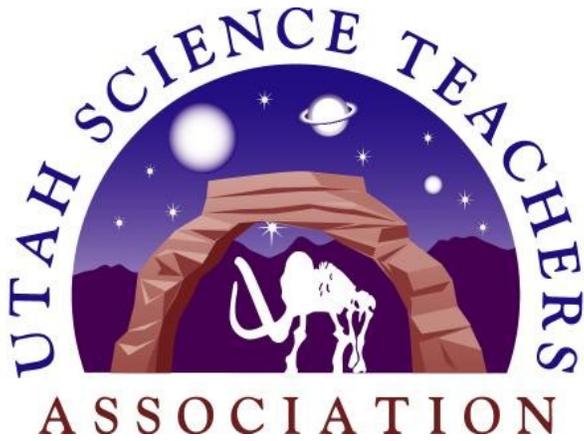


Winter 2014



Passing the Gavel
Doug Panee to Josh Stowers
New USTA President



As a first order of business as the new USTA President, on behalf of the Utah Science Teachers Association I would like to extend a special thank you to Doug Panee for the last two years he has spent serving as our President. Few people understand the time, energy, and commitment Doug has put into the improvement of science education in our great state. As a colleague and friend, I look forward to his continued service with the board as Past President. JoAnne Brown and Paul Nance have finished their terms on the board. Their wisdom and energy will be missed. I would also like to thank each member of the USTA board for the countless hours they volunteered to prepare for our conference.

I hope that each of you who attended the conference had a positive and reenergizing experience. I know that I came away with many new ideas and a renewed vision for where I want to take learning in my classroom. We had outstanding presenters in each strand. Many attendees took advantage of the opportunity to swap ideas with colleagues. It is conferences like these, along with other professional development opportunities, that light a fire under me and help me recognize new ways to reach my students. Rubbing shoulders with so many dedicated teachers reminds me that we are engaged in a great work. That work includes doing all we can to prepare our students for a productive life in our society.

The challenge I have often faced after an outstanding conference is returning back to the classroom and finding the time to implement the many exciting ideas I found. May I challenge each of us to set a time over the next couple of weeks to sit down and review our experience from the USTA Conference. Determine the ideas you can still implement this year to better engage and enrich your students' learning experience. If there are topics that have to wait until next year, make a note so you will remember what you wanted to change. As we get into the long March to mid-April stretch, look for one new way to spice up a lesson.

There have been many changes with USTA over the last two years. Our conferences have continued to grow and improve. The introduction of our new website at www.utsta.org has opened up better options for communication with members and sharing information. We are working to develop the resources found on the website. USTA is now coordinating many of the summer professional development classes which have traditionally been offered through USOE. We are excited to see continued growth for these courses as we provide quality continuing education opportunities. We continue to strive to fulfill our mission of promoting and supporting improved science teaching at all levels. We are working to better support our elementary teachers and science teachers in non-traditional settings. In short, we are here to help you. Please let us know through your Region Representatives how we might better support you.

I appreciate the opportunity to work with and serve the science teachers in the great state of Utah.

Warmest regards,
Josh Stowers

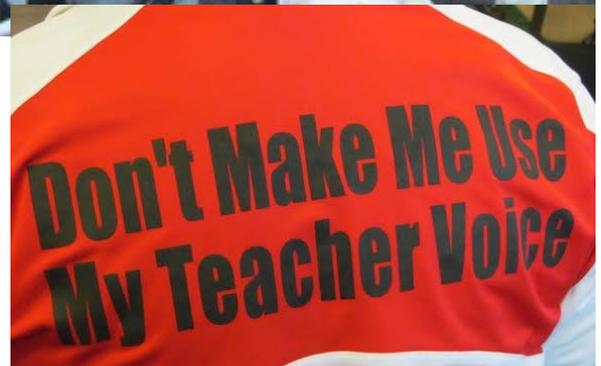
2014 Mid-Winter USTA Conference

This was as fun and informative conference. Enlarge the viewing to 100% and enjoy. Thanks to Cheryl Dering for the good photos. If the pictures aren't too great, I took them.



Derek Muller was a fantastic opening speaker who engaged and educated as well as entertained us. He picked on the intelligent as well as the bald .

The Awards Banquet was another highlight. Duane spoke as did Derek Muller. We honored the Donna and Al Hrynshyn for their commitment to USTA through the years (and past presidency).



I can't believe we had over 600 participants here. A new record.



