

CONNECTICUT SCIENCE CONNECTION

January 2016

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

Resources



HAPPY HOLIDAYS TO ALL!

NGSS adopted by Connecticut! Training begins in the spring of 2016 in your region. Watch for updates on the CSDE's [science curriculum web site](#).

EQuIP Rubric for Science Released!

The [Educators Evaluating the Quality of Instructional Products \(EQuIP\) Rubric for Lessons & Units: Science](#)

Visit the NGSS@NSTA Hub :

The [NGSS@NSTA Hub](#) now offers a dynamic version of the *Next Generation Science Standards*.

Would you like a complete list of grants that has been provided by the National Science Teachers Association? NSTA has put these grant and their deadlines in an easy to follow calendar. It includes: deadline date, description, category, and grade level. To view this list, please visit:

<http://www.nsta.org/publications/calendar/>

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

PROFESSIONAL DEVELOPMENT

A Web-Based Introduction to Next Generation Science: Made with CT educators, for CT educators. Next-Gen Science CT is a free, online, self-paced short course that provides K-12 educators with a comprehensive starting point for understanding A Framework for K-12 Science Education and the Next Generation Science Standards. This modular overview course will eventually consist of 15 modules, a total of 20 to 60 hours of professional learning, depending on how deeply PLCs engage with the "Think & Discuss" prompts.

Each module focuses on a specific aspect of Next Generation Science teaching and learning, engaging educators in guided reflection, classroom application, and transition planning. The Moodle-based platform provides opportunities for course takers from across the state to engage in discussion and share ideas and resources.

For the best results, schools and districts are encouraged to form Professional Learning Communities (PLCs) and identify individuals who can be effective facilitators (NGSS expertise is not required). An online matchmaking forum is available for educators seeking to join a "virtual" PLC. Successfully completing all modules will confer an emailed certificate of completion and an electronic badge. Best for: Teachers of science, teachers of other subjects, school administrators, families, paraprofessionals, special educators and others with an interest in Next Generation science.

Cost: None

Learning hours: 20 to 60

Format: In-person and virtual study groups using web-based professional learning modules

Facilitation: District-selected facilitator(s)

For details and registration, visit the course website at <http://ngss.ccat.us> .

Questions? Contact Nick Balisciano at nbalisciano@ccat.us

Save the date: The next session of Seminars on Science, the American Museum of Natural History's online professional development program for educators starts January 25 th. Graduate credit is available for all 6-week online courses. Register by January 11th at amnh.org/learn.

Courses include: The Brain; Climate Change; The Diversity of Fishes; Earth: Inside and Out; Evolution; Genetics, Genomics, Genethics; The Ocean System; The Solar System and more. The courses are online-only and are led by both an experienced classroom teacher and a Museum scientist.

Sign up today and receive \$50 off your registration fee! Use code **SCIENCEMATTERS**. 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 us at 800-649-6715.

New Women in STEM Resource

Available The Connecticut Women's Hall of Fame is pleased to announce the release of STEMfems: Women Transforming Our World, a new module in our award-winning DIY History series. Specifically designed to help educators bring women's perspectives into the classroom, STEMfems includes Common Core-aligned information and activities related to pioneering Connecticut women in diverse STEM fields from 3D printing and architecture to biology and astronomy. Training and support in how to incorporate STEMfems content into your existing lesson plans is also available from CWHF staff. Register and download STEMfems today by visiting www.cwhf.org/DIY! It's free! Contact Bambi Mroz, Director of Education, for more details or with any questions (203-392-9013 |).



OCEAN
CLASSROOMS
Inspire New Depths

You can sign up for a free 30-day trial to check out a new online course, Marine Science 101. It is a comprehensive online (with offline components), high school, semester-long course. <https://oceanclassrooms.com/learn/marine-science-101>. We also have a free Ocean Literacy online course on our home page: <https://oceanclassrooms.com/> as well as a free portal with live ocean data from around the globe.

6-DAY EDUCATOR TRAINING WORKSHOP IN BERMUDA AT THE BERMUDA



INSTITUTE OF OCEAN SCIENCE (BIOS)

JUNE 20-25, 2016. This Educator Training Workshop offers middle and high school teachers, curriculum specialists, administrators, and informal educators the opportunity to learn how to plan and execute future educational field study courses for their students at BIOS. Between June 20-25, 2016, up to 12 participants will take part in this

educational workshop and explore themes for potential future visiting groups such as:

- Oceanography and Marine Science: including lab and STEM activities, coral reef exploration, and low tide collection of certain species.
- An introduction to cutting-edge Glider technology, and how these underwater robots can revolutionize ocean studies and student involvement in the classroom.
- [Island Ecology](#) and Geology: [Nonsuch Island](#) conservation of rare and threatened species (including the Cahow) and habitats.
- Bermuda and U.S. History: Colonization of [St George's](#), Revolutionary War, War of 1812, Civil War.
- Scientific Exploration Past and Present: [William Beebe](#), global climate initiative and AUV gliders.

During the 6-day workshop at BIOS, attendees will be provided with an overview of local attractions and the way in which these can be integrated into future educational experiences for students. Participants will explore Whalebone Bay, [Cooper's Island](#), and [Fort St. Catherine](#), and highlights such as Nonsuch Island, the beautiful North Rock Reef, the city of [Hamilton](#), and the [Bermuda Aquarium, Museum and Zoo](#). Participants will get to know local Bermudian terminology, get a unique perspective on the historic town of St George's, and learn more about the geography of Bermuda.

Enrolment for this educational workshop is limited to 12 participants, tuition fee is \$1085.

