CONNECTICUT SCIENCE CONNECTION

January 2015

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

State Coordinator.David Lopath lopath@comcast.net
List Moderator..Eloise Farmer eloisef302@gmail.com

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

Resources

CSDE's science curriculum web site.
More on Standards at:
http://www.nextgenscience.org/

EQuIP Rubric for Science Released!
The Educators Evaluating the Quality of Instructional Products (EQuIP) Rubric for Lessons & Units: Science provides criteria with respect to the NGSS.

To get all the latest happenings at the Connecticut Science Center, click on the link to its newsletter.
www.**ctsciencecenter**.org/**newsletter/**

Visit the NGSS@NSTA Hub :
The NGSS@NSTA Hub now offers a dynamic version of the *Next Generation Science Standards*.. Accompanying each standard are student performance expectations, and the corresponding science and engineering practices, disciplinary core ideas, Connections to Common Core *Standards*! We know that time is one of the biggest challenges for science teachers... We hear that again and again from teachers around the country. And they tell us they need resources that are quick and easy to access. We heard you and are pleased to release a series of by our in-house NGSS guru Ted Willard!
http://nstacommunities.org/blog/2014/11/10/new-from-nsta-quick-reference-guides-to-the-next-generation-science-standards/

OPPORTUNITIES FOR TEACHERS:

Workshops at Project LEARN
Terminal Velocity: Forces and Motion Unit
Incorporate NGSS Science & Engineering Practices with JASON Learning
January 30, 2015, 8:30am - 3:30pm
LEARN, 44 Hatchetts Hill Road, Old Lyme, CT 06371
Register Today!
Registration fee: $25.00

Tectonic Fury: Geology Unit
Incorporate NGSS Science & Engineering Practices with JASON Learning
March 26, 2015, 8:30am - 3:30pm
LEARN, 44 Hatchetts Hill Road, Old Lyme, CT 06371
Register Today!
Registration Fee: $25.00

You are welcome to attend one or both workshops. These workshops offer an opportunity for educators to gain hands-on practice with labs and digital resources, and participate in science standards discourse.

Educators will have access to a host of downloadable resources from all 6 JASON Learning curricula and will understand how to access and use then with students after participation.
https://gallery.mailchimp.com/a8e8fe4bb836787077844ed29/files/JASON_Learning_LEARN_wrkshp_flyer_2014_5.pdf
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The next session of Seminars on Science, the American Museum of Natural History's online professional learning program for educators begins **January 26th**. Graduate credit is available. Enroll now at http://www.amnh.org/learn/ .

The six-week online courses co-taught by experienced scientists and educators include The Brain, Earth: Inside and Out, Space, Time and Motion and many more. Get access to cutting-edge research, rich content, and powerful classroom resources.

Sign up today and receive $50 off your registration cost! Use code **SCIENCEMATTERS**.

For more information about the program, check out Seminars on Science at http://www.amnh.org/learn/ . If you have any questions, send us an email at learn@amnh.org , or call us at 800-649-6715.
Regards, The Seminars on Science Team
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Bitten! Climate Change and Insect-Borne Disease Investigations
Yale Peabody Museum of Natural History **DEADLINE: March 31, 2015** ! Each year scientists

discover two new mosquito-transmitted viruses worldwide that infect humans. Mosquitoes and pathogens can expand their ranges due to global trade, human travel, and warming climates. Dengue ("breakbone fever") cases occur regularly in Florida and Texas. Chikungunya ("that which contorts") – a virus endemic in Africa and Asia – first emerged in the Western Hemisphere last winter, spread rapidly through the Caribbean and surfaced in southern states. The same mosquito species - *Aedes aeqypti* and *Aedes albopictus* (Asian tiger mosquito) - transmit both diseases.

We invite grade 7-12 science educators to teach standards-based STEM curriculum mini-units in the classroom. Yale Peabody Museum and Connecticut teachers designed modular units about climate's effect on the spread of emerging insect-borne diseases such as dengue fever, West Nile virus, chikungunya and malaria. *How does an infectious disease establish itself in a new environment? Does climate change play a role? Could chikungunya be the next major insect-borne disease epidemic in the US?*

Lessons address middle and high school life science standards:

- experimental design
- structure and function; size and scale
- microorganisms; immune system and infectious diseases
- ecosystem change; ecology and population dynamics

