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

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| Science Update |
| November 5, 2016 |

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***Save the Date for RISTA's Annual Conference!!*****Saturday, March 25th at New England Institute of Technology in East Greenwich.*****Featuring Keynote Speaker, Brian Reiser******Request for Proposals for breakout sessions will be sent out soon!***\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\**If you are interested in any of the opportunities listed, please contact the organization that is listed. Send any items that you consider relevant to other science educators to*ristanewsletter@gmail.comProfessional Resources* The NSTA Learning Center has recently been updated with a sharp new look and enhanced features, including a simplified interface and navigation. [Check it out](http://learningcenter.nsta.org/).
* The United States Science Support Program (USSSP) is now accepting applications to sail on the JOIDES Resolution (JR) as an Onboard Educator on one of the upcoming expeditions. The JR Onboard Educator/Outreach Officers sail on the ship to share the science story with students, families, and the general public. Selected applicants learn shipboard science and translate the exciting science happenings through the creation of bogs, videos, social networking sites, live ship-to-shore video events and development of educational resources. All expenses for travel to and from the ports of call, and a stipend are paid by the U.S. Science Support Program for IODP. For more information, please visit the following link: <http://joidesresolution.org/node/453>
* Phenomena are an essential part of implementing the Next Generation Science Standards (NGSS). But what are phenomena, and how can they be used? A new resource has been developed for educators to provide guidance on how phenomena can be used in NGSS classrooms to drive teaching and learning. [Click here](http://r20.rs6.net/tn.jsp?f=001f7jpKNuFNuB6bumJKGTWCBCCHaHXsYdd0oecD5SmQoEYBGn_RBoSKqJOcbcYKfeZ9j47IkLZCakK8Ff_Sebb0uAT-gxkFqa5CqPPlstLgDW3tBRiU7LyI7e7pE2j-TvttoSHA2d2rTnTPXnIR89ADW14wHygvYkpsTSbuSakmu9a3x6bmsUphkJGZ9VREkOUe3Mw_4F3VeroXjL-8Cih3A==&c=29OBLNZZo8ndiCRhZjtHEmBIrMGxozG2Q57GmTHP49YNpYWJHJNfhQ==&ch=DysXcdELs23zVCtgv_b2ctT1N9s9XFzdPyTogzPU7cDVs7WeW1MFqg==) to learn more about using phenomena in NGSS-designed lessons and units and to watch a three-minute video.
* NSTA is making its popular web seminars on the Next Generation Science Standards (NGSS) available to educators on YouTube. The latest installment includes a series on disciplinary core ideas. From engineering to heredity, and from waves to motion and stability, [the 12 videos](http://www.mmsend53.com/link.cfm?r=2CPoRebKV1f59GgkAl1N1Q~~&pe=LX01PBkskvubIMhMhWXUYrg-u0AoYhXaQw5ULgsJL3L1BMhBz2yKgH4gN2WAgUz87jcf3Atd9TJYQSHlDF_G4A~~) will give educators of all levels a great primer on the core ideas.
* The [EQuIP Rubric for Lessons & Units: Science](http://r20.rs6.net/tn.jsp?f=001f7jpKNuFNuB6bumJKGTWCBCCHaHXsYdd0oecD5SmQoEYBGn_RBoSKpA60XIuKCsddxv1nQr-b0jl6Fl_ekxdSpQUBvdPeYvU2AusV7aPYblTsM1FXpfyGJi2MF4X56NeCFktRdSrkKyj22b0iRAw-vchNOx-0o9DRzgULd96rkqrmmYLFycI1QY57dhTLyWqMXM-3r_5O7x5MHB4fJbLj9NZRf7TtkXUPp0KHzUe9AUXu_imK0gtXg==&c=29OBLNZZo8ndiCRhZjtHEmBIrMGxozG2Q57GmTHP49YNpYWJHJNfhQ==&ch=DysXcdELs23zVCtgv_b2ctT1N9s9XFzdPyTogzPU7cDVs7WeW1MFqg==" \t "_blank) has been revised! [The updated tool,](http://r20.rs6.net/tn.jsp?f=001f7jpKNuFNuB6bumJKGTWCBCCHaHXsYdd0oecD5SmQoEYBGn_RBoSKqJOcbcYKfeZiL3wZqdgrN4S7kfu8jROk-fl4J9Ykygd05pSOALqECHOaddpgykgV6SQwCEcerDtqcCpXPgV0I6UOmaoG3-gZ1q6e52BuCFoenfHkR8XcF1nT-tSAyCqC3c0DzCecSxFkvIJFMH3V8Mp0aU3zE-s7CdDIqZ59TnbR97TYmwylwNeZ5vCuUPqPmimQ2K1Zh5a2hjYHfi3npYjFo_qfBO6uo17bfBMjH0v&c=29OBLNZZo8ndiCRhZjtHEmBIrMGxozG2Q57GmTHP49YNpYWJHJNfhQ==&ch=DysXcdELs23zVCtgv_b2ctT1N9s9XFzdPyTogzPU7cDVs7WeW1MFqg==) Version 3.0, includes a scoring guide for rating the degree to which high quality science lessons and units are designed for the Next Generation Science Standards (NGSS). The latest rubric will be used to evaluate instructional materials for Achieve's new EQuIP Peer Review Panel for Science.