For further information please contact: Ed Argenta, BIOS educator:

edandpat74@comcast.net

- See more at: <http://www.bios.edu/education/educator-workshops-at-bios/>

Exploring Environmental Issues: Places We Live - a Project Learning Tree

workshop Friday, January 22, 2016 - 9:00am - 12:00pm

CT DEEP, 79 Elm St, Hartford, Connecticut For 9th - 12th grade educators; \$40.00

Use ArcGIS Online to bring your high school students into the forest and the forest into your classroom! Are you looking for activities in which your students apply cooperative learning, hands-on experiences, and relevant, real-world problem solving? Project Learning Tree (PLT) is a wonderful tool to address these and many other demands of today's classroom and the 21st century learner. Help your students gain the skills and knowledge to be active participants in shaping their community by connecting to the places they live. Workshop participants will learn how to use GIS technology to bridge the gap between indoor and outdoor classrooms. We will explore CT Environmental Conditions Online (CT ECO) to become familiar with some of the data layers and map services available and connect these map services in ArcGIS Online. **Registration deadline:**

1/19/2016 www.ctwoodlands.org/PLTJan2016

NGSS-JASON SAMPLER FOR GRADES 6-8 THURSDAY, APRIL 7, 2016

JASON Learning Now Offering Professional Development Focused on NGSS: JASON Learning's comprehensive professional development program is designed to provide educators with the tools and strategies to implement student-driven, in-depth scientific exploration and inquiry. Each workshop is designed to increase educators' comfort and expertise with providing rich, STEM-based experiences that address State Standards, Next Generation Science Standards, and Common Core. Teachers will put on their "student" hats while experiencing a variety of lab activities, video resources, and digital simulations and learning games, and "teacher hats" while discussing pedagogy, best practices in curriculum integration and implementation, and differentiation for a variety of learners. Workshops also include a tutorial and hands-on practice with navigating the JASON Learning website and understanding how to access resources best directed at their grade specific scope and sequence.

Location: LEARN, Old Lyme, CT
Time: 8:30am-3:30pm
Cost: \$25.00
Register:

<http://www.jason.org/training> or
<http://www.jason.org/roll-outs/ct-statewide> Questions?

Contact: amy@jason.org
Resilient Planet (Ecology / Life Sciences) Thursday, January 14, 2016 . Resilient Planet investigates the health of our environment and conservation strategies to protect our planet's ecosystems through the following areas: abiotic/ biotic factors; carbon cycle; food webs; invasive species; adaptations, population dynamics; predator-prey relationships; animal behavior; biodiversity; and conservation.

Climate: Seas of Change (Climate /Physical and Earth Sciences)
Wednesday, February 3, 2016 Climate Seas of Change investigates and analyzes the forces that shape and change climate with a focus on the following areas: oceanography; wind patterns and ocean currents; climate modifiers; climate zones; albedo and the greenhouse effect; modeling the future; and human impact and sustainability. This workshop will highlight NGSS focused lessons from a variety of JASON Curricula: Monster Storms (Weather/Earth Science); Tectonic Fury (Geology/Earth Science); Infinite Potential (Energy/Physical Science); and Terminal Velocity (Forces & Motion/Physical Science).
<http://www.jason.org/curriculum/> to access a more detailed overview of each curriculum.

SAVE THE DATES! CONNECTICUT SCIENCE SAFETY NETWORK CSSN 2015-16 WORKSHOP CALENDAR can be found at:

http://www.wesleyan.edu/greenstreet/professionaldev/science_safety/2015-16%20CSSN%202015-16%20Workshop%20Calendar.pdf



We're happy to announce that applications are now available for the 2016 MIT Science and Engineering Program for Teachers! This year, SEPT will be held during the week of June 21st: Sunday, June 26 - Saturday, July 2, 2016 program. **February 15th deadline.** SEPT is a week-long residential program offered each summer at the Massachusetts Institute of Technology since 1989.

Each year, we accept 25 outstanding educators from secondary schools worldwide who teach a range of subjects in science, technology, engineering, and math. The teachers who make the most of their week at MIT tend to:

- o Integrate technology in their classrooms - particularly technology that enables students to create; and
- o Demonstrate innovation in their teaching practice, and advancement through past professional development or other extracurricular experiences.

To apply, download and fill out the application from the SEPT webpage:

sept.mit.edu by February 15th, and return your completed form and essay to Avi Ornstein (ornstein@alum.mit.edu).

- Free to contact Avi Ornstein with questions. . Interested teachers should send their application to Avi Ornstein (ornstein@alum.mit.edu) rather than MIT, as the MIT Club of Hartford will be sponsoring one Connecticut teacher to attend.

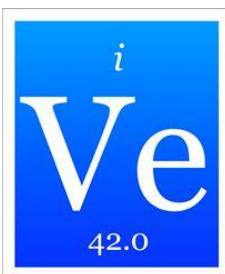


5th Annual STEM Forum & Expo, hosted by NSTA

Denver: July 27-29, 2016! The dynamic, 5th Annual STEM Forum & Expo hosted by NSTA, brings together educators and organizations who are actively implementing STEM programs in their schools or districts. Held in Denver next

July 27-29, come prepared to learn tactics that work, build your professional learning network, connect with effective outreach programs and partnerships, discover new resources, and build a strong curriculum. Keynote Speaker: Derek Muller, Australian-Canadian science communicator, filmmaker, and television presenter created the leading science YouTube channel, Veritasium, that features experiments, expert interviews, cool demos, and discussions with the public about "everything science." Join the over 2 million subscribers and see him in person at the Expo!

<https://www.youtube.com/user/1veritasium>



ETHNICALLY-DIVERSE

CONNECTICUT TEACHERS!

Enhance your environmental education methods and knowledge.