Benefits for teachers : ***(NOTE Track 1 vs. Track 2 levels of participation)***

- FREE 3-day Summer Institute: July 8-10, 2015
- FREE science kit and standards-based curriculum mini-units
- Peabody Museum family membership with free admission to 280 science museums
- 26 hours credit toward state-mandated professional development requirement
- **TRACK 1:** $300 stipend after teaching and assessing entire mini-units in your classroom
  - Required ½ day weekend follow up workshop in Fall 2015
  - Ongoing classroom support from museum educators
  - One FREE class visit to the Peabody or the CT Agricultural Experiment Station mosquito lab
- **OR TRACK 2:** $100 stipend after teaching 5 selected lessons and providing on-line feedback

This program is funded by a *Science Education Partnership Award* (SEPA) from the National Institutes of Health. SEPA projects immerse students in science practices; increase science literacy and numeracy; and encourage biomedical careers and partnerships between scientists and educators. **To apply, visit http://peabody.yale.edu/climate-summer (deadline: March 31, 2015).**



LEARN MORE ABOUT OUR NEW GRADUATE EDUCATION PROGRAMS AT SACRED HEART UNIVERSITY

Want to diversify your career options while concurrently filling a need? The Farrington College of Education at Sacred Heart University is proud to announce the offering of a new graduate program launching in Summer 2015. Introducing the Comprehensive Special Education , K-12 (165) cross endorsement graduate program for certified teachers.

As Connecticut has maintained a shortage of special education teachers for the past decade due to the lack of qualified professionals, the latest Special Education program serves to modify the problem by equipping in-demand, marketable educators. At SHU, certified Connecticut public school teachers would be eligible to partake in the 30- to 33-credit, four-semester Special Education program that prepares educators to effectively implement evidenced-based practices and procedures in identification of students with disabilities, meet the diverse needs of students and partner with parents and professionals to help students progress. From working in a classroom, one-on-one or at student's home, the field provides a diverse population and setting to meet the needs of children who deserve a quality education.

Tara Chudy, Director of Graduate Admissions, Sacred Heart University
P: 203.365.4735,
Sacred Heart University , 5151 Park Avenue, Fairfield, CT, 06825

Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST). NOMINATE A GRADE 7-12 TEACHER OF SCIENCE, MATHEMATICS or COMPUTER SCIENCE. There are outstanding science and mathematics teachers in every school system throughout Connecticut, including charters, magnets and independent schools. Eligible teachers must have completed 5 years of K-12 teaching prior to this year and currently be teaching science (including computer science) or mathematics in Grades 7-12. NOMINATE NOW at www.paemst.org (click on "Nominate a Teacher"). Anyone may nominate – principals, colleagues, parents, students or members of the general public. Qualified teachers may also self-nominate.

PAEMST recognizes teachers who incorporate innovation and creativity in their classroom teaching, make significant contributions to curriculum development, and demonstrate leadership within the education community. You may nominate several teachers whose work you know well, even if they do not teach in your school. Passion for science (including computer science) or mathematics, together with ability to energize students' enthusiasm for learning these subjects, are among the qualities to look for in nominees. Give your nominees plenty of time to complete the rigorous application that includes a written narrative, a videotaped lesson and letters of recommendation.

APPLICATIONS ARE DUE BY MAY 1, 2015. Once nominated, teachers must access www.paemst.org to certify their eligibility and to learn more about the program.

Thank you for your support,
Liz Buttner, State Coordinator-PAEMST Science.

You're Invited! Attend NEBHE's AM PBL Workshop and SME's Bright Minds Program at EASTEC 2015

May 13, 2015, West Springfield, Massachusetts, (Co-located at EASTEC)

SME's Bright Minds reinforces the value of education in manufacturing careers by showcasing real world outcomes and results to middle school, high school, and college students, educators, and administrators. The Bright Minds program will feature NEBHE's AM PBL workshop and The Dream It! Do It! Student Challenge.

- Participants in NEBHE's Advanced Manufacturing Problem Based Learning (AM PBL) Workshop will learn how to use the AM PBL multimedia Challenges, developed in collaboration with New England manufacturers. Participating educators will learn how to work with industry partners to enhance student's content knowledge, critical thinking skills and ability to work in teams. Full registration for the PBL program and other workshops will be available in February 2015 at www.easteconline.com.
- Students, educators, administrators, and councilors are invited to participate in SME's Bright Minds Dream It! Do It! Manufacturing Student Challenge. Student teams and individuals can submit a project entry to membership@sme.org with team name, school, challenge choice (challenge options, details and agenda are at easteconline.com), and the name and contact information (phone and email) for the main educator/chaperone. Teams can be no less than 3 students but no more than 6 students.
  - **Project entries are due by Friday, February 20, 2015.**
  - Cash prizes and awards will be presented to the winning teams and individuals. A stipend for travel expenses and lunch will be provided (details to follow).
  - Questions, please email Dolores Nixon at dnixon@sme.org.