* The NGSS Example Bundles (formerly known as the Model Content Frameworks for Science) demonstrate ways that curriculum developers can bundle the NGSS within a school year. "Bundling" is an important strategy for implementing standards, as it helps brings coherence to classroom instruction. The third set of bundles has been recently released. All of the currently available NGSS Example Bundle resources can be viewed [here](http://r20.rs6.net/tn.jsp?f=001OtXdtYM2IVO6YVl9KmSxIczMIjiILPlR6G0w7FyHdqUi7VC-ryt6afhvDZd0dd3Bf4_WX2BEutm6gqqqP9DdGDi-PKjo0v9lWjREz1soLan_zPjiDI3IJkWIo5oAgioSKR0Yx9xs2lB7t6c80Mg4X_2x7nmiY5zbhCCRLjJ0FzagDwDLMyk_8rDAM42A4bBlArD5-WhNIgNOqSXkeKXs8Q==&c=hbHcVT8CAXtIDWDptdEWcjcIceRpL0odF5leBQBf_5AeDUadNhd4Jw==&ch=2VFXdMwyc7meMpUM8QQQyZS-RZ70JFT5aQjapfaDwS8kBExWZaLuSg==).

Professional Opportunities* Are You Ready for the **Astronomical Event of the Decade**?August 21,2017 will be the first total solar eclipse visible in the US in almost 40 years.  Everyone in the US will see a partial eclipse, but only those people in a narrow 60-mile across band will see the total eclipse.  The website <http://eclipsewise.com/solar/SEgmap/2001-2100/SE2017Aug21Tgmap.html> provides an interactive map where you can get details regarding the eclipse for your location and where you have to go to see the total eclipse.NSTA (National Science Teachers Association) produced an Eclipse Observing Guide [http://www.nsta.org/publications/press/extras/files/solarscience/SolarScienceInsert.pdf](http://www.nsta.org/publications/press/extras/files/solarscience/SolarScienceInsert.pdf%C2%A0) that you will find useful. It provides details about the solar eclipse, what causes it, and how to view it safely.The eclipse may seem some time away, but housing along the path of totality is already filling up, so the time is now to beginning planning for this astronomical event of the decade.
* RI College Offering **Graduate Course on Next Generation Science Standards** Spring, 2017  Join colleagues from around RI in a course focused on the Next Generation Science Standards. [See brochure for details and registration information.](https://drive.google.com/open?id=0B_CKozhXUcpmTDBUejJELWxyV3lWbkIzN3BWeFpoYVFSZjVr)  Contact Dr. Rudolf Kraus for more information at rkraus@ric.edu
* **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!