We are awarding SIX 80% Scholarships for summer 2016

WHAT: Sharing Nature: An Educators' Week Workshop **WHERE:**

Hog Island Audubon Camp,
Muscongus Bay, Maine

WHEN: JULY 17 - JULY 22, 2016

SCHOLARSHIP: \$900 towards \$1,095 registration fee (Price includes program, lodging, boat travel, all meals)

Features of Educators' Week:

- Designed for science and non-science educators to generate exciting ideas for creating and incorporating environmental education activities into your curriculum.
- Inspiring and experienced instructors will share their favorite approaches, methods, and activities for engaging you, and your students, with nature.
- Workshop presentations and guided field trips on the island share techniques in field biology, art, music, photography, theater, journaling, and other disciplines. Interactive workshop: "Increasing Diversity in Environmental Education" led by Chandra Taylor Smith, Ph.D. Vice President, Community Conservation and Education, National Audubon Society.

TO APPLY: E-mail letter of interest and names & contact info. of 2 professional references to

Camp Director Pete Salmansohn at psalmansohn@audubon.org.

Awards given on a rolling basis, so early application is strongly suggested. For details, photos, videos about the camp visit: hogisland.audubon.org.

 Audubon

LEADERSHIP AT SEA: PROFESSIONAL DEVELOPMENT FOR TEACHERS



Mystic Seaport and the schooner Victory Chimes are pleased to offer a special joint professional development program for teachers. This is a unique, multidisciplinary teaching and learning experience that is designed to share the resources available to teachers at Mystic Seaport, and to provide an extraordinary environment for learning and connecting

with others on board the schooner Victory Chimes, a national landmark vessel that represents our living heritage.

Hog Island Rainbow by Eric Snyder

This

program can accommodate up to 24 teachers. Participating teachers will also learn how they can involve their school in the upcoming Leadership at Sea program for students in 2016-2017.

Shore Component: August 2-4, 2016 at Mystic Seaport

Sea Component: August 18-22, 2016 on board the schooner Victory Chimes, sailing out of Rockland, ME.

Cost: \$1,295/person, includes room and board for entire program (if housing is not needed for shore component, subtract \$80)

Shore Component at Mystic Seaport (August 2-4, 2016), Mystic CT

Sea Component on board Victory Chimes (August 18-22, 2016), Rockland, ME

Registration Information

School-Year Professional Development Programs

Mystic Seaport for EducatorsMystic Seaport hosts free monthly professional development workshops that provide teachers with "behind-the-scenes" tours and thematic workshops that correlate the Museum's vast collections with classroom curriculum. Workshops show teachers how to utilize the Museum and its collections in their classrooms through active participation and interaction with experts, primary source documents, and exhibition objects. Topics range from immigration, whaling, and life at sea, navigation and nautical instruments to the Civil War and World War II. Each session will also highlight our website for teachers.

RESOURCES:

Free, Online Access to JASON Learning's Award-Winning Programs Available to Public School Educators in CT. Through generous support from the Connecticut Department of Economic and Community Development, JASON Learning is providing complimentary access to JASON's gated website to all public school educators in CT through August of 2017. Each comprehensive JASON program highlights a diverse group of STEM role models, their research and real-world phenomena to engage students and motivate deeper interest in learning. JASON's online platform includes reading selections, hands-on labs and field assignments, videos, digital simulations and learning games for students; and lesson plans, implementation tips, and a powerful classroom management tool for educators. Live, interactive events throughout the year connect JASON participants with inspirational STEM role models. Educators will have access to a host of downloadable resources from all 7 JASON Learning curricula. Sign-up today by visiting www.jason.org : Login to JASON Mission Center and Register New Teacher Account!

This is a copy of a blog from Tom Jenkins:

<https://www.teachingchannel.org/>

November 20, 2015 9:00 am Tom Jenkins. I've just returned from a trip to our nation's capital, where I was with Seattle educator Jessica Levine working on a new Tch initiative. The initiative, in partnership with several highly respected science and professional development organizations — NSTA, Achieve, Making Sense of Science, American Museum of Natural History — centers around the Next Generation Science Standards (NGSS). The idea is to pull together video resources to help teachers navigate the shift to 21st century standards. Why share this now if the project is still at the formative stages? Because we need your input. Teaching Channel has made, and continues to make, a significant investment in many different aspects of science teaching practice. Just one click away are 140 science videos covering a variety of topics (including my own, To the Moon!). And recently, Teaching Channel released four videos that show two teachers as they begin — and continue — to move their practice towards helping their students meet the goals of NGSS. Teaching Channel has also partnered with The Boeing Company to create two-week units of instruction that provide a pathway towards greater understanding and implementation of NGSS. These units were created by classroom teachers working collaboratively with Boeing engineers to not only address the standards, but to inspire our students. Four units were launched earlier this fall, including Jessica's Polymers for the Planet. Five more units have been added since then — two of which, Bio Suits and Soft Landing, include videos demonstrating classroom practice. Check out the Boeing landing page to see all nine units. They'll make a

wonderful addition to your classroom library, and we hope they'll inspire your practice. Apart from these new videos and curriculum units, Tch has published 90 blog posts and over 265 "Q & A" threads where scientific resources and the art of teaching science are being discussed by our community. We have over 171,000 registered members that are interested in science topics. If you're not yet one of them, then please join us (edit your profile and check the Science box under Educational Interests). If you're already onboard, then please jump in and ask questions or contribute to the community. Help us get better together! Teachers are always talking about the dearth of resources that are compatible with the needs of today's classroom, and the shift towards NGSS standards. Here they are, and here they will be. Please join Jessica and me as we work together to build an online community. Explore the previously mentioned resources to orient yourself to what's available at Tch. Then, please take a moment to provide feedback below on what you would like your Tch science community to look like!