Register your students and school for SME's Bright Minds Dream It! Do It! Student Challenge today by sending an email to membership@sme.org.

Full registration for the AM PBL workshop and other programming will be available in February 2015 at www.easteconline.com .
Questions? Please contact Project Coordinator Becky Eidelman at reidelman@nebhe.org or by phone at 617-357-9620 x 113.

The PBL Projects of the New England Board of Higher Education are funded in part by the National Science Foundation's Advanced Technological Education program (DUE Numbers 1204941, 0903051, 0603143).

NSTA DISTRICT CONFERENCE PACKAGE: TEAMING UP FOR STEM

The National Science Teachers Association (NSTA) is bringing you customized professional learning for district teams! This free offer is ONLY for the NSTA National Conference on Science Education in Chicago –March 12-15, 2015. Customized professional learning for first 100 district teams! We're limiting this free customized program to only 100 district teams so we can better serve you at the conference. When a team of 4-8 (including one administrator) from a district registers for the National Conference in Chicago, we will work with you to tailor a learning experience to ensure that both school leaders and teachers get the most from the conference.

The district package includes:
Personalized sessions for district leader—including nationally known keynotes, free digital resources, tools for assessing STEM lessons
Personalized planning to optimize your learning at conference
Early access to registration booth and the Science Store
Invitation only receptions for district teams
This exclusive invitation is available to the first 100 district teams (of 4-8) that register for the conference and complete a brief survey (no additional fees beyond regular conference registration).

NSTA TEAM OFFER
http://www.nsta.org/conferences/districtpackage.aspx

THE 2014 CASE WINTER BULLETIN IS NOW AVAILABLE. IN THIS ISSUE:

- Defining Coastal Resilience and Its Ability to Define Connecticut
- Imagine Nation: A Museum Early Learning Center Ignites Children's Imaginations
- Connecticut Scientists Elected to the National Academies in 2014
- News from the National Academies:
  - o Ebola: Research Priorities to Guide Public Health Practices
  - o Engineering Education Still Key to US Innovation
  - o Report Urges Greater Focus on Young Adults
- In Briefs: Science and Technology News from Around the State

http://www.ctcase.org/bulletin/29_4/29_4.pdf

CT SCIENCE SAFETY NETWORK WORKSHOP SERIES:

- February 12 – STEM Safety (new)
- March 5 – Safety in the Arts (new)
- March 19 – Science Safety for Special Education Teachers and Paraprofessionals (new)

FOR INFORMATION, CONTACT: Sara MacSorley, Director of the Green Street Arts Center and Project to Increase Mastery of Mathematics and Science (PIMMS) smacsorley@wesleyan.edu 860-685-7870:

THE NATIONAL WWII MUSEUM
NEW ORLEANS

The National WWII Museum is excited to announce a week-long professional development opportunity to take place in the summer of 2015 for middle school (5-8th grade) science teachers. Twenty eight teachers from across the country will come to New Orleans to experience hands-on how necessity, knowledge, perseverance and skill lead to inventions, innovation, and careers in STEM—just like in World War II.
This seminary is supported by a grant from the Northrop Grumman Foundation. Teachers will receive free room and board in New Orleans, a travel stipend, and all seminar materials free of charge.
We are looking for great young teachers nationwide, and the application period begins January 5th 2015. Please visit http://www.nationalww2museum.org/realworldscience for more information and to sign up for email updates.

FLP Food, Land & People

Project Food, Land and People is designed to provide educational materials emphasizing natural resources, soils, food, nutrition, and food systems. It promotes an educational approach that allows students to understand the large picture of the interrelationships among, natural resources, agriculture, the environment and the people of the world, while meeting National and State education standards and applying personal choice. Workshops provide participants with classroom ready activities and supporting materials along with local contacts and materials to help integrate concepts into classroom needs. Contact susan.quincy@ct.gov , 203-734-2513. Workshop fee is $40.00 for any workshop, except January 16th.

