CONNECTICUT SCIENCE CONNECTION

April 2019

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

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 ENTITY

Professional Development Opportunities! Are you interested in high quality, low cost, Teacher Professional Development opportunities? Visit the CSTA website and click on Opportunities. You will not be disappointed. Contact us if you have questions.

click to Join the CSSA

MIT will again be hosting the week-long Science and Engineering Program for Teachers (SEPT) this year in the end of June. You can learn specific information by going to https://sept.mit.edu/ The MIT Club of Hartford will again be sponsoring one teacher to attend the program this year. If you are interested, go to the website for the application, fill it out and send it to Dr. Avi Ornstein at ornstein@alum.mit.edu

CONNECTICUT STEM FOUNDATION SCHOLARSHIPS

Did you know that The CT STEM Foundation offers up to $1,000 in scholarships to encourage both middle school and high students to participate in STEM studies? But wait, there's more! The Foundation also offers two $1,000 scholarships to graduating seniors who participate in the CT STEM Fair.

In keeping with its mission to engage pre-college Connecticut students in multiple STEM activities, the foundation offers two summer scholarships to undergraduate science students planning to attend a college/university summer STEM course, a summer internship, an informal science education program or a tuition high school summer education program. Depending upon tuition and expenses, up to $500 is granted for each scholarship. One is awarded to a rising sophomore, junior or senior high school student. The other is awarded to a middle school student.

Another aspect of the foundation's mission is to provide support to graduating seniors planning to major in a STEM related field in college. Two $1,000 scholarships are awarded to applicants who participated in the current year's CT STEM Fair.

Additional information, including scholarship application forms and the deadlines for submission, are available on the CT STEM Foundation's website, ctstemfoundation.org, under the Scholarship section.

CSTA Election Nomination Time! Would you like to get more involved with CSTA/NSTA? Are you interested in promoting Science Education in Connecticut? Directors are responsible for attending board meetings, typically held 8 times/year in Rocky Hill. They also must actively participate on committees and promote science education. The following Board position terms are currently up and available to be filled by members:
County Directors: Hartford, New Haven, New London, Windham *****Level Directors: Elementary, Middle, High School, Magnet/Charter, Independent, Parochial, Retired.

You may self-nominate. Please contact Pat Ruane at pat.o.ruane@gmail.com if you are interested or want more information. **********

CSSA, CSTA, & CoNSEPT Project – Announces

SciCamp CT 2019

When: Saturday, April 27, 2019 8:00AM-12:00PM

Where: CCSU in New Britain, CT

Are you a K-12 Educator, Administrator, or Pre-Service Teacher looking to deepen your NGSS knowledge and practice?

SciCamp CT 2019 is an educator-led "unconference." It is a grassroots effort to advance the implementation of Next Generation Science Standards (NGSS) for ALL teachers in Connecticut. **It is FREE to all participants.** On this day, teachers from participating districts will meet to discuss and share what works in their classrooms, and seek to advance their own practice.

Topics to be discussed might include,

- Modeling
- 3-Dimensional learning
- NGSS Assessment
- Cross-cutting concepts
- NGSS and TEVALs
- Common Core-NGSS Nexus
- And other NGSS related topics

Register by Fri. April 19 to secure your spot using the link below:

https://tinyurl.com/ccsuscicamp19

Sci Camp CT #SciCampCT

For more information contact: Jeff Thomas (thomasjed@ccsu.edu) Todd Campbell (todd.campbell@uconn.edu)

Click here to access Connecticut Science Safety Network CSSN 2019 Workshop Calendar

Register now!

CSTA and CSSA Awards Dinner for Excellence in Science Education and Supervision

Wednesday, May 8, 2019, 5:00 PM - 8:30PM

New Haven Lawn Club

More information can be found at **CSTA website**

Congratulations to:

- Lisa Vaudreuil , Flanders Elementary School, East Lyme : Excellence in Elementary Science Teaching 2019
- Toni-Ann Rock , JAD Middle School, Southington : Excellence in Middle School Science Teaching 2019
- Dr. Michelle Bellinger, CREC Academy of Aerospace and Engineering, Windsor: Excellence in High School Science Teaching 2019
- Crystal Caouette, Middletown High School, Middletown, CT: Connecticut Science Educator Fellow
- Connecticut River Salmon Association West Hartford, CT Accepting Dr. Sigmund Abeles Award on behalf of Connecticut River Salmon Association Tom Chrosniak, President : Dr. Sigmund Abeles Award

Nominations due now! Babu George STEM Award

Presented to a team/club, group or an individual who has been involved in a major STEM project or initiative within their school district or at large in Connecticut.

This award is sponsored by Sacred Heart University and administered by CSSA. The Connecticut Science Supervisors Association established this award to honor Babu George, a former Sacred Heart University professor, for his outstanding service to science teachers in Connecticut.