Tom Jenkins teaches both middle school science and STEM in Enon, Ohio. He is a NASA SOFIA Airborne Astronomy Ambassador, Manager of Special Projects at the Dayton Regional STEM Center, as well as the Boeing Science Teacher Laureate for Teaching Channel. Connect with Tom via Twitter: @TomJenkinsSTEM. Jessica C. Levine is an experiential educator, systems thinker, and curriculum designer. She teaches middle school science content through a sustainable context in Seattle. Jessica is a National Board Certified Teacher and a recipient of the Amgen Award for Science Teaching Excellence.

WORRIED ABOUT TEACHING THE ENGINEERING PARTS OF THE NGSS?

A new website from the National Academy of Engineering provides opportunities for connecting with educators who model engineering instruction and background information on engineering design. Go to www.linkengineering.org Dear Participant in EECapacity Professional Development, EECapacity, Cornell University, and other collaborators are offering a new online course called Environmental Education: Trans-disciplinary approaches to addressing wicked problems. As a participant in this course, you will have access to short lectures, readings, and multi-media resources contributed by over 40 US and global experts in environmental education and related environmental fields. And you will join an online community of environmental professionals from over 80 countries.

Dates: February 1 – April 24, 2016 for 12-week Expert Certificate; February 1 – March 11, 2016 for five-week Achievement Certificate.

Cost: Free to participants who earn a Cornell University certificate of completion. For students wanting to earn undergraduate or graduate credits, University of Wisconsin-Stevens Point is offering the course for a fee.

Course Goal: Participants gain the understanding, skills, and professional networks to work as environmental education professionals in concert with other disciplines and sectors to address environmental, sustainability, and conservation issues.

We encourage you to sign up with colleagues and form local or online groups to discuss the course materials and work together on the course project.

For more information including registration, course prospectus, list of instructors, and information about taking the course as a local or online interest group, go to: www.GlobalEE.net To begin meeting instructors and participants, join us on the course Facebook group: <https://www.facebook.com/groups/GlobalEE/>.

We look forward to your participation!

<http://www.GlobalEE.net>

A Winter of Webinars

Green Teacher's upcoming webinars are an interactive way for educators to continue learning about key environmental topics. Our professional development webinar series features some of the most important thinkers in the field of environmental education addressing vital and relevant topics.

We have five webinars scheduled in the coming months. Registration is FREE and one can obtain a certificate upon completion. Learn more about each one and sign up now at <http://greenteacher.com/webinars/> to ensure you don't miss out on any of the following:

Addressing Aquatic Invasive Species
Presenters: Bob Thomson and Brook Schryer, Tuesday, February 2 2015
7:30-8:30pm EST

Tackling aquatic invasives species (AIS) presents special challenges for educators. Bob Thomson uses inquiry methods with a place-based format to ensure that students are participants in the educational process. AIS allows his students to develop their informational reading skills on a subject that they can research and create informational essays and presentation that they can use to inform the community on ways to prevent the spread of AIS. They also do research projects focused on understanding the impact of invasive species impact, in cooperation with local agencies.

Brook Schryer will introduce the Grades 4 & 6 curriculum units developed by the Invading Species Awareness Program of the Ontario Federation of Anglers and Hunters.

Collecting Field Data on Local Birds with Elementary Students,
Presenters: Renee Bachman and Ted Watt Thursday, February 4 2015
7:30-8:30pm EST

Birds provide a ready access for elementary level students to a variety of life science content areas. Science practices such as bird observation skills, visual and

auditory, field data collection and analysis skills, and student presentation techniques for the wider community are but some of the options that will be explored in this webinar. The presenters planned and carried out a nesting bird survey with 5th Graders in Western Massachusetts as part to Cornell's Birds in Forested Landscape program. While teaching in Phoenix, Renee and her students collected data for the Central Arizona & Phoenix Long Term Environmental Research Project. Ted has taught bird identification in informal settings for over thirty years. In this Webinar Ted and Renee will describe their projects, including how Cornell University's Ebird can be utilized in the classroom. Outdoor bird study with students, aligned with NGSS practices, is tons of fun!

Remote Cameras in Environmental Education, Presenters: Ryan Pennesi and Dawn Tanner, Wednesday, February 10 2015 7:30-8:30pm EST

Young people do not realize there are so many interesting things that they can learn about animals in their own schoolyard and neighborhood. Using remote cameras helps teachers to increase technology learning in their classrooms and brings students outside to create meaningful connections. Whether you think small scale at what your students will learn about the animals that share their space when they are absent or you choose to connect with local scientists, setting up trail cameras will give you a window into the wild. Join Ryan and Dawn in discussion as they address choosing the best locations to place the cameras, how to set them up and what can be done both inside and outside of the classroom with the resulting images and data.

Subscribe to Green Teacher at <http://greenteacher.com/subscribe/> and gain access to 55+ webinars and 300+ articles and activities, all cataloged according to 28 topics and various age groups. 1-year print \$34 or 1-year digital \$27.50
Tim Grant, Editor, Green Teacher, 28 Lennox Street #8, Toronto, ON M6G 1J4
416-960-1244, tim@greenteacher.com, US mailing address: Green Teacher, PO Box 452, Niagara Falls NY 14304

YOUR STUDENTS CAN STILL PARTICIPATE IN REMAINING SESSIONS!

PROGRAMS FOR STUDENTS: Looking for a marine biologist mentor to fulfill a school job shadow requirement or help answer your marine biology questions? The Marine Biology Mentor Series is specially designed to fulfill this program need. Facilitated by a member of the Education & Conservation team, each program will highlight different marine biology and aquarium careers, offer an opportunity to talk with Aquarium staff and peek behind the scenes. Program registration includes all four programs but registered students can attend as many of the series programs needed in order to complete their project requirements.

