# SCIENCE Matters National Science Teachers Association

# **CONNECTICUT SCIENCE CONNECTION**

October 2020

 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

some distance learning ideas? This may help you to get through the difficult times we are experiencing. Visit CSTA.wildapricot.org and click on Opportunities. You will not be disappointed. Contact us if you have questions.

https://csta.wildapricot.org/



Join the CSSA! www.cssaonline.org All Teacher leaders

welcome You do not have to be in a formal Supervisor Position, but should be interested in helping keep your colleagues informed on the latest in science education. At this time, we hope to provide support to teachers in a leadership situation.

#### **BOOKMARK THIS SITE!**

The Connecticut State Department of Education wants to provide valuable resources to the field and is continually working to make these resources easy to find in one central location. Therefore, beginning January 1, 2020, the CTCoreStandards.org website will no longer be operational. All of these resources have been moved to the CSDE website at

https://portal.ct.gov/SDE. They can be accessed under K-12 Education, Academics, CT Core Standards. The direct link is

https://portal.ct.gov/SDE/CT-Core-Standards. Please bookmark this for future reference.



Do you have particular lessons that have worked well with your students at their location (whatever it might be)? Do you have tips on helping parents to cope with keeping their youngsters on task and resisting the temptation to do lessons themselves? Are there some

activities which have worked well outdoors in a safe location so students can work outside even in a small apartment (like a windowsill)? Has this led you to find your creative chops? Please email me at <u>Eloisef302@gmail.com</u> with things that worked for you and your students so I can share them with your colleagues.

From our colleagues in New York State: The White Paper entitled EFFECTIVE SCIENCE TEACHING: ADDRESSING COVID-19 CHALLENGES <u>https://drive.google.com/file/d/1-Tk4ZVgDVZv-UAvKvjOOTaMTGnstqRjk/view</u>

The attached document entitled Effective Science Teaching: Addressing COVID-19 Challenges is being shared with you by the New York State Science Education Consortium. The Consortium is made up of representatives from science professional organizations and BOCES throughout the state. Teachers, administrators and professional development experts worked together to examine the challenges that have been presented to teachers, students, and school districts by the coronavirus pandemic. The need to immediately switch to remote teaching in the spring along with the various teaching environments that school districts are utilizing this fall has forced educators to rethink how they work with students. This document represents the findings of the Consortium on remote learning, assessing students in a remote environment, providing laboratory experiences to students in a variety of settings, and the importance of professional learning to prepare teachers to adapt to these challenges.

This paper offers a set of suggestions for effectively teaching science in the world we are facing in 2020-21. We will be making our findings available to school districts, professional associations and NYSED. We hope that the research presented here is valuable to you as you examine how science education programs are being offered in your school district.

> Commeticat Praisive Working Group WEDNESDAY, OCTOBER 7, 2020 REALISTIC SOLUTIONS TO MANAGING INVASIVE PLANTS

**ONLINE**: What's the Same and What's Different: The day has the same general components as previous Connecticut Invasive Plant Working Group Symposia:

- Continuing Education Credits — "CEUs" for many groups; and Pesticide Applicator Recertification Credits (*reciprocal for New England states*).

 Program begins a kick-off of general interest sessions followed by Concurrent Breakout sessions.

Differences with the online webcast format include: - You don't have to drive through rush-hour traffic. -You don't have to try to clone yourself to see all the talks of the concurrent breakout sessions because (NEW!) the webcast broadcast on October 7 will be recorded and paid attendees will be able to go online following the symposium and view sessions that they missed or wish to see again. -The talks will have closed captioning (you can turn down the webcast volume in your home or office and read the text of the talks as they are aired). **REGISTER** or get more information about the PROGRAM; CEUs; and a list of our CO-SPONSORS Regular registration - \$65, student registration \$25

More information, visit

https://cipwg.uconn.edu/2020symposium/

Questions, contact <u>Rose.Hiskes@ct.gov</u> or <u>Victoria.Wallace@uconn.edu</u> (860) 885-2826

More virtual workshops! Save the date! October 22 - Page Keeley of <u>Uncovering Student Ideas</u> will be presenting. Topic: All Students' Ideas Matter! Students of all ages and backgrounds bring ideas to their learning that are not always consistent with scientific ways of thinking about phenomena and concepts. Engaging all students in surfacing and thinking through their ideas in both face to face and distance learning classrooms is essential for their success. Examine how to use purposefully designed questions to elicit K-12 students' (and teachers') initial ideas and use them to build a bridge between their preconceptions and the disciplinary core ideas that help them understand the natural world.