January 16, 2015
Facilitator Training Workshop
9:00 am – 5:00 pm
Kellogg Environmental Center
500 Hawthorne Ave., Derby, CT
Become part of the educational network using Project Food, Land and People materials in educational workshops working with teachers and educator across the state. You will learn integration techniques to use in presenting workshops and how to help groups of educators understand the concepts of the material and applications into classrooms and programs. This training requires you have attended a FLP workshop before hand and or be familiar with topics it reaches, i.e. nutrition, gardening, agriculture natural resources… **Training for this workshop is free and will provide you with materials.**

February 11, 2015
Eat Well Be Well
9:00 am – 3:00 pm
Kellogg Environmental Center
500 Hawthorne Ave., Derby, CT

PROJECT WET Water Education for Teachers

The New Year has started and how is that resolution doing? Help students understand the basics of nutrition and the pathway of nutrients from environment

to us. Learn how to connect cafeteria activities and support new lunch standards through better nutrition in the classroom. This educational resource has great connections to Common Core math and Literature standards with activities that apply to grades k-12.

March 11, 2015
Workshop
9:00 am – 3:00 pm
James L. Goodwin Conservation Center
James L. Goodwin State Forest
23 Potter Road, Hampton, CT 06247

Use this day of professional development to delve into how agriculture affects us and we affect agriculture. Focus will be on increasing agriculture and environmental literacy beginning with soil and water and ending with human populations and sustainability issues. Activities are provided for K-12 that increase understanding of natural resource use, technology and design, land use choices, and nutrition. All activities support the Common Core standards and NGSS. Registration for workshops is required. Fee $40.00 per participant.
Registration forms available by emailing
Susan Quincy at susan.quincy@ct.gov or call 203-734-2513

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

Project WET (Water Education for Teachers) is an interdisciplinary water education program that provides K-12 educators with hands-on activities and programs that can be used in a variety of educational settings. The goal of project WET is to facilitate and promote the awareness, appreciation, knowledge and stewardship of water resources through the development and distribution of classroom ready teaching aids. Recently revised and updated the WET Guide 2.0 offers new activities on topics such as National Parks, health and hydration, storm water, and the very best activities gathered from all of Project WET's publications. Contact susan.quincy@ct.gov, 203-734-2513. Workshop fee is $40.00
WORKSHOPS OPEN TO ALL

January 22, 2015
Where Does Water Go? 9:00 am – 3:00 pm Kellogg Environmental Center
500 Hawthorne Ave., Derby, CT
Focus on needs of elementary teachers to help provide activities and applications illustrating how water moves in our environment and homes. You will begin with the basics of how water works, bonds, mixes and changes forms and then apply it to landforms, water systems and natural environments.

January 30, 2015
Water Health

9:00 am – 3:00 pm
Earthplace- the Nature Discovery Area
10 Woodside Ln, Westport, CT

Water is essential to life. This workshop will illustrate the importance of having clean water and understanding what clean water means for the environment and for us. Hygiene, health and water quality activities will be the focus in this geared for all age levels.

March 6, 2015
Water and Energy Connections

9:00 am – 3:00 pm
Eastern Connecticut State University
Student Center Room 221
Willimantic, CT

Get ready for World Water Day with this workshop focused on helping students and adults understand the connections between water and energy conservation. This year World Water day will consolidate and build on previous year themes. Using Project WET and additional resources we will help illuminate the challenges of meeting needs with sustainable action that conserves natural resources and water. Activities will focus on grades 4-12 with ways to help you celebrate World Water Day in the classroom or community.

Registration for workshops is required. Fee $40.00 per participant.
Registration forms available by emailing
Susan Quincy at susan.quincy@ct.gov or call 203-734-2513

EDUCATOR ACADEMY IN THE AMAZON RAINFOREST + MACHU PICCHU

The July 1-11, 2015 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 (PLT); Lilly Briggs

(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 March 1, 2015. Program cost is $1240 + 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.

GEEO

Global Exploration for Educators Organization (GEEO) is a 501c3 non-profit organization that runs professional development travel programs designed for teachers.

