RI Science Teachers Association shares opportunities in science education for teachers and students.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |  |
| --- | --- | --- | --- |
| https://rista.wildapricot.org/Resources/Pictures/RISTA%20logo%20small.png |

|  |
| --- |
| Science Update |
| April 13, 2017 |

 |

|  |
| --- |
| https://rista.wildapricot.org/resources/Pictures/File_000.jpeg |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|

|  |
| --- |
|  |

|  |  |  |
| --- | --- | --- |
|

|  |  |
| --- | --- |
|

|  |
| --- |
|  |

***Call for nominations for new RISTA officers and board members will be sent soon.  Please consider nominating colleagues or yourself for a position. This is a great opportunity to help the science education community!***\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\**If you are interested in any of the opportunities listed below, please contact the organization that is listed. Send any items that you consider relevant to other science educators to**ristanewsletter@gmail.com***Professional Resources****New Publication on Science Instruction & Assessment available for free download**The National Academies of Sciences, Engineering, and Medicine released a report covering how students learn science and best practices for adapting instruction and effective approaches to assessment, including innovative assessment formats and embedding assessments in classroom activities.  *Seeing Students Learn Science,*was released by the NAP press.  Description: Science educators in the United States are adapting to a new vision of how students learn science. Children are natural explorers and their observations and intuitions about the world around them are the foundation for science learning. Unfortunately, the way science has been taught in the United States has not always taken advantage of those attributes. Some students who successfully complete their K–12 science classes have not really had the chance to “do” science for themselves in ways that harness their natural curiosity and understanding of the world around them.Download a copy at:  <https://www.nap.edu/search/?term=Seeing+STudents+Learn+Science>***From Achieve's NGSS Network Bulletin:***[**Next Generation Science Standards District Implementation Indicators**](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7jqM0LYRf3XVh_V6KDl7MUWAZfWwpnZjjp76JPfQ85Y3zF0kF6_o_V-1QfXe9l-yS6GZnTKcLAR-Ltd0imjiUEaGfV_N9aFbALTMyg58G92wQ35iRbIwRtmJvWAzFQp7r9_CEi1QRtaxuhdmaOnwlw=&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==) This document provides some key common indicators of successful NGSS implementation at the district level, as well as some examples of concrete actions that a district can take to achieve their implementation goals. While the path to implementation may take several forms, this document points to some common indicators or metrics of successful implementation that a district can use to monitor their progress toward implementation goals.[**Web Seminar: How do I Select Phenomena to Motivate Student Sense Making?**](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7JdVTxgEg-8pWZNE-hi-EuV4IvrSowZPhdu1lo3plEJCJRIK4-Hr9l9HCz6vWjwoLc0Q12AqczOfWzqt4V38HUYOu6Xu5uH6MAGDEP1R2_QnRbV-mrHGbEQgtonag3xRSL_wOO6jKiTssSc6bjX2IE3IjLoWHhs6US1LraXzjr1_VDbzWLWuFo82d6HSSJ7wCFf_ZPLEp6T&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==)On March 15, Tricia Shelton and Ted Willard recorded a presentation about three-dimensional teaching and learning and the explanation of phenomena, how to choose phenomena for the classroom, and how to encourage students to actually make sense of them. View a recording of the seminar [here](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7JdVTxgEg-8bD-P7vhbD34DtjvCUnLchoRRAG5vo3_0nXGr-ScYBLlEQPr46I1Vf0s2m0fvc38Mobl8YTbJohYHRQrMggMe6OyxEVIAjliUUPWDTeHQ02ZJhDV9v8RKCrosMwMdShcOom0QbG_XzEXqvK18mB4EGJz1j4yGOGkg5BWdVgPB9HgfJpoje5Rt3RJgOjXItNrT&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==)[**Report: Scaling Up Three-Dimensional Science Learning Through Teacher-Led Study Groups Across a State**](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7JdVTxgEg-8ltl-nkXdAtzZYSWMoFzeFnOnbKkgeJLAOYgTqr-vewg5Jfo2lwwezIPPfgbBeyX5poLiBBnkkKEPhXz5RrcROoQ2P55bCABAcUIUPqUHUNwVMu86b5RB7NKhwgqKNMiR590zlSLh3NoYIPrkVLg0L3qP8f0Uy5ibqBGFaI2doBo=&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==)A recently released Journal of Teacher Education report by Brian Reiser et al. describes a strategy for scaling three-dimensional science professional learning across a state, including teacher study groups, analyzing student learning, and exploring classroom interactions. The report includes best practices for design and content for teacher and facilitator learning, with particular attention to bringing high-quality and effective professional learning to scale for an entire state.[**Video: NGSS and Language Development in the Classroom**](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7JdVTxgEg-8xCqMLMK_PohYw5HZmlbVAVHbvg2M2sXShQFWfwSELkm4bjgH6Qt2RDjUhB-r7zuhhKXvTqri3RM2Pz1QZPWOLcwKr4N7xg2Tdj1zSpdbllmhkG73lCWXjg==&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==)A district in Oregon, Beaverton School District, created a video to illustrate how NGSS supports language development. The video shows 4th grade students from Beaver Acres Elementary exploring a local phenomenon and using evidence to share their thinking and reasoning. The video illustrates the role language plays in science and how the NGSS practices in particular can help improve language skills. See more information about the class and lesson shown in the video [here](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7JdVTxgEg-8yvHWvCXKd8eCfzc3XOr7-eQ9ZEj1GQf3y4mJAF9edal7hSmLbpZUsTlP_pWpWuUDc9c0M9RpIwB-rf93zwnXMZPa9uUvS8G_BmUqrxfR7rFJGH-pzOdS4f3q8h3r2xKreshrElg_zjGkYNPNAi5kralpJTGLyrjmVAmc8qvI9wEYFDsicAJgYaBY2pVE_A7yxtcmbl6lWUhjj9KW7ySxKTxv7ZI6dSIK&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==) To read more about teaching science and language with English Learners, see [this article by NGSS writer Okhee Lee](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7JdVTxgEg-8ZDqE7eNKY222oRHpYRFj90p4Rrmsh2ZVeDvT43dG05V9LKfLe232suek3-iaYn8f54ORfYyEmOEGOVCl5yTP4aueh21oKb8UPwUJNzzVtvT-LbMXYFWNVC5B9P1ybcxcfwoO-9voRWLYnJXVsqkSurj9MZZdMTatbhuRaufMJ9hEXTicZbjrLYi6RNlp9XUoEpm0x9-o9E-fnJ_EU7s2EEopaG96qNCS9XT7V3crGXI=&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==)[**Three New STEM Teaching Tools Policy Briefs**](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8MyBlYzSE-bmviKWMbVTIf4dznxXVDu9VMXbMfWCwEwMpqbsnNoqVpUT1Ee04yuMfDGp9KMJZalcqDcFM5ETlTSVNZQYh4WV256SuCl-WyLWfcaAlvIdZgwV88xmRGwCtrq5HcJNHqiyY&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==)Three new Policy Briefs were released in March addressing different science classroom challenges. These policy briefs go over things to consider, attending to equity, and concrete recommended actions you can take to address each issue at hand.* [How to define meaningful daily learning objectives for science investigations](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7JdVTxgEg-8jHWmQ9oVVXEwk2KAksV-k-uEoiA44LPEDKSnFLKuVQ3Bq06LjyNWLEh5W1aH-bDODNuhKEB4vng1T_CxRRKiiEporVFmh3klhn4EdU6SHNmTWjUK1KkRSOm3o9ljbOlQSmv3DsZPiOFrDyr7Wi79sNNKX5j3Zx9hPQ7Et0gMGQpqTbvSnOs5xRpxVZu8TEADkcpggpqI_9CRI63sHcg_pEolm9W0QrtbShD40ZGYtKEIWkKF3sJHTd1eRxi4gPK99W2jWm3uba0=&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==)