Dr. Michael A. DiSpezio, science author and COVID-19 education expert will present an engaging, richly illustrated, and information-packed webinar in which he'll address our current understanding of COVID-19. As he surveys the science, spread, and therapies of the disease, he'll profile specific opportunities for STEM educators. From experiences that explore exponential growth to the fundamentals of bioengineering nucleic acid vaccines, topics will be presented in a sophistication-friendly manner during which attendees will construct COVID-19 literacy as well as an appreciation of the opportunities for teaching related phenomena and topics. He'll also address the latest findings in both treatment and vaccine technologies. So join Michael, for what will surely be a valuable experience that not only addresses educational pedagogy and COVID-19 literacy, but profiles the latest findings in how to stay safe and healthy! <u>Register here</u>

Jackson Labs is presenting a special week-long virtual Open House event specially designed for teachers and high school students on October 19-23, 2020.

This engaging week-long event aims to inspire and expose students to worldclass scientists and highlight research that is on the cutting edge of genomic medicine. Our special virtual program will include both live and pre-recorded events centered around four themes of genetics research:

- Mouse Models
- Bioinformatics & Data Science
- Mighty Mice in Space
- COVID-19

Join live career panels, watch research talks, explore pre-made lessons, and much more! There are many ways to attend the week-long event. Teachers can incorporate events into their in-person or remote curriculum by assigning videos as homework and devoting class periods to attending live sessions. Students can submit questions to our experts and learn about research and career paths.

Advanced registration is required to attend live events. No registration is required to view lessons and pre-recorded videos, which will be released the week of the event. More information including a full event schedule will be released on our <u>website</u> in the coming weeks.

**ExploraVision** is a science competition that goes beyond the typical student science competition and into what it takes to bring ideas to reality. K-12 students imagine what the world might look in 20 years through a combination of STEM concepts, project-based learning and critical thinking all while incorporating NGSS standards.

This competition is team based. Students, in groups of 2-4, imagine an invention of the future. They research the history of similar inventions, describe how their invention works and what needs to be developed so their invention can work. Prototypes are drawn and students draw webpages to display their work. Let's start imagining the future! Find out about entry deadlines, prizes and other tips <u>here</u>: Entries are due on February 8, 2021

#### SCIENCE & NATURE ACTIVITIES FOR COOPED UP KIDS

Whether you're a teacher who needs to share easy-to-implement content with your students, or you're a parent striving to best engage and educate your child at home, you'll find these materials relevant and fun! With engaging, self-paced slideshows, these activities can be self-guided for kids in grades 3-8, while K-2 learners will probably need an adult guide.

Being in nature decreases stress and boosts creativity, so encourage kids to complete the outside portions as much as possible.

To help students get the most out of the activities, we recommend you start with week one and complete the activities in order. But here are a few options for grouping if you have limited time.

- Life Cycles Activities 2-4
- Backyard Birds Activity 5 & 9
- Birds Around the World Activity 1 & 8

Join our special mailing list to receive periodic updates with activities and ideas to your inbox.

# Feeling overwhelmed?



#### Yale Partners with Connecticut State Department of Education to Launch Instructional COVID-19 Website!

There was a time in late spring when the amount of misinformation about COVID-19 seemed to be spreading faster than the virus itself. Educators and students were often left with more questions than answers while trying to manage the challenges of distance learning at the same time.

Leaders at the State Department of Education (CSDE) recognized that the materials available to teachers were insufficient for meeting the need to educate students about the pandemic. It did not take long for a group of volunteers from Yale School of Medicine (YSM) and educators across the state to come together in a collaboration to create COV-Ed, an online resource tool for educators and students to learn about the challenges of the pandemic. COV-Ed is initially targeted for the high school level.

COV-Ed, which can be used in-person or online, consists of 10 learning modules covering such topics as what makes the pandemic unique, how to think critically about information, the science of the virus and various treatments, different types of testing, prevention, and vaccination. Each module has readings, videos, questions for discussion, and dynamic activities for students to complete that are

designed to meet Connecticut State **Next Generation Science Standards** (NGSS). Importantly, each module asks students to consider the topic through the lens of equity and justice. Modules also feature the work of Yale researchers and physicians and members of the community, and highlight career opportunities in health care. Visit the site: COV-Ed - Learning Goes Viral!

https://medicine.yale.edu/coved/

#### About Young Women in Bio



Young Women In Bio (YWIB) gives girls the inspiration and support they need to become

tomorrow's leaders in science, technology, engineering and math (STEM). As a nonprofit with 13 chapters across the U.S. and Canada, we partner with leading companies, universities, hospitals and organizations to develop engaging, educational and motivational programs. We aspire to be the "go to" organization for girls looking to shape and change the world through STEM, providing them with the tools and resources they need to build successful careers.