Nomination Process

Any member of CSTA or CSSA may nominate a candidate. Nominations may also be submitted by a colleague, administrator or by self nomination.

Nominations are submitted to the chairperson of the award committee of CSSA in the form of a letter of support containing specific information concerning the nominee's involvement in a STEM project or initiative. All nominations will be reviewed by the members of the CSSA award committee.

Criteria

The nominee may be a K-12 educator, a team/club, a group or individual who ~

- · has developed innovative educational experiences in the field of science, technology, engineering, and math
- · has demonstrated leadership in the growth and development of a STEM program/team
- · fosters a passion for STEM education

Nomination forms can be found on the CSTA website. Nominations should be emailed or postmarked by March 31, 2019 and submitted to - David Lopath, CSSA Award Committee, 151 Bradley Corners Road, Madison, CT 06443

203 421 3120, lopath@comcast.net

Register for SciCamp today! **Free** **********

UCONN's Natural Resources Conservation Academy (NRCA)

Applications for UConn's Natural Resources Conservation Academy (NRCA) -- environmental programs for adults, teens, and teachers – are quickly approaching. If you are interested in engaging teens in your community or conservation efforts, want to learn mapping tools that can be used to tackle environmental problems or know of teens interested in the environment, **apply online today to one of our programs (or encourage interested teens to apply)!** See below to learn more about our 3 programs:

The **Conservation Training Partnerships** (http://nrca.uconn.edu/students-adults/index.htm) program pairs teens and adult volunteers. The team participates in a 2-day field workshop (find a workshop near you!), and learns to use conservation and mapping tools in field activities. Then, the team designs and carries out a local environmental project. CTP is free to all participants.

The **Conservation Ambassador Program** (http://nrca.uconn.edu/students/index.htm) teaches teens the skills used by professionals to address current environmental issues. Students learn real field-based science during an exciting weeklong summer field experience at UConn. Then, students design their own environmental project to provide real solutions for their communities, and present their work at the Connecticut Conference on Natural Resources.

The **Teacher Professional Learning program** (http://nrca.uconn.edu/teachers/index.htm) extends the NRCA experience to high school science teachers. This 3-day professional development workshop immerses teachers in regional water resource issues, and provides them with online mapping tools to use in their classrooms. Each teacher leaves with 10-15 Water and Sustainability Science lessons aligned with Next Generation Science Standards.

Former NASA Astronaut is Keynote Speaker at STEM Forum & Expo

Former **NASA Astronaut and CEO of the National Math + Science Initiative, Bernard A. Harris, Jr.,** will deliver the conference keynote address at the **8th Annual STEM Forum & Expo**, hosted by NSTA this coming July in San Francisco.

Author of the book, *Dream Walker: A Journey of Achievement and Inspiration,* Harris is currently the CEO of the National Math + Science Initiative, aimed at improving teacher effectiveness and student achievement in STEM education across the country. The first African American to walk in space, he is a medical doctor, a former NASA scientist and astronaut, former CEO and managing partner of a successful venture capital firm, and has held several faculty appointments. While at NASA, he conducted research in musculoskeletal physiology and clinical investigations of space adaptation and developed in-flight medical devices to extend astronaut stays in space. NSTA looks forward to his keynote address.

The **Early Bird Registration deadline** for the **8th Annual STEM Forum & Expo** is **May 13**; we hope you will join us in San Francisco!

Learn More and Register Today!

Follow Us:

Using Technology in 3-D Science Teaching

Technology can play an important role in three-dimensional science instruction. It can include not only the use of hardware and software in the classroom, but also the innovative use of social media to access the global science community. Technology provides many entry points for science learning. For example, Skype A Scientist matches scientists with classrooms around the world, and other connections provide access to real-world science, such as the Great Backyard Bird Count. Technology can serve multiple roles; it can be an engagement tool, or serve as an enhancer or accelerator of science learning. The teachers featured in this issue will inspire you to explore the use of technology to support 3-D teaching.

As always, let us know if any of these ideas work for you; drop us a note at *nextgennavigator@nsta.org*.
Kathy Renfrew Field Editor, *Next Gen Navigator*

Using Collaborative Educational Technology Tools in Science
Fifth-grade teacher Rayna Freeman is a master at integrating digital technology into all subject areas. She knows the importance of science literacy and being a model learner in her own classroom. Read how she uses students' engagement with digital literacy as a tool to help them understand the importance of composting. Read more. >>

How Teachers Can Use Technology to Support Three-Dimensional Teaching and Learning
Ryan Revel is a high school teacher who uses an array of digital devices and apps to enhance her science instruction. She understands the important role of technology in the 21st-century STEM world and uses a range of tools and devices to help students learn science. Read more.>>

Using Social Media and Technology to Encourage Students' Evidence-Based Discussions
Adam Taylor, a high school teacher in Tennessee, employs technology to engage his students in science and engineering practices by involving students in meaningful evidence-based discussions with working scientists and other students around the country. Taylor's focus on evidence is critical because he knows it provides a means for scientists to talk with one another in the real world, and he wants his students to be confident and competent in having those important science conversations. Read more. >>

CLASSROOM RESOURCES

***NGSS*@NSTA Classroom Resources**

These classroom resources are vetted by our teacher curators, who recommend ways they can be adapted to more closely reflect the vision of the *Next Generation Science Standards* (*NGSS)*.