2014 Mid-Winter USTA Conference and Awards



Duane Merrill's awards speech quotes Will Rogers: "There are 3 kinds of men. The 1 that learns by reading. The few who learn by observation. The rest of them have to pee on the electric fence for themselves."

We were able to test and learn more from Dereck Muller as well as honoring some of the finest people in the state.



You voted to have the logo stay the same.



USTA February 2014 Skip these pages to get to some great information!

2014 USTA Award Winners and Banquet



2014 USTA Award Winners and Banquet



Teachers are never fun or silly.

THANK YOU

JoAnne Brown and Paul Nance for the hours and years you have given the science teachers of Utah.

Ricky Scott for bringing USTA into the 21st Century with the UTSTA.org website.

NASAe Clips

These collections of short, educational video segments for K-12 students feature real-world applications of science, technology, engineering, and mathematics (STEM) topics and offer an inside look at the range of work Nasa scientist do. For example, Our World, for grades K-5, contain segments as diverse as *Sleeping Onboard the international Space Station* and *NASA at Jamestown*, which shoes how archaeologist are using NASA technologies to study the past without damaging artifacts. Real World, for grades 6-8, includes segments such as *Calculating shuttle Launch windows and comets– its Done With Math*, which emphasize the connections between math and science in scientific endeavors. Launch pad, for grades 9-12, explores NASA innovations and technologies through segments like *Curiosity goes to Mars and Cryogenics– the Cold, Hard Facts*. Educator guides with ideas and activities are available for each collection at <http://www.nasa.gov/audience/foreducators/nasaclips/index.html>

U.S. Fish and Wildlife Services (FWS) Conservation Essay: ‘Thinking life a Mountain’



Aldo Leopold, father of the modern wilderness conservation movement, reminds readers of the importance of protecting the environment in the essay “thinking like a Mountain” which first appeared in his book *A Sand County Almanac* (1949). Leopold recounts a time in his young adult life when he and his friends were in the woods, armed with guns. They saw movement tumbling down the hill toward them, and when they saw it was a wolf, they shot without thought because that was the normal practice.

Leopold said he saw a “green fire die” in the eyes of another world,, and it changed him forever. He observed the mountain and the plant life growing there, to hold the soil together. He realized a mountain would be afraid of herbivores that might graze it clean, not the predators who keep herbivore populations in check. Read the essay at <http://1.usa.gov/JLLifq>

This is a must read in biology classes.

Vanishing Forests

A new global map of deforestation reveals that 888,000 square miles (2.3 million square kilometers) of forest has vanished since 2000.

The interactive map is based on satellite data and is the first of its kind. The calculations are accurate down to about 100 feet (30 meters), enough detail to provide useful local information while still covering the whole globe.

<http://earthenginepartners.appspot.com/science-2013-global-forest>

This is an awesome place. Instead of telling the students about the olden days I can show them. (ed)

STEM idea

Invisible Bike Helmets

You know what is kind of a drag about riding a bike? Other than all that pedaling? Bike helmets. Sure, they keep that overrated "brain" from getting splattered, but they take a lot of the open-air-joy out of things, and they're not comfortable. A pair of Swedish women have developed a remarkable solution: the invisible bike helmet.

<http://vimeo.com/43038579>

Climate Discovery Teacher's Guide

This teacher's guide was produced by the National Center for Atmospheric Research as a companion to the Climate Discovery exhibit at our Boulder, Colorado laboratory. Each unit contains lessons appropriate for grades 5-9 on a variety of Earth system science topics that facilitate student learning about our planet's climate system.

<http://eo.ucar.edu/educators/ClimateDiscovery/>



RESCUE 406!
A SARSAT game from NOAA and NASA

A distress call from an emergency beacon goes off somewhere in the world. Satellites orbiting high above Earth receive the signal and relay the person's location to search and rescue crews on the ground. In SciJinks' new mobile game, Rescue 406, you will use the information from these satellites to direct the rescue effort. You'll need to be quick to keep up with an increasing number of people in trouble! Download it today at the Apple iTunes store: <https://itunes.apple.com/us/app/rescue-406/id694112931?mt=8>

FREE

FREE

FREE

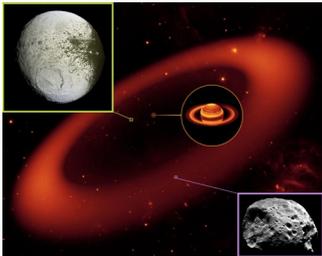
Minute Mysteries book series for students ages 8-14. Available at http://sciencenaturally.com/myster_of_the_month, the mysteries are literature-based math and science brainteasers that take just one minute to read. The brainteasers work well as independent reading for students, a bell ringer for teachers, or an assessment tool for math and science knowledge and literacy. Recent titles include The Tune-Up, Halloween Hippie, Slow Boat, and Cool as a Cucumber. They cost around \$10 but if it is in your budget you should check it out.