To learn more about YWIB, local chapters events or Spring into STEM, please visit: http://www.womeninbio.org/ywi b

# **Teaching Science During a** Pandemic: A National Study of **K–12 Science Instruction**

Science teachers, from Kindergarten to 12<sup>th</sup> grade, are critical for providing accurate and timely information about urgent healthrelated issues like coronavirus/COVID-19. But how do teachers respond when important and urgent issues like these

emerge? How do they decide whether to address these issues in their teaching? What types of resources do they draw on to design instruction?

With a grant from the National Science Foundation, researchers are trying to answer these questions about coronavirus/COVID-19. Whether or not you taught about coronavirus/COVID-19, we need your help. The goal is to have over 3,000 science teachers across the country complete an online questionnaire. The results will inform how science teachers respond to coronavirus/COVID-19, as well as future urgent and emerging health issues. All teachers who complete a survey will be entered into a drawing for 1 of 50 \$100 cash awards. To read more and register for the study, please follow this link.

#### **NSTA's Daily Do**

Check out three Daily Dos, featured below, from the NSTA collection. Share your photos of your class and/or students with their families completing these Daily Dos with us on Twitter @NSTA #DailyDo and explore our entire collection of Daily Do sensemaking tasks.

- Elementary: How Do We Find Patterns in Weather?
- Middle: What's in an Egg?
- High School: Why Is Water Sphere-Shaped in Space? •

#### **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 high school: Interactions Unit 2 – How Does a Small Spark Trigger a Huge **Explosion**?

#### **Science Learning Activities for Families**

Learning in Places has created activities for K-3 students and their families to engage in science in the places they live. Learn about and explore socio-ecological systems in your neighborhood by taking wondering walks, making observations, asking "should we" questions, modeling data and relationships, conducting investigations, analyzing data, and offering explanations. Explore this featured resource: LE 1.B Family Learning Across Places.



Dear Teachers and School Leaders,

Skills21 at EdAdvance is excited to announce the second year of an opportunity for high school teachers interested in the

intersection between STEM subjects and Augmented Reality. With support from the National Science Foundation, Skills21 is recruiting a cohort of biology high school teachers this year who want to engage their class in using Augmented Reality (AR). Biology teachers will pilot a curriculum unit that incorporates AR apps and design and can be completed in the classroom or as part of remote learning. Through the Skills21 AR challenge, students in teams or individually will be compelled to develop a product, service or solution to meet a need, solve a problem or capture an opportunity to present at our online Expo Fest in the spring of 2021. These solutions should have a physical prototype and then must

be enhanced by creating an augmented reality app to deepen a person's understanding of the solution. Skills21 provides student and teacher coaching and AR support to guide your students through the process either remotely or in person.

Participating teachers will receive:

• \$1000 stipend for planning, out-ofclass time engagement and curricular review

• \$500 for project materials

Onsite or remote coaching and professional development
Participating teachers will need to:
Pilot and/or provide feedback on one Augmented Reality unit that teaches students how to use and create AR

apps.

• Facilitate a team or group of students to participate in the 2021 Virtual Expo Fest to compete in either the

NGSS Challenge or Personal Interest Project category that include an AR app

• Allow Skills21 to conduct pre- and post-intervention online surveys with their students (Fall-early winter 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 is for high school biology teachers that work with traditionally underserved student populations but all should apply.

How to Get Involved Interested teachers should complete this form or contact Liz Radday ( radday@edadvance.org) or Matt Mervis

(mervis@edadvance.org).

The National Science Teachers Association has many awards with a variety of



categories. Many include incentives to support educators attending the National Conference or the National Congress in the summer. For more information go to:

http://www.nsta.org/about/awards.aspx

From Bob Riddle: To sign up for ISS sightings: <u>https://spotthestation.nasa.gov/</u>

A link to the CDC recommendations for schools...the 9 page document you have read about in the news can be found here:

<u>https://www.cdc.gov/coronavirus/2019-ncov/downloads/community/School-</u> Admin-K12-readiness-and-planning-tool.pdf



#### **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, <u>https://ctstemfoundation.org/</u> under the Scholarship section.

#### **CEA's Safe Learning Plan**

Delayed openings, staggered schedules, distance learning, and guranteed funding are among the six specific actions outlined in CEA's Safe Learning Plan that must be taken to ensure safety for all, before schools reopen.

Read the CEA Safe Learning Plan.



In order to support the middle-grade science educator community during this challenging time, SEPUP is making available NGSS-aligned free resources for remote learning. SEPUP is the Science Education for Public Understanding Program at the Lawrence Hall of Science, University of

California-Berkeley. To access these free resources, visit <u>https://sepuplhs.org/middle/third-edition/simulations/index.html</u> The resources currently available are listed next.