* The 2017 **Lorraine Tisdale Environmental Education Award**- Each year the Environment Council of Rhode Island’s (ECRI) Education Fund gives out small grants to Rhode Island schools and school-based after-school programs for hands on environmental projects by students that benefit the local environment.  Schools and after-school programs can use the application enclosed with the note, request an application from the ECRI’s Education Fund, or download one here  <http://environmentcouncilri.org/sites/default/files/sites/all/files/news/Tisdale2017app_1.pdf>   We are pleased to offer 3 grants of up to $250.  All Rhode Island schools and school-based after-school programs are encouraged to apply, and an ECRI Education Fund representative will be happy to answer any questions to help schools with their project application. We can be contacted either by email here or by phone at 621-8048.**The application deadline is November 22, 2016** and awards will be made in January 2017 for projects to be undertaken in the spring of 2016.  Application and further information is available here   [http://environmentcouncilri.org/sites/default/files/sites/all/files/news/Tisdale2017app\_1. pdf](http://environmentcouncilri.org/sites/default/files/sites/all/files/news/Tisdale2017app_1.pdf)
* The [Albert Einstein Distinguished Educator Fellowship](http://science.energy.gov/wdts/einstein) is a paid fellowship for K-12 math, science and technology teachers. Einstein Fellows spend a school year in Washington, D.C. serving in a federal agency or on Capitol Hill. The deadline for application is November 17, 2016.
* The **Captain Planet Foundation** is accepting applications for small grants totaling $500-$2,500. Grant activities must be project-based, performed by youth and have real environmental outcomes. Visit the Web site to learn more about eligibility and restrictions and to fill out an application. The next deadline for applications is January 31, 2017. [http://captainplanetfoundation.org/apply-for-grants/](http://captainplanetfoundation.org/apply-for-grants)
* **Advancing Health Career Education in Rhode Island Schools Summit** (see <https://advancingrihealth.com/>) is designed specifically for middle school and high school mathematics teachers, science teachers, guidance counselors, and school principals.  We are proud to have Commissioner of Education Ken Wagner serve as one of two keynote speakers. In addition, presenters will include representatives from the RI Department of Health, the state's largest healthcare employers, health career education experts, and policy leaders.  The program will share current information regarding the following topics:  High demand healthcare career opportunities, the skills and educational pathways required for success in these roles, including curriculum pathways, specific pedagogies and skills that can be taught and integrated immediately into real classroom settings, and mentorship, internship, immersion practices that have shown promise in preparing students for successful college and career pathways in healthcare.  The summit will take place on Tuesday, November 15th from 8:30 am to 12:30 pm at the Crowne Plaza Hotel in Warwick.  Breakfast and registration will begin at 7:45 am, and attendance is free.
* **New England Science & Sailing** (NESS) Foundation will host professional development sessions for Pre K-12 science teachers.  For more information, teachers are encouraged to visit [nessf.org/schools/professional- development](http://r20.rs6.net/tn.jsp?f=001P5UZA9CX8V0FS4WpipI10Z45ig7eHkiU8UkUns-uUbf74-AC5nIIYlPlEV8Ut5yAM05c7klFBs15q6FyEP7H7z1Dwe8uhkNXWgrcC6S2liVqFfJ5Y13SZpzqCYejtYPMsbt-9kSP1Td6sGOsCgpGdscpYqM3m2MVKPZRO0rpiuK1lZ9eQchwyxcWeEzYzO-5Aes5CUlGj68rPTB6Nybvag==&c=CKbCbzAJjN-U262x2zueT_rO9CvHlhFTpSmUfdtMFk7jwi4vumPH-Q==&ch=S1BppFTTwUz-vIrAmJgqqm3BQcBqvj6dAxyZQ0rkOkSfzbeWlsHE9g==)  Pre-registration is required and space is limited for all sessions. **Teachers who register for five or more days will receive a 10% discount on a 2016-2017 NESS academic program.**NESS currently works with schools and organizations in CT and RI to teach STEM (science, technology, engineering, and math) concepts to students during the academic year. In addition, NESS educators support teachers' curriculum by incorporating Next Generation Science Standards and Ocean Literacy Principles. For questions about NESS's school programs, please call [860.535.9362](http://www.rista.us/file%3A/localhost/tel/860.535.9362) or email Pam Gibbs at pgibbs@nessf.org
* Are you a science teacher succeeding in providing exemplary lab instruction with minimal equipment and resources? [The Shell Science Lab Challenge](http://www.nsta.org/shellsciencelab) offers you a chance to compete to win a school science lab makeover, valued at $20,000, by sharing your creative approach. Middle and high school science teachers (grades 6–12) in the United States and Canada are encouraged to apply. The deadline for submissions is January 23, 2017.