Article of the month: February 2014

Saturn & the Phoebe Ring (middle) - NASA / JPL-Caltech / Keck; Iapetus (top left) - NASA / JPL / Space Science Institute / Cassini Imaging Team; Phoebe (bottom right) - NASA / ESA / JPL / Space Science Institute / Cassini Imaging Team.

A Two-Toned Wonder from the Saturnian Outskirts

When Giovanni Cassini first discovered Saturn's Moon Iapetus in 1671, he noticed something strange. It could only be seen when it was on the west side of Saturn. Cassini concluded two things: Iapetus was tidally locked with Saturn, and one of its sides must be brighter than the other—an idea confirmed by modern observations. But it hasn't been until recently that we have known the cause of Iapetus' two-toned exterior. The culprit, it turns out, may surprise you!



[Read the article using Microsoft Word.](#)

[Read the article using Adobe Reader.](#)

Play and learn

Simple and fun learning activities to share with children.

[Clues from Ancient Light](#)—With the GALEX space telescope, astronomers know the age of a source's light by its degree of red shift. In this learning-by-analogy activity, kids arrange pictures of familiar objects by judging which is older.

[Paint by Pixels](#)—Make a picture using a technique similar to that used by many NASA spacecraft to record and send pictures back to Earth.

[Make your own 2-D Flying Nanosat!](#)

[Make a Robo-Puzzle . . . Then Just Try to Solve It!](#)

Cool stuff to download

[Clubhouse TV Mini-Poster](#)

[2012 Space Place Calendar months](#)

[Educator Sign Up Form](#)



Shutterbugs: wiggle and Stomp. This game for ages 3-5 teaches children how to describe movement and motion while visiting rare animals at the Smithsonian National Zoological Park. Players follow Ada the zookeeper, who is seeking animals that are swimming, running, wiggling, and stomping. Once students find and photograph each animal in motion, they can access printable coloring page. Shutterbugs is available for iPad and tablets at <http://bit.ly/19Gwa4X> or play it online at <http://bit.ly/JZsGoA>.

FREE

FREE

FREE

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FREE

FREE

FREE



Great article on Thermometers

This just came out from the American Chemical Society in ChemMatters to help celebrate National Chemistry Week and their theme of Energy. Perfect for a unit on heat.

<http://highschoolenergy.acs.org/content/hsef/en/what-is-energy/thermometers.html>



The Big
Bang
Theory

Commentary: Mayim Bialik from NSTA Reports February 2014 Hollywood Magic Can Transform Students' Perceptions of Being a Scientist.

How many times have you heard your students say, "I wasn't born with the science gene" or something similar? Probably far too often, and truth be told, I felt the same way when I was younger. It never occurred to me that I could be a scientist because science didn't come naturally to me.

The good news is these perceptions can change, just like they changed for me. I not only have a PhD in neuroscience, but Hollywood and science have merged in my role as a neurobiologist Amy Farrah Fowler on the television series *the Big Bang Theory*.

What changed my mind? First, I was fortunate to have a tutor during high school who made me realize that a scientist doesn't have to fit a particular mold, and a career in science was a worthy and attainable pursuit that would transform my life in wonderful ways. It didn't mean that learning science became any easier for me, but I knew that if I persevered and worked hard, I could be successful.

I believe the same is true for all students, and now more than ever, young people need that boost of confidence. While we've all heard the statistics about how the United States lags behind much of the world in science, technology, engineering, and mathematics (STEM), some other numbers surprised me. According to a report by STEM connector and My College Options, 60% of students who begin high school with an interest in science or math lose that interest by graduation. Research shows interest wanes even more in college.

To change these statistics, we need to rethink how we teach STEM subjects. The confines of a classroom, combined with teaching methods that neither engage nor inspire, will not make today's students excited enough about STEM to desire a career in these fields. We need to use content that is relevant to their lives, and let them experience what it's like to be a scientist using technology and tools that real-life scientists use every day.

The STEM Behind Hollywood program from Texas Instruments and the National Academy of Sciences' Science and Entertainment Exchange is giving educators free tools to immerse students in these critical fields, using Hollywood topics like zombies and superheroes to kick start their scientific curiosity.