GEEO is offering the following travel programs for 2015: India/Nepal, Sri Lanka, Bali/Lombok, Italy, Eastern Europe, Greece, Uzbekistan, Vietnam/Cambodia, Thailand/Laos, Belize/Guatemala, Morocco (Winter, Spring and Summer) China, Eastern Turkey, Western Turkey, Zambia/Botswana/Namibia/South Africa, New Zealand, Costa Rica, Peruvian Andes (Summer and Spring), Peruvian Amazon, and The Galapagos Islands. The registration deadline is June 1st, but space is limited and many programs will be full well before the deadline.
Educators have the option to earn graduate school credit and professional development credit while seeing the world. The trips are 8 to 19 days in length and are designed and discounted to be interesting and affordable for teachers. GEEO 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 and administrators, as well as retired educators. Educators are also permitted to bring along a non-educator guest.

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 9AM-9PM EST.

What is NMEA 2015? June 29 - July 2, 2014 SENEME, SouthEastern New England Marine Educators is proud to be the host of the 2015 National Marine Educators Association annual. You can choose the days you would like to attend –or just one day -to concentrate on the strand that interests you most or all or up to five days to absorb the full impact of marine science education; from lectures and workshops to our vast array of experiential learning opportunities in the Newport Area.
Join us at the Newport Marriott, June 28 to July 2, 2015. The National Marine Educators Association Annual Conference is attended by both formal and informal educators, and students from public and private institutions as well as from aquariums, for profit and nonprofit organizations including government agencies. This three to five day event will be filled with an amazing amount of current marine science information. Some of which is related to STEM education and next generation Science standards.
More information can be found online At the NMEA site
http://marine-ed.site-ym.com/general/custom.asp?page=NMEA_2015 Or on our site SENEME
http://seneme.org

Grants and Resources For K-12 Teachers

Based on interest (1,054 views of the 12-minute version) in one of the ASK "Solids and Liquids" lessons, we decided to post the full-length version of the lesson and highlight it in our December Newsletter. This one was adapted to teach reading with inquiry science. We are always interested in comments and suggestions from you.

We now have 1,000 individuals who have opened accounts on our website and are using the free resources--primarily the lessons K-6 teachers are sharing to illustrate how they "teach more than science with inquiry science." If you know K-6 teachers or K-6 teacher educators who have not yet joined us, please invite them to join us by opening a free account at http://justaskateacher.com .

If you know high school teachers, university professors, or others who would like to participate as science content experts (physics, chemistry, biology, or earth science) to discuss lessons with K-6 teachers, please let us know or pass along this Email to them. If you would like to see an example video of this (how one science content expert worked with one K-6 teacher), go here or copy and paste the following into your browser.
http://justaskateacher.com/joomla/charles/Prototypes/ASK005VSTCSound3&4Gr4Reading20120223ScienceContent35Min20140923.mp4

Thanks again for passing along our newsletter each month. Here is the most recent one. Please click on:
ASK A TEACHER
Looking forward to more of your suggestions and comments,
Charles C. Matthews, Ph. D.
Academic Research Scientist
University of Missouri at St. Louis
matthewscc@umsl.edu
Email to schedule Skype, PolyCom, or Elluminate Sessions
Skype: dr.charles.c.matthews
PolyCom IP Address 98.172.76.67
Web: http://justaskateacher.com

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

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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/

Do you use Vernier tools in teaching an engineering or STEM class? You can enter a contest with really neat rewards. Applications are due January 15. For a full description, click on: http://www.vernier.com/grants/engineering/

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 an updated one by email from Eloise Farmer at eloisef302@gmail.com

OPPORTUNITIES FOR STUDENTS

ait **World of 7 Billion Contest**

Create a short video (up to 60 seconds) about human population growth that highlights one of the following global challenges.

1. **The world is in the midst of the sixth mass extinction.**
2. **Most of the world's suitable farmland is already under cultivation.**
3. **Worldwide, 1 in 10 primary school age children and 1 in 3 secondary age children are not enrolled in school.**

All videos must include a) how population growth impacts the issue, b) why the issue is important, and c) at least one idea for a sustainable solution.

Deadline for video submissions: Thursday, February 19, 2015 (5:00pm Eastern US time)

NEW CHALLENGE! Chemical Educational Foundation® (CEF), a nationally recognized non-profit organization dedicated to enhancing grade K-8 students' appreciation of the science and value of chemistry. CEF has created a series of *You Be The Chemist*® (YBTC) programs, including the YBTC Challenge, an academic competition for grade 5–8 students. The YBTC Challenge engages grade 5–8 students in learning about important chemistry concepts, scientific discoveries, and laboratory safety. The Challenge is organized into three competitive levels: local, state, and national. Local and state competitions take place throughout the school year, and culminate in a national competition held each June in Philadelphia, PA (see our YouTube video). This year the Challenge will celebrate its tenth anniversary with over 23,000 participants in 30 states. Connecticut currently has three Local Challenge sites in New Haven County, Fairfield County, and Waterbury. For more information, including information about our YBTC Activity Guides (available for FREE online download) www.chemed.org.