Tuesday, December 29; 9:00am-2:00pm – Intro to Aquarium careers and tour
Saturday, January 9; 9:00am-2:00pm – Animal Rescue, Research, Veterinary Services

Saturday, February 13; 9:00am-2:00pm – Fish & Invertebrates and Animal Care
Saturday, March 12; 9:00am-2:00pm – Conservation, Education and Communications

Ages: 14 - 17

Program Cost: Members \$50 for the series; Non-members \$60 for the series
Space is limited so click here to register today!

UConn's Natural Resources Conservation Academy (NRCA)

(nrca.uconn.edu). UConn's NRCA is an exciting program that engages high school students (grades 9 to 11) in natural resource conservation in their local community that is meaningful for the student, complementary to existing science curriculum, and beneficial to our communities and environment. First, students attend a week-long field experience at UConn in July. Afterwards, each student conducts a conservation project under the mentorship of a local conservation leader. Projects culminate in March, when students present their work at the Connecticut Conference on Natural Resources and graduate as "Connecticut Conservation Ambassadors."

To date, we have worked with 92 students and 51 community partners on 74 conservation projects. It has been an enriching experience for both students, their partners, and their communities. This year we will be inviting teachers with students attending our program to participate in one of the field experience days as well. If you are interested in sharing this experience with your students, I would love to give a brief presentation (5-8 minutes) and answer questions. If time permits, I can also share a brief activity that we conduct during the NRCA field experience. Please feel free to contact me via email (laura.cisneros@uconn.edu) or phone (860-486-4917) to discuss the NRCA further. I have also linked three informational documents on our program (i.e. a brochure for students, a NRCA overview document, and a NRCA success stories document for teachers/partners). I look forward to hearing from you! Laura Cisneros Assistant Extension Educator and NRCA Program Coordinator

Natural Resources Conservation Academy Dept. of Natural Resources and the Environment
University of Connecticut
1376 Storrs Road
Storrs, CT 06269-4087
Phone: 860-486-4917
Fax: 860-486-5408

A Way to Integrate Science with Language Arts!

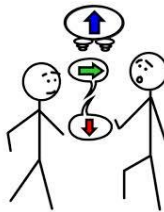
WANTED: "High-Tech Pen Pals" Fifth grade classes near Albuquerque, New Mexico, are looking for partners to exchange information about watersheds, rivers, stormwater, and other water resources topics!



RiverXchange is a FREE year-long program focused on communication between classes around the world about water resources issues. Our hands-on lessons can be used for reference, to enhance your existing curriculum, or as a complete program that explores rivers, watersheds, stormwater, municipal water supplies, ecology, and conservation.



Students communicate 4 times throughout the school year on a private website. We provide training and support to ensure a successful experience. Through writing and creative sharing about rivers, we integrate science with language arts, social studies, and 21st-Century learning skills, all correlated to Common Core Language Arts Standards! Check out the public website, www.RiverXchange.com, for more information and to access the registration form. They'd love to hear from you if you have any questions about the program.



A Science Argumentation rubric has been developed by Mary Lou Smith and her colleagues. If anyone tries it out, they would really like to get some feedback! To get a copy, you can request one by email from Eloise Farmer at eloisef302@gmail.com



From Donna Ellis at UConn: "IPM curriculum kits are now available to any teachers or other educators who could use them in their classes, at no cost as long as the teachers can pick them up at UConn. We still have quite a few curriculum kits available. Teachers can view the curriculum and the excellent curriculum alignments completed by Mary Lou Smith on the UConn IPM website at http://www.ipm.uconn.edu/pa_curriculum/. I am available to conduct workshops or other curriculum training by request if any teachers are interested." To schedule a pickup of kits please contact Donna Ellis at donna.ellis@uconn.edu.

www.CLEANet.org has more than 640 units, lessons, videos, and diagrams that have been rigorously reviewed by both scientists and teachers. While their focus is on Middle and High school, there are some middle school activities that would be appropriate for both. There may also be some resources on the k12 portal of the SERC website: <http://serc.carleton.edu/k12/index.html>

STEM PROGRAM AT CENTRAL CONNECTICUT STATE UNIVERSITY!

The MS in STEM Education for Certified Teachers will prepare certified teachers in the trans-disciplinary areas of Science, Technology, Engineering and Mathematics (STEM). Courses are aligned with National and/or CT state content standards in each discipline: Science, Technology, Engineering, and Math, and the Common Core for Mathematics and Language Arts. Does not lead to CT state teacher certification or cross-endorsement

<http://ccsu.smartcatalogiq.com/current/Undergraduate-Graduate-Catalog/Masters-Degree-Programs/STEM-Education-for-Certified-Teachers-M-S> . For further information, contact Marsha Bednarski at: bednarskim@ccsu.edu

WE ARE LOOKING FOR RETIRED SCIENCE CONTENT SPECIALISTS

willing to support K-6 science teachers on our free website at <http://justaskateacher.com> . Our project asks the science content specialist to (1) first view a video of a K-6 science lesson, (2) then meet with the teacher online to discuss the science content, and (3) finally, allow us to post the video of the session with the teacher so that other K-6 teachers can benefit. Interested? Please let us know.

Charles Matthews
Academic Research Scientist
University of Missouri at St. Louis
Email to schedule Skype or PolyCom Session matthewscc@umsl.edu
Skype: dr.charles.c.matthews
PolyCom IP Address 98.172.76.67

IF YOU TEACH COURSES WITH CHEMISTRY OR PHYSICS CONTENT, WE NEED YOUR EXPERTISE.