 - This Brief was released to help teachers identify a learning target or objective to post on the wall (a common requirement for educators) that doesn't "give away" what students should be figuring out themselves throughout a lesson. The brief was written by Bill Penuel, Michael Novak, Tara McGil, Katie Van Horne and Brian Reiser.* [How can I promote equitable sensemaking by setting expectations for multiple perspectives?](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7JdVTxgEg-8IBOcMLAzuTtNnwaHHDWtcjKQXeUDagffqRh3WWrDA4eJYwgdmBwjJZsk2EvY6JvfVuak-PFtglkaY4dY9gM-6J2q23AtZjGgvVRgJvGvKyGAl7sP6GElh7L_2oObq60q&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==)

- This Brief promotes equitable learning and encouraging educators solicit, clarify, and consider various student perspectives when they're making sense of phenomena. Written by Emily Miller, Maria Simani, and Angela Debarger, this brief offers concrete recommendations to reach all students when engaging in this important activity.* [How can teachers guide classroom conversations to support students' science learning?](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7JdVTxgEg-89Z6tOr_6_XsC5_Q9zUkXOYX-Y5E_lcAMRKm0Rv84XOfrXrfK1aLNOR6X9OTtGBQLQrWgANTWxW-CJC6I3NdR9e2oI5J0PoxuiR8t-bOdSch2LUv5FBYKBp4Gtj-bRlJm&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==)