As it turns out, zombies can teach real science and mathematical concepts like exponential growth curves and the intricacies of human anatomy and epidemiology. Superheroes can prompt teachable moments that draw on physics, biology, chemistry, and much more. Countless entertainment topics can be explored through math and science, and STEM Behind Hollywood guides the discussion using real-world simulations developed for TI-Nspire graphing calculators, computer software, and iPad apps.

Hollywood movies and television can do more than entertain. They can ignite our children's imaginations and prompt them to explore the science behind the magic they see on the screen. It just takes one seed of curiosity in a student's mind to grow a lifelong love of science and learning. We all play important roles in making science accessible. One teacher changed my life and how I viewed the world, and I'm trying to share that gift with as many teachers and students as I can. Can you be that life-changing catalyst for your students?

Emmy-nominated actress Mayim Hoya Bialik received her bachelors of science in Neuroscience and Hebrew and Jewish Studies from the University of California, Los Angeles in 2000 and earned her PhD. In Neuroscience from UCLA in 2007. Bialik's path from child actress to neuroscientist, to playing a scientist on the Big Bang Theory has led to her role off screen as an advocate for science, technology, engineering, and math (STEM) education. She is the keynote speaker in the NSTA national conference in Boston this year.



Subject: NASA Traveling Exhibit

A special NASA traveling exhibit <http://clarkplanetarium.org/nasa-traveling-exhibit-coming-226-32/> is coming February 26 - March 2.

With the NASA Exploration Systems Directorate/Space Launch System <http://www.nasa.gov/exploration/systems/sls/outreach/index.html#.UubToRDn9pg> (ESD/SLS) exhibit, guests will be able to explore launch system and flight hardware with an interactive touch screen presentation, take an up-close look at a scale model of NASA's next rocket, the Space Launch System and multi-purpose crew vehicle, the Orion space capsule. Visitors can also have their picture taken as an astronaut.



A special Night Vision <https://secure4.gatewayticketing.com/ClarkPlanetarium/shop/ViewItems.aspx?>

Mer-

[chant=CP&CategoryGroupExternalID=80&CategoryExternalID=SNV](https://secure4.gatewayticketing.com/ClarkPlanetarium/shop/ViewItems.aspx?Mer-chant=CP&CategoryGroupExternalID=80&CategoryExternalID=SNV) event will be held on Wednesday, **February 26, 2014**, for an up close look at NASA and the Space Launch System (SLS) rocket. Clark Planetarium is pleased to welcome Alex Priskos, NASA's SLS Boosters Manager, and NASA Astronaut Dominic "Tony" Antonelli for this special event. Their joint presentation will include discussion of NASA's next rocket, the SLS, and will pair nicely with the special NASA Exploration Systems Directorate/Space Launch System <http://www.nasa.gov/exploration/systems/sls/outreach/index.html#.UubToRDn9pg> (ESD/SLS) exhibit that will be on display <http://clarkplanetarium.org/nasa-traveling-exhibit-coming-226-32/> at Clark Planetarium from **February 26 to March 2, 2014**.

The presentation will begin at 7 p.m. in the Hansen Dome Theatre. Tickets to the event are \$2. Members get in free. Seating is limited. Thank you to ATK for sponsoring this event.

Thank you,

Callista Pearson

Marketing & Special Events Coordinator

Clark Planetarium

[385-468-1229](tel:385-468-1229)

Visit our website <http://www.clarkplanetarium.org/>

Chat with us on facebook <http://www.facebook.com/clarkplanetarium>

Follow us on twitter <http://www.twitter.com/clarkplanet>



KidWind

You're invited to browse through countless short videos, PowerPoint presentations, hands-on lessons, and student-friendly online reading that will get you started learning about renewable energy.

<http://learn.kidwind.org/>

USTA Summer Endorsement Course Registration is Coming to UTSTA.ORG

We are excited to announce that USTA, along with Brigham Young and Utah Valley Universities, are offering five, week long, science endorsement classes this summer for teachers who are working towards a Utah State Science Endorsement or who are interested in extra professional development. All of these classes will be taught by experienced teachers with tried and true methods and teaching ideas you'll be excited to use in your classroom. Each class will last 5 days, from Monday - Friday and cost current USTA members \$350 (\$375 for Non-USTA and expired USTA members) to cover the cost of the instructor, location, materials, and food. All participants will receive USOE Professional Development credit for completing the class. If desired, 3 semester college credits are also available after course completion for an additional recording fee of (\$50-100 from either BYU or UVU). The courses USTA will be offering this summer are:

Astronomy - June 23-27 - Utah Valley University Field Station, Capitol Reef
Chemistry - June 16-20 - Westlake High School, Saratoga Springs
Geology - June 9-13 - Start in Lake Ridge Jr. High, Orem and end in the Vernal area
Science Methods - July 7-11 - Oak Canyon Jr. High, Lindon
Physics 1 - June 16-20 - Westlake High School, Saratoga Springs

Summer Classes and Professional Development for Me????!!!