Currently, our website shares 30 K-6 lessons with physics content and 32 K-6 lessons with chemistry content. In anticipation of increased numbers of K-6 teachers sharing lessons in 2015-16, we would like to have more physical science content specialists who would consider viewing a video of a K-6 lesson, meeting online with the teacher who taught the lesson to discuss the lesson's science content, and then sharing the recorded discussion on our website for the benefit of K-6 teachers nationwide. (We make all our video recordings at-a-distance).

Meanwhile, you can get our Summer 2015 Newsletter, share it, and give us your ideas. Our Summer Newsletter focuses on the past, present, and future of the "Teachers Helping Teachers Teach Inquiry Science: Just ASK" project and invites suggestions and questions.

Teachers currently sharing their adapted science inquiry lessons always appreciate comments and suggestions.

Charles Matthews, Academic Research Scientist, University of Missouri at St. Louis. Email to schedule Skype or PolyCom Session, matthewscc@umsl.edu
Skype: dr.charles.c.matthews PolyCom IP Address 98.172.76.

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.

AN IMPORTANT LINK FOR EDUCATORS TO VISIT FOR INFORMATION ON THE STATUS OF SCIENCE STANDARDS IN CONNECTICUT:

<http://www.sde.ct.gov/sde/cwp/view.asp?a=2683&Q=333862>

Get the latest on the Connecticut Science Center at:

<https://www.ctsciencecenter.org/education/stem2015/>

INTERESTING INFORMATION and BASIS FOR A DISCUSSION AND ANALYSIS IN CLASS THIS WINTER! SEE Following page!



**CONNECTICUT
ACADEMY OF
SCIENCE AND
ENGINEERING**

NEWS RELEASE CONNECTICUT ACADEMY OF SCIENCE AND ENGINEERING, The 2015 CASE Winter Bulletin is now available. In this issue:

- CTDOT Relies on State-of-the-Art Tools to Keep Traffic Moving in Winter Weather
 - New England Air Museum Continues to Soar
 - News from the National Academies:
- o The Employability Divide: Transforming US Education to Create Lifelong Learners
 - o Optimizing US Investment in Academic Research
 - o Water-Energy Nexus Critical to Economic Security
 - o Getting It Right: Improving Diagnosis in Healthcare
- In Briefs: Science and Technology News from Around the State
 - Connecticut Scientists Elected to the National Academies in 2015— The Connecticut Academy of Science and Engineering (CASE) conducted a study entitled Winter Highway Maintenance Operations: Connecticut, on behalf of the Connecticut Department of Transportation (CTDOT). The study was conducted in response to Section 6 of Public Act 14-199 that directed the Commissioner of Transportation to conduct an analysis of the corrosive effects of chemical road treatments on 1) state snow and ice equipment vehicles, 2) state bridges, highways and other infrastructure, and 3) the environment; The analysis shall determine the cost of corrosion created by road treatments, and shall include an evaluation of alternative techniques and products, such as, but not limited to, rust inhibitors, with a comparison of cost and effectiveness.
- The study found that chloride-based deicing chemicals should be expected to be the standard for the foreseeable future and CTDOT should continue to use sodium chloride as the primary deicing chemical. Furthermore, although corrosion inhibitors are available for use with deicers, literature reviewed did not find evidence of their effectiveness in the field. It is important to note that vehicle washing is the best defense to reduce/prevent corrosion and the public should be educated on the need to wash vehicles, including the undercarriage.
- The study concluded that ensuring the safety and mobility of the traveling public requires the most effective winter highway maintenance practices possible. Accomplishing this is a shared responsibility among stakeholders. To achieve comprehensive and sustainable success competing factors must be considered including: safety, cost, corrosion, operating practices, materials and equipment, environmental and economic impacts, and communication with the general public, stakeholders, and government leaders. Balancing these factors presents a challenge that can be met through ongoing monitoring and continuous improvement based on evolving best practices. Also, it was noted that CTDOT engages in an ongoing process of monitoring current practices, identifying areas for improvement, and instituting improvements based on best practices. Further, analysis of winter season injury crash data showed that CTDOT's anti-icing strategy the reduced number of injury crashes during winter weather events.
- The report includes recommendations for consideration by CTDOT and Connecticut's municipalities related to deicing chemicals and application techniques, infrastructure, vehicles, the environment, and outreach and education.

The Full Report, Executive Summary, and Briefing PowerPoint are available on the CASE website (www.ctcase.org). Scroll down to Reports and Studies.

The Connecticut Academy of Science and Engineering was chartered by the Connecticut General Assembly in 1976 to provide expert guidance on science and technology to the people and to the state of Connecticut, and to promote the application of science and technology to human welfare and economic well-being. For more information about the Academy, please see www.ctcase.org

WANT TO GO TO THE AMAZON? : Deadline for PD scholarships for K-12 Educator Academy in the Amazon

Educator Academy in the Amazon Rainforest + Machu Picchu

The July 1-11, 2016 Educator Academy in the Amazon Rainforest of Peru is a cross-curricular professional development workshop for K-12 formal and informal educators to learn and use:

- 21st Century Instruction: 5E Lesson Design ~ Inquiry-Based Exploration ~ STEM
- Inquiry Protocols & Resources: Project Learning Tree ~ Cornell Lab of Ornithology ~ & More!
- Global and Cultural Perspectives: Service Learning ~ Sustainability ~ Global Education

Join Al Stenstrup, Project Learning Tree; Nancy Trautmann, Cornell Lab of Ornithology; Christa Dillabaugh, Amazon Rainforest Workshops; and Dr. David Pearson, Wildlife Travellers' Guide to Peru; and work side-by-side with scientists Dr. Steve Madigosky, Widener University; and Randy Morgan, Curator/Entomologist, Cincinnati Zoo as you:

- Participate in citizen science projects and inquiry based field studies on a 1/4-mile Rainforest Canopy Walkway in one of the most biologically diverse environments on the planet.
- Spend a day in an Amazon village as you explore the complexities of sustainability and the role of education in creating a sustainable future for Amazon children.
- Work with fellow educators to explore strategies for using the Amazon as a vehicle for incorporating STEM education, inquiry-based learning, and sustainability science education into your classroom.