#### Life Science

Cells: Modeling Cell Structure and Function Ecology: Effect of an Introduced Species

#### Evolution: Manipulating Genes Evolutions: Mutations and Evolution

Physical Science Fields: Visualize and Electric Field Fields: Electric Field Transporter Space: Moon Phases Space: A Year Viewed from Space Space: Modeling Gravity

# <mark>Earth Science</mark>

Geology: Mapping Locations of Earthquakes and Volcanoes Geology: Plate Boundaries Wendy M. Jackson, Ph.D., Lawrence Hall of Science, Curriculum and Professional Development Specialist, UC Berkely

Science Teaching During Coronavirus School Closures—NSTA Is Here to Help

- As tens of thousands of schools across the country close their doors in the wake of the coronavirus outbreak, teachers are scrambling to find materials and resources.
- To support all educators during this difficult time, NSTA is offering a free 30-day membership, providing you with access to more than 12,000 digital professional learning resources and tools. Simply <u>create</u>

#### an account here

and start developing your own personalized digital learning experience.

Check out the <u>online resources</u> we have available, including our <u>Interactive eBooks+</u>, web <u>seminars</u>, and <u>free book chapters</u>. Or take advantage of our new lesson plans on the coronavirus for <u>secondary</u> and <u>elementary</u> students. Check out the <u>NSTA website</u> daily for featured content and tips on how to use these resources.

**TIPS FOR A GREAT EXPERIENCE:** 

- Your browser can affect how Virtual Regeneron ISEF is displayed on your screen. If you aren't seeing the full screen you may need to decrease your screen resolution from 100% to 80% using the "zoom" option in the settings menu of your browser.
- All the panel discussions featuring top minds in science, engineering and technology can be viewed on the Main Stage. Choose from the list and click on launch to watch the discussion.
- If there are panels or other information that you want to save for later, click on the briefcase button. Think of the briefcase as a bookmark – you can add sessions, videos, documents and other materials that interest you throughout Virtual Regeneron ISEF and come back to them later.

### **BEYOND THE PANELS**

- View our programming guide.
- Check out the amazing research done by the 1,255 Regeneron ISEF 2020 finalists by visiting the Finalist Exhibit Hall!
- The ISEF Commons is home to dozens of colleges and universities, where anyone can learn about college admissions in the current climate.
- Visit the STEM Experiential Hall where you can access interactive and immersive experiences.
- Visit the Volunteer Office and sign up to participate in a Zooniverse citizen science project! The Society is challenging ISEF attendees to devote a collective 2,020 hours of volunteer service.
- Head to the Sponsor Hall to learn more about the amazing companies, organizations and foundations that are supporting Virtual Regeneron ISEF 2020.
- Have you been able to solve any of the Kominers Conundrums? Stay tuned for all the puzzles *and* solutions, which will be posted by the end of next week.
- Follow us on <u>Twitter</u> and <u>Instagram</u> at @society4science and on <u>Facebook</u> at @societyforscience. Be sure to tag your posts with #RegeneronISEF.

We hope you continue to enjoy the Virtual Regeneron ISEF 2020 programming! Don't forget to give us your feedback by filling out our <u>survey</u>.

In addition to Title Sponsor Regeneron, Major Sponsors are Akamai Foundation, Broadcom Foundation, Johnson & Johnson, Microsoft Azure Sphere, National Geographic Society, Rise and Siegel Family Endowment. Additional support provided by Arconic Foundation, Craig and Barbara Barrett Foundation, The Richard F. Caris Foundation, Covington Capital Management, Gilead Sciences, Susie and Gideon Yu Foundation, Carl Zeiss, Inc. and Feng Zhang Fund for STEM Outreach and Equity.

P.S. Check out the video from the Society for Science & the Public celebrating the future scientists, engineers and innovators among the Class of 2020! Join us by posting a photo on Facebook, Instagram or Twitter featuring your favorite high school researcher who is graduating this year, using the hashtag #SSPClassof2020. High Schools can celebrate their science research clubs and classes, affiliated science fairs can post photos of their senior competitors, and parents can post photos of their teenagers (perhaps even with their first science fair projects). Class of 2020, we wish you the best.



teachers who are putting together Distance Learning Activities during this unprecedented event. A page of possible resources -<u>https://csta.wildapricot.org/Distanc</u> <u>e-Learning-Resources/</u> - that we are continually updating with your input. Thanks for your contributions. Let us know about any resource that is working for you!

l

https://ctspacegrant.org/fundingprograms/studentopportunities/student-applications



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 ageare 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.