* Funding for professional development for teachers is becoming increasingly difficult for schools. Fermilab Friends for Science Education will offer scholarships for teachers to attend summer workshops. The online scholarship application will open November 28. For more information, go to <http://ed.fnal.gov/ffse/ed_ffse_scholarships.html>

Student Opportunities* Registration for eCYBERMISSION, a web-based STEM competition free to students in grades 6–9, is [now open. eCYBERMISSION](http://www.ecybermission.com/) challenges students to develop solutions to real-world challenges in their local communities. Register your complete team by December 7.
* Engage students in STEM education with [The Bright Schools Competition.](http://brightschoolscompetition.org/) In this freecompetition, middle school students (grades 6–8) explore the links among light, sleep, and student health and performance. Registration is now open, and projects are due on February 6, 2017.
* Registration is open for the [2016–2017 Toshiba/National Science Teachers Association (NSTA) ExploraVision competition,](http://www.exploravision.org/) kicking off the 25th year of the world's largest K–12 science competition! Student participants will have a chance to win a number of great prizes, including $10,000 U.S. Series EE Savings Bonds (at maturity). Learn more and register by February 6, 2017.

**Classroom Resources*** World of 7 Billion Video Contest-Back by popular demand, the *World of 7 Billion*student video contest can help you bring technology and creativity into your environmental science high school and middle school classes. The contest challenges students to create a short (60 seconds or less) video illustrating the connection between world population growth and one of three global challenges: climate change, ocean health, or rapid urbanization. Students can win up to $1,000 and their teachers will receive free curriculum resources. The contest deadline is February 23, 2017. Full contest guidelines, resources for research, past winners, and more can be found at [https://www.worldof7billion.org/student-video-contest/](https://www.worldof7billion.org/student-video-contest)
* BirdSleuth just released its newest kit [Dissecting the Food Web: An Owl Pellet Investigation](https://store.birds.cornell.edu/ProductDetails.asp?ProductCode=BIRDSLEUTH-OWL&__hstc=266496273.0ecd33186b176f6b7abced9d91c14d75.1473451799360.1473554213470.1476742230593.4&__hssc=266496273.2.1476742230593&__hsfp=526513276) and will have a webinar to introduce teachers to it. In this webinar, educators will: become familiar with the kit; differentiate a food chain vs. a food web; Understand the importance of owls in ecosystem interactions; learn how owl pellet dissections can meet NGSS and CCSS Standards. This webinar is free and open to all educators, but targeted to elementary and middle school teachers. Choose the date that works for you and register: Wednesday, November 16 @ 6:00pm ET or Thursday, November 17 @ 8:00pm ET.
* During National Cybersecurity Awareness Month, introduce students to digital citizenship with this collection of [cybersecurity resources](http://mass.pbslearningmedia.org/shared/1029853/4394565/?elqTrackId=D465E88A3B76CF4F4E3F58C739127CF8&elq=aa98ac95c2704f80ab6de77aec048ee9&elqaid=3627&elqat=1&elqCampaignId=1837) curated by the NOVA Education team! Teach students how to spot phishing scams in emails and websites, and introduce them to encryption with our Cybersecurity Lab game and videos.
* Elements are the hidden ingredients of everything in our world. To unlock their secrets, NOVA's Hunting the Elements spins viewers through the world of weird, extreme chemistry. [This collection](http://illinois.pbslearningmedia.org/collection/nvhe/?utm_source=lmnews&utm_medium=email&utm_campaign=mktg_2016) will allow you and your students to explore this fascinating chemical landscape and take a tour across the periodic table.
* Chemistry & Physics for Grades 9-12 features resources for teaching advanced high school chemistry and physics. Each 30-minute video provides content while providing clear opportunities to pause the program and interact with your students, engaging them in discussions, problem solving, and laboratory activities. [View Collection](http://illinois.pbslearningmedia.org/collection/chemistry-physics/?topic_id=1715&utm_source=lmnews&utm_medium=email&utm_campaign=mktg_2016)
* IEEE Educational Activities has developed over 130 free lesson plans designed for classroom or home school use…all use low-cost and simple materials to engage students in hands-on exploration of engineering and computing. Lessons are aligned to standards and many can be completed within an hour. Search lessons by topic or age group at <http://tryengineering.org/lesson-plans>! Then participate in the new #IEEE Lessons in Action Campaign by sharing photos from your classrooms creatively implementing one of the lesson plans. For more information go to <http://tryengineering.org/photo-contest>.