PLT Certification, BirdSleuth resources and 50 ASU PD Hours included. Academic Credit and Machu Picchu Extension optional. \$1000 scholarship deadline February 1st, 2016. Program cost is \$1375 + air for scholarship recipients. Space is limited! Register early to secure your spot!

Get the details and download a syllabus and scholarship application at: <http://www.amazonworkshops.com/educator-academy.html>

Contact christa@amazonworkshops.com or 1-800-431-2624 for more information.

Founded in 2007, Global Exploration for Educators Organization (GEEO) is a 501c3 non-profit organization that has sent over 1300 teachers abroad on adventurous travel programs. With GEEO educators can earn professional development credits while seeing the world. GEEO's trips are 7 to 21 days in length and are designed and discounted to be interesting and affordable for teachers. In addition to amazing tour leaders, many of the programs are accompanied by university faculty that are experts on the destination. GEEO also provides teachers educational materials and the structure to help them bring their experiences into the classroom. The trips are open to all nationalities of K-12 and university educators, administrators, retired educators, as well as educators' guests.

GEEO is offering the following travel programs for 2016: Bali/Lombok, Bangkok to Hanoi, China, Costa Rica, Eastern Europe, The Galapagos Islands, Greece, Iceland, India/Nepal, Ireland, Israel, Italy, Jamaica, Morocco, Myanmar (Burma), Peruvian Amazon, Peruvian Andes, Portugal/Spain, Heart of the Silk Road, Southern Africa, Southern India, Sri Lanka, Turkey, Vietnam/Cambodia, Western Balkans, Peru (Winter Break), Israel (Spring Break), Moorish Spain (Spring Break), and Morocco (Spring Break). The registration deadline is June 1st, but space is limited and many programs will be full well before the deadline.

Detailed information about each trip, including itineraries, costs, travel dates, and more can be found at www.geeo.org. GEEO can be reached 7 days a week, toll-free at 1-877-600-0105 between 9 AM-9 PM EST.

ARE YOU FAMILIAR WITH UCAR? One of the best resources having to do with Atmospheric Research. They provide K-12 educational resources and teacher professional development around atmospheric sciences. Web content, videos, games, simulations, and lessons on weather and climate. Visit <http://bit.ly/1JvhpDC>

Another great site is the GeoMentors Program. It offers a digital mapping and data analysis program call ArcGIS Online, and can be incorporated into any grade level. Investigate by going to:

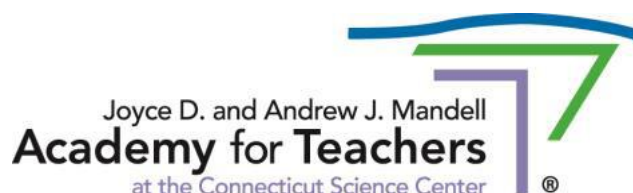
<http://edcommunity.esri.com/Resources/Collections/geoinquiries>

The Connecticut State Department of Education and the Connecticut Science Center Partner to Launch First Offerings in a Next Generation Science Professional Learning System
A Web-Based Introduction to Next Generation Science
Made with CT educators, for CT educators

Next-Gen Science CT is a free, online, self-paced short course that provides K-12 educators with a comprehensive starting point for understanding A Framework for K-12 Science Education and the Next Generation Science Standards. This modular overview course will eventually consist of 15 modules, a total of 20 to 60 hours of professional learning, depending on how deeply PLCs engage with the "Think & Discuss" prompts.

Each module focuses on a specific aspect of Next Generation Science teaching and learning, engaging educators in guided reflection, classroom application, and transition planning. The Moodle-based platform provides opportunities for course takers from across the state to engage in discussion and share ideas and resources.

For the best results, schools and districts are encouraged to form Professional Learning Communities (PLCs) and identify individuals who can be effective facilitators (NGSS expertise is not required). An online matchmaking forum is available for educators seeking to join a "virtual" PLC. Successfully completing all modules will confer an emailed certificate of completion and an electronic badge.



Best for: Teachers of science, teachers of other subjects, school administrators, families, paraprofessionals, special educators and others with an interest in Next Generation science.

Cost: None

Learning hours: 20 to 60

Format: In-person and virtual study groups using web-based professional learning modules

Facilitation: District-selected facilitator(s)

For details and registration, visit the course website at <http://ngss.ccat.us>.

Questions? Contact Nick Balisciano at nbalisciano@ccat.us

REGISTRATION OPENS NOVEMBER 2, 2015

Transforming science teaching and learning through reasoning, modeling and communicating explanations of phenomena.

NGSX is a blended professional learning system designed to help teams of K-12 science educators apply the pedagogical shifts described in the Framework for K-12 Science Education and the Next Generation Science Standards to their own teaching. NGSX brings the expertise of Framework developers, experts in teacher learning, and expert professional development facilitators to science educators across Connecticut.

NGSX is organized into learning pathways structured to immerse participants – as learners and as teachers -- in 3-Dimensional learning using a web-based system of tasks, tools and resources. The NGSX experience combines first-hand science investigations, videotaped expert commentary and classroom case studies along with facilitated individual, small group and whole group discussions.

