City Metropolitan area (and plan to attend or are attending college anywhere in the U.S.)**

OR • **Graduating from a high school anywhere in the U.S. and plan to attend (or are attending) college in CT or NYC** Apply for this scholarship if you are . . .• **a student who has solved an artistic, scientific, or technical problem in a new or unusual way,** • **a student who has come up with a distinctive solution to problems faced by your school, community or family,** • **a student who has created a new group, organization, or institution that serves an important need.** The Milton Fisher Scholarship for Innovation and Creativity is administered by the Community Foundation for Greater New Haven.

Population Education's *World of 7 Billion* student video contest is back for the 2016-2017 school year. Would you consider helping us spread the word to Connecticut environmental educators? The contest is open to all high school and middle school students and the deadline for submissions is February 23th, 2017. We're hoping that by giving teachers enough lead time, they'll be able to incorporate the contest into their syllabi. Participating teachers can receive free curriculum resources and the student winners receive cash prizes.

This year's challenge:

Students will create a short video (up to 60 seconds) about human population growth that highlights one of the following global challenges:

- **Climate Change**
- **Ocean Health**
- **Rapid Urbanization**

***All videos must include a) how population growth impacts the issue, and b) at least one idea for a sustainable solution. We are happy to send copies of our contest flyer for you to share**

FOR TEACHERS!

PALEONTOLOGICAL RESEARCH INSTITUTION ANNOUNCES PUBLISHING OF SERIES OF *TEACHER-FRIENDLY GUIDES*™The Paleontological Research Institution (PRI) has published a national series of seven *Teacher-Friendly Guides*™ covering regional Earth Science of the United States. The Guides cover the geological history and processes behind real-world examples to help students make sense of the distribution of landforms, rocks and soils, mineral and energy resources, fossils, Earth hazards, and climate. The seven regions, covering all 50 states, represent the Northeastern, Southeastern, Midwestern, South Central, Northwest Central, Southwestern, and Western US.

The Guides were developed to help teachers incorporate local and regional examples into their Earth Science curricula. "We found that there has been a need for the Guides because nationally-distributed textbooks often make few references to the local area around any given school," said Rob Ross, PRI Associate Director for Outreach and one of the founders of the series. "And we found that while a number of good resources exist for individual states, the *Teacher-Friendly Guides* take geographic scope into account to explain larger scale Earth processes, with teachers and secondary students in mind."

Eighteen years in the making, the Guides began with a grant from the Arthur Vining Davis Foundations in 1999 for a *Teacher-Friendly Guide to the Geology of the Northeastern US*. The project was further supported by two grants from the National Science Foundation (0455833 and 0733303), to develop the Guides and a pedagogical approach, virtual fieldwork experiences (VFEs), by which students incorporate regional "virtual" fieldwork throughout the school year. Each Guide has a chapter on real and virtual field work and on using real-world regional Earth Science in the context of the Next Generation Science Standards. PRI offers teacher professional workshops on use of the Guides and developing and implementing virtual fieldwork experiences. An informal unveiling of the series will take place at the Geological Society of America's 2016 Annual Meeting in Denver, CO on September 26th at their Friends of PRI Reception.

All Guides are available for free at teacherfriendlyguide.org, in website format, as PDF downloads, and are also available to purchase as printed books. More information about the Paleontological Research Institution and the *Teacher-Friendly Guides* series is available at www.priweb.org or by phone at (607) 273-6623.

NSTA Launches new Safety Blog!

With a new school year starting soon, science, technology, engineering, and math (STEM) students will be participating in hands-on activities and demonstrations, which means that safety must be addressed. For a safer and more memorable learning and teaching experience, check out the new NSTA Safety Blog: *http://nstacommunities.org/blog/category/safety*

Why use the Blog?

· To share up-to-date information on legal safety standards and better professional practices for a safer working and learning environment and a safer STEM instructional experience;

· To disseminate current information on safety incidents occurring in K–12 classrooms, labs, and maker spaces;

· To provide support and initiate dialogue in efforts to answer safety-related questions from bloggers, either teaching or supervising in K–12 classrooms, labs, and maker spaces.

Anyone can subscribe for free! Just go to the blog address above and scroll down to the bottom of the page. Follow instructions for a complimentary subscription!

- Connecticut Green LEAF Schools has been awarded a **Teacher Quality Partnership Grant** through the CT Office of Higher Education. . More information about Connecticut Green LEAF Schools can be found at www.ctgreenleaf.org

- **NEW MATERIALS AND PROJECTS FROM NASA!**
  https://www.nasa.gov/audience/foreducators/index.html

NGSS K-8 Evidence Statements Now Available **The NGSS Evidence Statements for elementary grades (K-5) and middle grades (6-8) are now available. These statements were developed and reviewed by educators and scientists, including many members of the NGSS writing team. The evidence statements are intended to identify clear, measurable components that, if met, fully satisfy each performance expectation (PE) described within the NGSS. Given that each PE is three-dimensional, the statements describe how students can use the practices, crosscutting concepts, and disciplinary core ideas together to demonstrate proficiency on the PEs by the end of instruction. They are not meant to limit or dictate instruction and were written to allow for multiple methods and contexts of performance, including students' performance on multiple related PEs together at the same time.**

For more information, see the Introduction and Overview, which applies to the evidence statements for all grade levels. Additional materials, including appendices for K-2, 3-5, and middle school are coming soon.

What Is Science Matters? Science Matters is an initiative by the National Science Teachers Association (NSTA) to bring content, news, and information that supports quality science education to parents and teachers nationwide. Science Matters builds on the success of the Building a Presence for Science program, first launched in 1997 as an e-networking initiative to assist teachers of science with professional development opportunities. Building a Presence for Science—now Science Matters—reaches readers in 34 states and the District of Columbia. Why does Science Matter? Science is critical to understanding the world around us. Most Americans feel that they received a good education and that their children will as well. Unfortunately, not many are aware that international tests show that American students are simply not performing well in science when compared to students in other countries. Many students (and their parents!) believe that science is irrelevant to their lives. Innovation leads to new products and processes that sustain our economy, and this innovation depends on a solid knowledge base in science, math, and engineering. All jobs of the future will require a basic understanding of math and science. The most recent ten year employment projections by the U.S. Labor Department show that of the 20 fastest growing occupations projected for 2014, 15 of them require significant mathematics or science preparation to successfully compete for a job. This is why Science Matters. Quality learning experiences in the sciences—starting at an early age—are critical to science literacy and our future workforce. Feel free to publish this information in school newsletters and bulletins, and share it with other parents, teachers, and administrators.