SPACE DAY IN CONNECTICUT! Applications are welcomed from schools interested in getting $500-$1000 to fund a program for Space Day in CT, which is March 29, 2015. All you have to do is send us a 1 page proposal on a program you'd like to

run—can be anything relating to space in order to promote Space Day. Please send me a proposal! Thanks again.

Beth A. Taylor, PhD
Assistant Professor, Health Sciences
Assistant Director, CT Space Grant Consortium
Director, Center for Health, Care and Well-being
University of Hartford
http://www.uheart.wordpress.com
860.768.4831 and
betaylor@hartford.edu

Final Call: For Schools and School Districts - Student Spaceflight Experiments Program (SSEP) Mission 8 to the International Space Station

A Community Engagement Model for Grade 5-14 Authentic STEM, Starting February 23, 2015! The National Center for Earth and Space Science Education and the Arthur C. Clarke Institute for Space Education invite schools, school districts, and community colleges to explore participation in Student Spaceflight Experiments Program (SSEP) Mission 8 to the International Space Station. This STEM education opportunity immerses grade 5-14 students across a community in an authentic, high visibility research experience, where student teams design and propose real microgravity experiments to fly in low Earth orbit on the International Space Station (ISS). The program nurtures ownership in learning, critical thinking, problem solving, navigation of an interdisciplinary landscape, teamwork, and communication skills – all reflective of the Next Generation Science Standards, and reflective of the skills needed by professional scientists and engineers.

Each community participating in SSEP is provided a real research asset – a flight certified, straightforward to use microgravity research mini-laboratory, and launch services to transport the mini-laboratory to ISS. It is a limited research asset given that the mini-laboratory can only contain a single student team designed microgravity experiment. An astronaut aboard ISS will conduct the experiment, and after a 6 to 12-week stay in orbit, the experiment will be returned safely to Earth for harvesting and analysis by the community's student flight team.

Mirroring how professional researchers formally compete to obtain limited research assets, the participating community carries out a "call for proposals". More specifically, the community conducts a local Flight Experiment Design Competition. First, a core group of the community's STEM educators engage typically 200 students in a microgravity curriculum provided by the Center. The students are then separated into teams of typically 3-5 students per team, with each team vying for the community's single flight experiment slot by designing, then formally proposing, a microgravity experiment in a science discipline of their choice. Their experiment design is constrained by the operation of the mini-laboratory, and flight operations to and from Low Earth Orbit. The competition is conducted through formal submission of real (but grade level appropriate) research proposals by the student teams – as is standard practice for professional researchers. A minimum of 40 flight experiment proposals are typically secured across a single community.

A formal 2-step proposal review process, mirroring professional review, will determine the community's flight experiment. Content resources for teachers and students support foundational instruction on science in microgravity and experimental design. Additional programming leverages the experiment design competition to engage the community, embracing a Learning Community Model for STEM education. This includes a local art and design competition for a Mission Patch to accompany the flight experiment to Space Station. SSEP therefore provides for a community-wide STEAM experience.

TIME CRITICAL: all interested communities are asked to inquire by December 15, 2014; schools and districts need to assess interest with their staff and, if appropriate, move forward with an Implementation Plan. Communities must be aboard by February 16, 2015, for a 9-week experiment design phase February 23 to April 24, 2015, and flight experiment selection by May 28, 2015. Flight of the selected experiment to ISS is expected in Fall 2015.