- Grades K–2: Warmth of the Sun
- Grades 3–5: Feeding Frenzy
- Grades 6–8: Plate Tectonics
- Grades 9–12: CarbonTIME Human Energy Systems Unit

Upload and share your own resources. Read this FAQ for more information.

Quality Examples of Science Lessons and Units
Achieve's EQuIP Peer Review Panel for Science (PRP) uses the EQuIP Rubric for Science to evaluate instructional materials and identify lessons and units that best illustrate the cognitive demands of the *NGSS*. Explore this featured resource for grade 4: Community Waters.

PROFESSIONAL LEARNING

NSTA National Conference
Join us in St. Louis on April 11–14 for the NSTA National Conference and explore three-dimensional teaching and learning in depth.

- Visit the *NGSS*@NSTA Hub for highlights of *NGSS*- and 3-D–related sessions, including the *NGSS* Forum, a day-long offering of targeted sessions and an *NGSS*@NSTA share-a-thon.

- Register for a preconference workshop: Designing Three-Dimensional Lessons and Units.

- Learn more about the key strands, including Three-Dimensional Grand Slam; Phenomena: Gateway to Learning; Jazzing Up Science With Cross-Curricular Connections; and Confluence of Equity and Education.

Achieve Releases Tools and Resources to Evaluate 3-D Assessment Tasks
Achieve, Inc., has released a set of tools and resources to show educators what good 3-D assessment tasks look like. They include

- annotated examples of classroom tasks that highlight the features of good science assessments;
- emerging models and guidelines about must-haves, phenomena, equity, sense-making, practices, and crosscutting concepts for educators who want to design their own three-dimensional performance tasks; and
- tools educators and developers can use to determine if tasks they are considering using will provide meaningful feedback.

Watch this video about the new tools and resources.

Science Scope
The April 2018 issue of *Science Scope*, NSTA's member journal for middle level educators, explores how technology allows teachers to make connections with scientists, researchers, and content experts to bring the real world into the classroom and take students out into the field.

Exemplary Evidence: Scientists and Their Data
NSTA Kids
Exemplary Evidence: Scientists and Their Data touches on the world's many riddles—from how we see to what's at the bottom of the ocean. It tells how scientists have solved such puzzles by collecting measurements, taking notes, and even making sketches. The book also provides mini-bios of the nine

featured scientists.

CALENDAR

- **Apr. 10–11:** [Workshop: Designing Three-Dimensional Lessons and Units, St. Louis, MO]

Apr. 11–14: [NSTA National Conference on Science Education, St. Louis, MO]

I'm reaching out from UConn School of Engineering Professional Education,. The PE program offers graduate level engineering programs that are convenient and flexible, many distance learning, with several concentrations for people who are already employed as practicing engineers from mechanical engineering (as you know, Dr. Cetegen is the department head) to an MBA/Meng dual degree as well as graduate-level advanced certificate programs and custom educational **training based on a corporation's needs, https://soeprofed.uconn.edu/. I'd welcome the opportunity to connect about submitting editorial content or highlighting the work that we are doing with engineers across the state. We've forged strong relationships with organizations like UTC, Sikorsky and Electric Boat and their employees. At the very least, we'd be honored if you'd consider including content about our program's offerings under your Education & Cognition category.**

Please let me know if you are available to connect or need anything else from our team to assess this opportunity. Thank you in advance for your time!

Best Regards,
Liz Fongemie
Business Development & Marketing Associate
UConn School of Engineering Professional Education
371 Fairfield Way, U-4031
Storrs, CT 06269-4031

Dear *Connected Science Learning* Reader,

Read about the innovative program Imagine Your STEM Future, in which girls work on STEM activities while receiving support from working female scientists and engineers. Find out how a capstone experience for high school seniors was designed to create STEM career pathways. Plus, learn about the National Girls Collaborative Project's efforts to provide an inclusive space for those dedicated to moving the needle on gender equity in STEM.

Look for the third part of issue 9 of *CSL* thismonth as we continue our focus on Introducing Youth to STEM Careers. And if you have an idea for a *Connected Science Learning* article, visit our call for contributions to find out how to submit.