If you are even a little interested for endorsement purposes, professional development, or for a great, fun week make sure to talk with your principal and ask if they will sponsor your fees. Most principals are happy to help their teachers get professional development that will help the students in their school be more successful. Even if your principal only cover the course fee and make you pay for the college credit or pays for half it could be the cheapest 3 college credits you will have ever paid for.

More information will be coming to the USTA website (utsta.org) soon. We'll send out an email to USTA members when they become live on the site. Each class has a limit in the number of students it can hold (20-30) so when the email come, don't delay or you may miss this great chance.

Another fun happening was to have **Robert Krampf present at the conference**. We hope you tired out his web site. Here is more information.

The Happy Scientist

Science videos, Experiment of the Week newsletter, Science Photo of the Day, and much more.

<http://thehappyscientist.com/>

Phone: [435-644-5199](tel:435-644-5199)

Facebook: <http://www.facebook.com/TheHappyScientist>



On my way home from the Utah Science Teachers Association Conference, I was lucky enough to spot these unusual snow structures.

....[Read more....](#)

The true size of the world

The Gall–Peters projection, named after James Gall and Arno Peters, is one specialization of a configurable equal-area map projection known as the equal-area cylindrical or cylindrical equal-area projection.

Polyview Earth

<http://vanessafire.files.wordpress.com/2010/10/polyview-earth.jpg>

The real size of Africa

<http://www.marilink.net/wp-content/uploads/2010/10/true-size-africa.jpg>



Free Forensic Magazine

Great resource for forensic teachers and it's free!

<http://www.evidencemagazine.com/>

Why is glass transparent?

Haven't you always wondered this? I have, and now I know.

<http://www.wimp.com/whytransparent/>

Opening Minds to the World®

The National Consortium for Teaching about Asia (NCTA) and the Program for Teaching East Asia (TEA) at the University of Colorado invite applications for a residential summer institute for elementary teachers.

Texts and Contexts: Teaching Japan through Children's Literature, June 22-26, 2014. Application deadline: March 14, 2014. Using children's literature, elementary teachers can guide students in explorations of other cultures while helping them develop literacy skills and knowledge of their world. This institute for K-5 teachers will introduce several exemplary works of children's literature as building blocks for teaching an integrated unit on Japan. Participants will have a unique opportunity to work with scholars of Japanese culture and children's literature. The institute is limited to 20 eligible teachers to be chosen through a selective application process. Participants will receive travel allowance, room and board, materials, and stipend. See [complete details and application](http://www.colorado.edu/cas/tea/ncta/downloads/TCJPSI2014appfillable.pdf) at <http://www.colorado.edu/cas/tea/ncta/downloads/TCJPSI2014appfillable.pdf>.

CHASING ICE

On May 28, 2008, Adam LeWinter and Director Jeff Orlowski filmed a historic breakup at the Ilulissat Glacier in Western Greenland. The calving event lasted for 75 minutes and the glacier retreated a full mile across a calving face three miles wide. The height of the ice is about 3,000 feet, 300-400 feet above water and the rest below water. Amazing!

<https://www.youtube.com/watch?v=hC3VTgIPoGU>

To Renew online:
<http://utsta.org/>

IMPORTANT!!! The new USTA website requires you to create an account.

An account to utsta.org will allow you to track your membership status, register for conferences & professional development classes, and gain access to USTA updates and newsletters. Your utsta.org account is tied to your paid membership to USTA. If you feel as though your previous USTA membership is not due to expire for 4 months or more from now please email ustawebsite@gmail.com with your name, email, and membership type (secondary, elementary, etc.). We will look into your current membership and contact you with further information.

Our snail mail is the same if you need to put it on a purchase card order:

Utah Science Teacher Association
N-143 Eyring Science Center
Provo, UT 84602

USTA Mission Statement: The purpose of the Utah Science Teachers Association shall be the advancement, stimulation, extension, improvement, and coordination of science teaching in all fields of science, at all educational levels.

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