Contact: Dr. Jeff Goldstein, SSEP Program Director; 301-395-0770; jeffgoldstein@ncesse.org

Teaching About Invasive Species : A new book from Green Teacher!! Whether working inside or outside schools, youth educators will find in Green Teacher's new book the tools to engage young people from 6-19 years of age in this challenging topic. Invasive species, if unchecked, will continue to have significant negative impacts on our environment and on our economy. Fortunately, the spread of many invasives can be checked. To succeed, we'll need effective education strate- gies to be widely deployed. This book aims to fill that gap. Included in its 80 pages are descriptions of 13 innovative, youth education programs, and 14 ready-to-use activities that are appropriate for various age groups. *$14.95 single copy, bulk pricing as low as $5.25*

To learn more or place an order visit: greenteacher.com **email:** info@greenteacher.com **call:** toll free 1-888-804-1488

A MESSAGE FROM LIZ BUTTNER, CONNECTICUT STATE DEPARTMENT OF EDUCATION: Listed below are a variety of professional learning opportunities and resources that may be of interest to you as you think about

your professional goals for the 2014-15 school year:

NSTA'S NEXT GENERATION SCIENCE IN THE CLASSROOM District Science Coordinators and K–5 teachers will not want to **miss NSTA's upcoming series of web seminars focused on teaching the *Next Generation Science Standards* (*NGSS*) in elementary school**. Each month from September through February, we will focus on a particular grade level, kindergarten grade. Presenters will review the general architecture of the *Next Generation Science Standards* and the specific expectations for each elementary grade level. Then participants will learn how to use the standards to plan curriculum and instruction. During each of these 90-minute web seminars, you will also have an opportunity to deepen your understanding of: how the three dimensions of *NGSS* (practices, core ideas, and crosscutting concepts) are designed to blend together during classroom instruction; dive into one or two examples of what the teaching and learning to achieve *NGSS* looks like in a specific grade; and discuss instructional practices with other teachers of the same grade level; and begin the development of a grade-level community in the NSTA Learning Center to support students learning.

Teaching *NGSS* in Elementary School—Fourth Grade, Wednesday, January 21, 2015
Teaching *NGSS* in Elementary School—Fifth Grade, Wednesday, February 18, 2015

NSTA Archived Webinars full archive of past programs can be accessed for free.

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Materials Available to Connecticut Middle Schools! *Free Online Teaching Materials & Professional Development for Connecticut Public School Students and Educators through June 2016.* Sea Research Foundation, based in Mystic, Connecticut, is home to Mystic Aquarium, JASON Learning and the Ocean Exploration Center. Through the support of the **Connecticut Department of Economic and Community Development,** Connecticut middle schools have access to a set of multimedia instructional materials and professional development free of charge through the 2016-17 academic school year.

a. ***Online access*** to the gated, JASON Expedition Center featuring curricular resources, videos, digital labs and games, simulations, and more.

b. ***Professional development workshops*** in JASON curricula including teacher and student print editions, and DVD.

Best suited for Grades 5-9, the curricular themes include:
Climate, Weather, Geosphere, Ecology, Forces and Motion, and Energy.
Visit http://www.jason.org/roll-outs/ct-statewide to sign up to receive free access to the JASON Expedition Center and to learn more about professional development workshops being offered throughout the state. **For more general information about JASON Learning and its programs, visit http://www.jason.org or call 1-888-527-6600**

In the News Too busy to sift through the news in search of interesting stories? Click on the link to read current news stories collected for you by NSTA staff members.

Triangle Coalition has many STEM articles of interest to science educators: to read these articles, go to: **TRIANGLE COALITION**

NASA HAS MANY RESOURCES AVAILABLE TO EDUCATORS…MANY MORE THAN WE CAN DESCRIBE IN THIS NEWSLETTER. PLEASE EXPLORE WHAT IS AVAILABLE BY CLICKING ON
http://www.nasa.gov/audience/foreducators/index.html

Want to be a NOAA-it-all about the weather and oceans? Explore these fantastic FREE NOAA resources and print publications click here to shop our entire NOAA publications collection.

MUSEUMS and INSTITUTIONS: the Connecticut State Museum of Natural History and Connecticut Archaeology Center, part of the College of Liberal Arts and Sciences at UConn. 860.486.4460 - www.mnh.uconn.edu

Connecticut's Beardsley Zoo is closer than you think and open daily from 9:00 am to 4:00 pm.

THE MARITIME AQUARIUM AT NORWALK, 10 N. Water Street, Norwalk, CT; (203) 852-0700, www.MaritimeAquarium.org. Hours: 10 a.m. to 5 p.m. daily.. IMAX® theater offers the largest movie screen in Connecticut. The name of the Aquarium's new research vessel will be R/V Spirit of the Sound – chosen through a recent Name the Boat contest open to Norwalk school students

For more information about The Maritime Aquarium's educational programs, or its exhibits and IMAX movies, go to www.maritimeaquarium.org or call (203) 852-0700.

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.