* House In The Wood has [lessons for grades 3-12](https://houseinthewood.com/outdoor-education/#lessons-activities) based on Common Core and Next Generation Science Standards written for their marsh, but can be modified for your schoolyard. It combines GPS, area, percentages, food webs, biotic members, abiotic factors and habitat conservation. This leads directly to a schoolyard habitat map and projects related to improving your schoolyard. Here is a [helpful online tool](http://content.yardmap.org/) from Habitat Network for documenting your school yard habitat AND planning any changes.
* On the [National Oceanic and Atmospheric Administration's Ocean Explorer Education Theme Pages](http://oceanexplorer.noaa.gov/edu/themes/welcome.html), students can explore ocean science topics like Archaeology, the Arctic, Bioluminescence, Cold Seeps, Deep-Sea Corals, Seamounts, and Vents and Volcanoes
* Ocean First Education's [Live Ocean Data website](https://www.oceanfirsteducation.com/research/live-ocean-data) challenges middle level and high school students to increase their knowledge of oceans by learning to analyze and interpret live ocean data.
* Want to be a citizen scientist? All you need to contribute to the National Aeronautics and Space Administration’s studies of our home planet is a smartphone, access to the outdoors and the [new "GLOBE Observer" App](http://observer.globe.gov/). The initial release of the app allows users to collect observations of clouds, which are a critical part of the global climate system. Additional types of observations are planned.
* The [Bottle Biology website](http://www.bottlebiology.org/) offers ways recyclable containers can be used to learn and teach about science and the environment. The projects promote science as a tool that everyone can use to explore the world. These explorations can be integrated with history, art, music and more.
* Curious about nanotechnology, sustainability, or life in science? [The Sustainable Nano podcast](http://www.nisenet.org/catalog/sustainable-nano-podcast) is produced by the Center for Sustainable Nanotechnology, a chemistry research center funded by the National Science Foundation. Episodes focus on what nanotechnology has to do with sustainability, car batteries, viruses, and more.
* Visit the [classroom resources](http://www.mmsend53.com/link.cfm?r=2CPoRebKV1f59GgkAl1N1Q%7E%7E&pe=qjAI1EUmZTFLsUNgjkGjFmLcCdlBFKRtyntoHj-YFzAdVFZaglQpJiKRBZpcZdKbFixEyoxsyvrNfrSzQuhGEQ%7E%7E) in the [NGSS@NSTA](http://www.mmsend53.com/link.cfm?r=2CPoRebKV1f59GgkAl1N1Q%7E%7E&pe=U4b1fN0lYS3c5QI5gA7gwqHp8uh0J8lhov5XgJnFG76fSNqaXM3-EmU1CdoNkla44ZNeZu2eT5ygVhAVwKGnPw%7E%7E) Hub. **NSTA** educator-curators have selected nearly 400 lesson plans, book chapters, videos, simulations, and more, and suggested specific modifications to improve how they build toward the standards based on the EQuIP rubric. These concrete examples are a great guide for teachers of all grade levels.
* Just getting started with **project-based learning** (PBL)? Explore Edutopia's [curated compilation](http://www.mmsend53.com/link.cfm?r=2CPoRebKV1f59GgkAl1N1Q%7E%7E&pe=1V2knMdPDiRFOc_q12G0dyX-_ha1SQ_cjhipW5BRzMo6dC-ynfp7e1-In4h8d5pkFi6AXL_U1NL3wIYv7wfGBQ%7E%7E) of online resources for understanding and beginning to implement PBL
* Show middle level and high school students that scientists have rich personal and work lives with **The Secret Life of Scientists and Engineers**, a [video series](http://www.mmsend53.com/link.cfm?r=2CPoRebKV1f59GgkAl1N1Q%7E%7E&pe=5mkbqds_u84EVbN2Mp862sohaimUs2JWoSgcPchZi2xDrs61fQdLwIi7uHfQz-mEMH95uAzV0DSXWsfswZqZ_A%7E%7E) that profiles notable and charismatic scientists.
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