In a collegial, seminar-like environment, NGSX participants will engage in modeling and constructing explanations of complex phenomena, hallmarks of Next Generation Science. They will also learn to use questioning strategies, or “talk moves”, to create a classroom culture in which students explain their thinking, listen to and build on the ideas of others and function as a community of critical thinkers. To learn more about the NGSX experience, [click here](#).

Best for: Teachers of science, district science leaders, STEM coaches, teachers of other subjects, informal science educators, and university faculty

Cost: \$1,500 per teacher (estimated)

Learning hours: 30 to 40 hours; typically scheduled in 2-day sessions spread over 2 to 3 months

Format: In-person facilitated study groups using a web-based professional learning program and firsthand experiences

Facilitation: Expert-facilitated by certified learning leaders

Questions? Contact Cheryl Tokarski at ctokarski@ctsciencecenter.org

To learn more about the NGSX experience, [click here](#).

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COMING

JANUARY 2016

Coming Soon: A schedule of regional NGSX study group dates and locations, along with a registration form for 2016 winter, spring and summer sessions. Start recruiting your school's team now!

Minimum 2 educators, maximum 20 educators per school.

ANOTHER ASPIRING TEACHER NEEDS HELP!

I am seeking individuals who would be willing to participate in my doctoral dissertation study. I am

exploring the science-focused study experiences of pre-service or in-service teachers, and how these individuals use their study abroad experiences in their classrooms. If you have participated in a science-focused study abroad, are the teacher of record in your classroom, and are interested in participating, please e-mail me at my university e-mail address below.

Thank you for your time, Stephanie Medina, Doctoral Candidate, Educational Leadership, Curriculum, and Instruction
Texas A&M University - Corpus Christi,
stephanie.medina@tamucc.edu
NSTA Member

<https://www.nasa.gov/audience/foreducators/index.html>

HOW TO RECEIVE THIS NEWSLETTER BY BECOMING A POINT OF CONTACT.

We welcome new recipients to NSTA's Science Matters network! Please click on: <http://bap.nsta.org/> and sign up! You will receive information from NSTA and get this State newsletter each month. You can also email me at eloisef302@gmail.com so that I make sure you are on our mailing list. NSTA sends our newsletter to all the recipients on our State list of Points of Contact. Please join us!

NEW MATERIALS AND PROJECTS FROM NASA!



JOB OPPORTUNITIES!

NEW ENGLAND SCIENCE & SAILING

Ocean Minded Adventure Education

New England Science & Sailing (NESS) is looking for teachers who are interested in working part-time or full-time over the summer. Are you interested in learning more about the ocean and doing while getting paid!? NESS instructors get kids excited about science and implement an active, hands-on, minds-on experientially-oriented marine science based program including kayaking, snorkeling, surfing, stand-up paddle boarding, body boarding, and fishing.

Positions Available:

- Little Aquanauts Instructors (ages 4 – 5)
- Bay Bounders Instructors (ages 6 – 7)
- Westerly Ocean Adventures Program (ages 6 – 9 & 10 – 13)

Please email Mistral Dodson – mdodson@nessf.org – if you are interested in more information.

Mistral Dodson

Marine Science & Adventure Sports Program Director

Stonington | New London | Westerly

860.535.9362

www.nessf.org

NESS is an Affirmative Action/Equal Opportunity Employer

The Center for Science and the Schools (CSATS) at The Pennsylvania State University is hiring a STEM Education Outreach Specialist. Details are below, and the full announcement can be viewed at: <https://psu.jobs/job/61201>.

Applicants should submit a letter of application describing their qualifications for the position, current curriculum vitae, university transcripts, and at least three professional references (names, mail and e-mail addresses, and telephone numbers).

The Center for Science and the Schools (CSATS) seeks to hire a STEM Education Outreach Specialist. This is a fixed-term, 36-week appointment at the Research Assistant or Associate level. Salary is commensurate with education and experience; full University benefits apply.

CSATS seeks an individual who will design and implement STEM outreach activities and support research and internal evaluation efforts examining aspects of CSATS-related outreach and professional development projects. The candidate will work closely with the CSATS Director to collaborate with scientists and engineers on design and implementation of teacher professional development opportunities and classroom science activities as well as design of evaluation programs. This position offers opportunities to contribute to the development of high quality programs in science education. Primary responsibilities include: assisting Penn State science and engineering faculty in designing and implementing STEM education outreach to support teachers' learning of cutting-edge research (funded by STEM research grants); engage in design, management, implementation, and evaluation of Center outreach activities such as curriculum development, teacher professional development, and K-12

science outreach activities; identify internal evaluation criteria for projects and develop data collection instruments; collaboratively plan research related to CSATS projects and write IRB proposals; (collect data for research projects and participate in data analysis; develop and maintain an annotated digital library of science education research and evaluation literature relevant to ongoing CSATS projects; support existing and future CSATS projects as needed; and, contribute to developing ways to translate research related to science and science education into the school context.

Required qualifications includes a Master's degree in education, preferably in STEM education, educational leadership, educational policy, or a closely related field; at least three years of formal or informal K-12 science teaching experience, preferably at the elementary level; outstanding interpersonal skills and ability to work in teams; advanced technology skills in Microsoft Office.

Preferred qualifications include a Doctoral degree in education (science education preferred) with a Bachelor's degree in a STEM discipline or with an emphasis in a STEM discipline; strong evidence of project management experience in a relevant educational setting; experience in advanced educational technology strategies; experience in educational research including data collection and analysis, both qualitative and quantitative; and demonstrated academic writing skills.

Happy Holidays and have a wonderful New Year!

Amanda J. Smith, M. Ed
STEM Outreach & Engagement Liaison, Center for Science and the Schools
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University Park, PA 16802
Phone: 814-867-3183 fax: 814-865-8067
ajs398@psu.edu <http://csats.psu.edu>

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.