**-**This Brief addresses how educators can facilitate and scaffold student talk and conversation in science as a way of engaging in sensemaking, learn about student ideas and thinking, and encourage the use of scientific language. The brief includes links to additional tools, such as [Talk Resource Tools](http://r20.rs6.net/tn.jsp?f=0017bRv0VqiBzx-zZ_S2-pAzsPKMnrzay0gcwnA_mj2ERT4EaF0bqz8M7JdVTxgEg-8HRvpZaE0PZwwHQCxCQMkPul1-GqE4ZlkrmGk7mp1SqitZNjfOFliItTBkoxwPOtorgV0Mx_xsSq9bpIlrGNNX3Wtr29aHeRC23DiaAIpja1s9cI-0RSPgEjkiPo0sbtZ&c=e09MS1ddB1cIk0NXnKUUrwo8bcPzvcH74acoyLEFX_2ASEfGF5yWGA==&ch=ySMRTFG18NubgOCKqr-RoyAw3UQDX9R6fS0pwTsEYbdHrVzmlMvKrA==) **Professional Opportunities****The** **Presidential Awards for Excellence in Mathematics and Science Teaching**(PAEMST), the nation’s highest honor for teachers of mathematics and science (including computer science), has opened its 2016 – 2017 nomination and application period for 7-12th grade teachers.  We encourage you to nominate an exceptional teacher you may know. If you’re a teacher yourself, we encourage you to begin an application online today. Being a PAEMST awardee is a tremendous honor. Recipients will gather in Washington, D.C., for [a series of events](https://www.whitehouse.gov/blog/2016/09/09/honoring-nations-leading-science-and-mathematics-teachers-and-announcing-active) as tribute to their accomplishments, will receive a certificate signed by the President and a $10,000 award from the National Science Foundation (NSF).  The 2016-2017 nomination deadline is April 1, 2017, and the application deadline is May 1, 2017, so consider nominating a talented teacher or submitting a self-nomination on the [PAEMST website](https://www.paemst.org/?campaign=2017CycleLaunch) today.**RI Teacher at Sea**GSO is planning another three-day educators cruise during the August 4-18, 2017 time frame.The program is open to Rhode Island educators who teach in Rhode Island in a K-16 setting. Educators of **all disciplines, both formal and informal**, are welcome; **participants are not required to be science educators.**The deadline for applications is **May 1, 2017**. General information about the RITAS program and an application form can be accessed at:<http://omp.gso.uri.edu/ompweb/content/rhode-island-teacher-at-sea> . Should anyone have any questions please do not hesitate to contact Maryann School at mscholl@uri.edu**Participate in Pilot Testing of Biology Assessments**As part of two projects funded by the U.S. Department of Education, AAAS Project 2061 is developing assessment questions to measure students' understanding of ideas about biology such as natural selection, heredity, speciation, human body functions, homeostasis and cellular respiration. We are currently recruiting high school science teachers willing to pilot-test these assessments with their students in the spring of 2017. The assessment is administered online and should take no more than a single class period.To participate:* You must be a high school science teacher in the United States.
* Your students must be in grades 9-12.
* You must be able to reserve enough computers that have a reliable internet connection for all students in your classes on the day of testing.
* To register, go to www.research.net/r/BiologyPilotTest