Best,
The *CSL* Team
ConnectedScience@nsta.org

LITERACY. INNOVATION. COMMUNICATION.

KEYS TO SCIENTIFIC ACHIEVEMENT

CONNECTICUT SCIENCE EDUCATORS ANNUAL CONFERENCE 2019

SAVE THE DATES FOR OUR ANNUAL CONFERENCE!

November 8th and 9th, 2019
Heritage Hotel & Conference Center

Friday, November 8th: Special Session with Entertainment & Refreshments

Saturday, November 9th from 8:00 - 3:30 featuring:

Workshops	Exhibitors
Networking	Giveaways
Light breakfast	Lunch Buffet
Beautiful Venue	Modern Meeting Rooms

President's Reception with Desserts & Door Prizes

Keynote Speaker: Okhee Lee

Okhee Lee is a professor in the Steinhardt School of Culture, Education, and Human Development at New York University. She is currently leading collaborative research between New York University and Stanford University to develop instructional materials aligned with 3-Dimensional Learning to promote effective science education for all grades, K-12.

CSTA

EdAdvance is excited to announce an opportunity for teachers interested in the intersection between Science and Computer Science. With support from a new National Science Foundation grant, Skills21 is recruiting a cohort of teachers this year who want to engage their class in a CS challenge and present student team solutions at the 2019 Expo Fest on June 1, 2019 (expofest.skills21.org).

Through the new Skills21 Science/CS challenge, student teams are compelled to develop a computer science product, service or solution leveraging a scientific discipline to meet a need, solve a problem or capture an opportunity. Student solutions might include mobile apps, wearable solutions or other innovative uses of computer science.

Participating teachers will receive:

- $1000 stipend for planning, out-of-class time engagement and curricular review
- $500 for project materials
- Onsite coaching and professional development

Participating teachers will need to:

- Pilot and/or provide feedback on Computer Science infused Science units including lesson plans and an end of unit performance assessment
- Bring a team of students to the 2019 Expo Fest to compete in the new Science/CS Challenge
- Allow Skills21 to conduct pre- and post-intervention surveys (September and June)

What's the time commitment?

- In and out of class time commitments for teachers will vary based on individual class settings. Experienced Skills21 staff will work with prospective teachers to help gauge the required time commitment and investment

Priority Eligibility:

- First priority in the early stages of this grant are for teachers that work with traditionally underserved student populations

How to Get Involved

Interested teachers should contact Liz Radday (radday@edadvance.org) or Susan Auchincloss (auchincloss@edadvance.org).

UConn's Natural Resources Conservation Academy (NRCA), which offers environmental programs for teens, adults and teachers.The **Conservation Ambassador Program** (http://nrca.uconn.edu/students/index.htm) teaches teens the skills used by professionals to address current environmental issues. Students learn real field-based science during an exciting weeklong summer field experience at UConn. Then, students design their own environmental project to provide real solutions for their communities, and present their work at the Connecticut Conference on Natural Resources. For more details check out the CAP program video here. The **Conservation Training Partnerships** (http://nrca.uconn.edu/students-adults/index.htm) program pairs teens and adult volunteers. The team participates in a 2-day field workshop (find a workshop near you!), and learns to use conservation and mapping tools in field activities. Then, the team designs and carries out a local environmental project. For more details check out the CTP program video here. The **Teacher Professional Learning program** (http://nrca.uconn.edu/teachers/index.htm) extends the NRCA experience to high school science teachers. This 3-day professional development workshop immerses teachers in regional water resource issues, and provides them with online mapping tools to use in their classrooms. Each teacher leaves with 10-15 Water and Sustainability Science lessons aligned with Next Generation Science Standards. O**nline applications are now open!** If you are interested in learning more, we are happy to visit classrooms & organizations to give brief presentations about our NRCA programs. Please contact me to find out more. **Laura Cisneros**

The Winter/Spring issue of the CASE Bulletin is now available. In this issue:

- ***Astronomy and Astrophysics: Solving Critical Issues on Earth with the Science of the Universe***
- ***Yale Astrophysicist Urry to Present Keynote at CASE Dinner***
- **News from the National Academies:**

- 'Low Resource' Areas Focus of Health Care Report

- Improving Industrial Stormwater Permitting Process

- Study Examines Role of State Governments in Economic Development and R&D Competitiveness

- Action Collaborative to Address Clinician Well-Being and Resilience

- Returning Individual Research Results to Participants

- Report Finds NETs Key to Mitigating Climate Change

- Adapting to the 21st Century Innovation Environment

- Public Health Consequences of E-Cigarettes

- **IN BRIEF: Science and Technology Notes from Around the State**
- **Connecticut scientists elected to the National Academies in 2018**

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.