If you have questions about the study, please contact jhardcastle@aaas.org.**URI SPRING FESTIVAL**Saturday, May 6th 2017 from 9AM - 1PMNEW LOCATION!  URI Botanical Gardens and Fine Arts Parking LotURI Cooperative Extension hosts the East Farm Spring Festival annually to highlight the work of the URI Master Gardener Program and the research and Cooperative Extension activities at the farm. The event draws an estimated 3,000 visitors annually, and is growing.Due to space restrictions at East Farm and the overwhelming success of the event over the past 15 years, the ***URI Spring Festival*** *will be held on the main campus this year*. Please plan to join us for plant sales, music, food, interactive family activities, free soil pH testing and more.**Free Professional Development Opportunity from the FDA**Foodborne disease outbreaks and food recalls frequent the news. What organisms cause these diseases? What can an individual do to protect themselves from these diseases? What measures are being taken by the federal government to prevent transmission of these diseases?Science, health, and family and consumer science teachers have an opportunity to provide inquiry-based lessons related to these outbreaks and recalls.  Lessons can be found in the curriculum Science and Our Food Supply developed jointly by FDA and NSTA. And, in order to prepare teachers to use these lessons, FDA provides a free multidimensional professional development program that will take place July 16 – 23, 2017 in Washington, DC. Included in the program are transportation to and from Washington and all housing and meal expenses.During the program, selected teachers will participate in activities such as the following - meet with FDA and USDA scientists to learn about their current research on foodborne diseases and nutrition; work with instructors at the microbiology lab at the University of Maryland to learn proper techniques to use in doing microbiology labs with their own students; and, tour USDA’s farm in Beltsville, MD.Selected teachers are asked to implement the curriculum in their classrooms during the 2017 - 2018 school year and to do a hands-on workshop on the curriculum for other teachers. To apply on line – deadline April 18, 2017- go to:   <http://www.teachfoodscience.org/apply.asp>The Science and Our Food Supply curriculum guides on which the summer program is based are available from this website <http://www.fda.gov/Food/FoodScienceResearch/ToolsMaterials/ScienceandTheFoodSupply/default.htm> We strongly suggest you review these guides before applying for the summer workshop.For more information, contact Mimi Cooper at mimicooper@verizon.net.    Please feel free to share this information with your colleagues.**Student Opportunities****26th Annual MSMR Student Competition**Students in grades 7 – 12 are invited to submit an essay, poster or website in response to the Competition Challenge. The Student Competition is open to students from all New England states and from public, charter, parochial, independent/private and home schools. Students in grades 7 and 8 will be in the Level 1 group and students in grades 9 – 12 will be in the Level 2 group. The Challenge is the same for both Levels.Winning students receive awards up to $500 plus certificates and books; their teacher or mentor will receive a classroom grant of up to $100. Winning students, their parents and teachers are invited to the MSMR Annual Meeting luncheon in Boston in late June, where the awards will be presented and their work will be posted.Please tell your students – and colleagues – about this opportunity. Here is a link to detailed information, the Student Packet and Entry Form. The deadline for submissions is May 8th, 2017.**Classroom Resources****Free online resources from Everfi**Rhode Island School's now have access to 3 free online STEM resources through a partnership with EverFi! Teachers can register at [everfi.com/register](http://everfi.com/register) by searching for their school. Reach out to Luke Martin at lmartin@everfi.com for more information.[**Hockey Scholar™**](https://tracking.cirrusinsight.com/20aae0e3-2c04-4c27-8261-6405f27256df/futuregoals-nhl-com)***(grades 5-8)***is a web-based STEM program that uses the game of hockey to teach foundational math and science concepts. It consists of twelve, 10-20 minute modules, sorted according to subject area. Activities include: understanding area/volume of an ice rink, exploring conservation of energy of a falling puck, and learning about speed/velocity using skates.[**Ignition - Digital Literacy and Responsibility™**](https://tracking.cirrusinsight.com/230eee27-f5d0-4e37-90e5-8812d80505e5/everfi-com-k12-ignition)**(grades 6-9)** is a 3-4 hour course that informs students of the nuts and bolts of how technology works while placing them in virtual environments to tackle issues surrounding digital citizenship.  The course aligns to the international society for technology in education (ISTE) standards and can fulfill the CIPA requirements for eRate funding.  Upon completion, students enter a gaming simulation where they will demonstrate their mastery of digital skills, such as creating a blog, managing a social networking site, and working to resolve a cyber bullying situation.[**Radius - STEM Readiness™**](https://tracking.cirrusinsight.com/9c417185-79c8-445b-b1b8-27bd5f182844/everfi-com-k12-radius)**(grades 8-10)** features 16 modules, aligned to the Common Core Math & ELA standards, covering topics ranging from the real world application of algebra to basic computer science and STEM career exploration. Students will learn and apply skills to solve real world challenges, such as repairing a bridge using linear equations, while using basic coding and HTML exercises that build upon one another.     **Field Trip opportunities at Frosty Drew**Frosty Drew Nature Center is booking now for its Spring Field Studies Programs! Choose between **Estuary Adventures** and **A Barrier Beach & Its** **Estuary**for an outstanding opportunity for your students to use Ninigret National Wildlife Refuge as an “outdoor classroom.”Dates for booking your field trips in May 1 – June 30 are presently open.  Please contact us via email (fieldstudies@frostydrew.org) or by phone 401-859-1450 to reserve a spot for your students.The brochure for Spring 2017 is attached and ready for dissemination.*A field study program can supplement your regular classroom curriculum with an active approach to nature in an environment that most organizations cannot duplicate and at a price that budget administrators find attractive.**Your students can expect many opportunities to inquire, observe, assess, learn, and better understand the interactions of the living environment around them.****Your students’ participation is encouraged during their hands-on, minds-on field study as they can come to understand the interdependency of humans and nature and learn about personal environmental stewardship****.*This year, with support from the Dime Bank Foundation and from the Billy Andrade - Brad Faxon Charities for Children, Frosty Drew Nature Center is able to offer limited financial assistance for busing and fees for qualifying schools.Please let us answer any questions you may have.  We are sure your students will enjoy their time with us! |

 |

 |

 |

 |