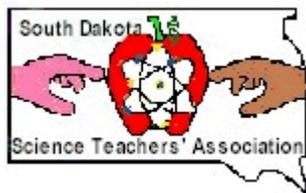


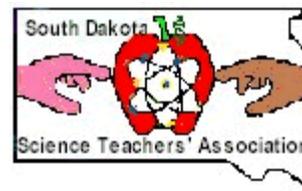
# South Dakota Science Teachers Association



## SDSTA Newsletter

April 2014

Volume 132



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Time is going at a break-neck pace as I am sure everyone would agree. The joint SDSTA-SDCTM joint conference was a success once again with speakers from a wide range of disciplines and grade levels. The weather seemed to cooperate again too as there wasn't a blizzard this year—it was still cold.

I am so excited about the young science teachers and pre-service teachers I got a chance to talk to at the conference. Those who are looking to retire in the next few years can be well assured that science education in South Dakota will be in good hands.

I got a chance to present at the North Dakota State Science Teachers Convention on the NGSS as well as sit in on their organization meeting. They are debating whether to embark on a joint conference with the math teachers. I see so many positive benefits to a venture such as ours. With the CCSS math and ELA, all disciplines need to communicate more and we are well on our way to being able to integrate these areas into our classroom. I attended sessions at the South

Dakota conference on both ELA and math incorporation into science and came away much more knowledgeable and able to immediately implement the standards discussed into my curriculum. There were several presentations on these topics in North Dakota too.

There are a lot of things in store for science education this year. There is currently a group of teachers (all levels), university professors (science and education), parents, and industry representatives from around the state that are to evaluate the existing State of South Dakota Science Standards and to determine the next steps for revision. (see the note from Sam Shaw in the newsletter) The professional development is worth the effort. All work will be framed on the current vision for science education in South Dakota as indicated by existing State of South Dakota Science Standards. Any changes to the existing standards will reflect the most current research in science education to help

ensure that the standards meet the needs of all South Dakota students. You can view a list of the review team members at <http://doe.sd.gov/contentstandards/>.

Achieve will be coming out with Evidence Statements sometime this year that will further define what is expected from a student if they achieve the performance expectations of the Next Generation Science Standards. There will also be sample Tasks from each discipline and grade band that will feature not only the science but math and English standards. NSTA has content are curators working on resources Ramona Lundberg and Janet Briggs are curators.

I look forward to serving as the President of the South Dakota Science Teachers Association for the next two years. I have many big shoes to follow but know they (Brenda, Molly, Ramona) are there to help me along the way. We have a great group of officers!

Have a great rest of the year.

Sincerely,

*Julie Olson*

Distinguished Service Award: Kelly and Becky Lane with past president Brenda Murphey



Kelly Lane Space Earth and Space Science Grant: pictured are Tom Durkin, Kelly Lane, and Steve Gabriel of Spearfish High School



Physical Science Teacher of the Year: pictured are Larry Browning (university liaison/ SDSU) and Darwin Daugaard, Dell Rapids High School



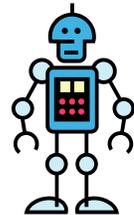
Daniel Swets Robotics Award: pictured are Tom Durkin (SD Space Grant Consortium) and James Kruse of Wessington Springs, and Steve Gabriel from Spearfish (not pictured)



Friends of Science: Tom and Cathy Durkin with past-president Brenda Murphey



Also winning robotics awards in 2014 were **Stephanie Chambliss** of the 4H SDSU Extension Program in Charles Mix Co. and **Brenda Waterbury** of Brandon Valley School District



Presidential Award for Math and Science Teaching Finalists: Janet Wagner—Bon Homme High School, Darwin Dagaard, Dell Rapids High School, Rose Emmanuel, Lead-Deadwood (not pictured) (Third)

South Dakota Outstanding Biology Teacher Award: pictured is Justin Lovrien, Brandon Valley High School



## Wind Energy Workshop—offered by MTI Mitchell

### Wind Energy in the STEM Curriculum - Workshop for High School Teachers

Mitchell Technical Institute is offering a two-day professional development workshop for SD high school instructors. This free workshop is intended for those who are teaching, or considering teaching wind energy related topics in your STEM curriculum and will provide an opportunity to add to your knowledge and skills regarding this topic. The workshop will provide an overview of the wind industry, how electrical energy is produced, and offer tips and activities for teaching these concepts. Highlights of this workshop include:

- Conducted June 10, 10 AM to 4 PM & June 11, 9:00 am – 3:00 pm at the Mitchell Technical Institute Energy Training Center Room 310. Optional 3<sup>rd</sup> day tour (8:00 am 12:00 pm) to Crow Lake Wind Farm for those interested.
- Learn about the history of wind power and wind turbines.
- Learn how electricity is generated by wind turbines, how the generators work, and examine components of an actual commercial wind turbine generator.
- Hands-on activities in the MTI Wind Turbine Technology laboratory include building a Kidwind Turbine and understanding aerodynamic terms such as pitch, yaw, lift and drag. The turbine will be taken home after the workshop.
- Learn power generation terms such as megawatt, kilowatt, voltage, current and resistance.
- Learn about the wind industry and careers as well as current wind projects in South Dakota.

- Take home a notebook/CD of reference materials and learn about other instructional resources available from the wind industry.

Workshop instructor: Danny DeFries - MTI Wind Turbine Technology instructor, Electrical Engineer, Certified Composites Instructor, Certified Climber Rescuer, Electronics and Networks Instructor Registration deadline April 15, limited to 20 participants

Contact: John Heemstra at MTI  
[john.heemstra@mitchelltech.edu](mailto:john.heemstra@mitchelltech.edu)



## South Dakota Envirothon (it's not too late to sign up!)

The South Dakota Envirothon is a competition for high school students where teams of five compete in knowledge and skills related to soil, water, forestry and wildlife as well as a current issue.

We invite teachers and 4H leaders to recruit a team of five to six high school students (5 team members plus one alternate) to bring to the SD Envirothon. The 2014 Envirothon will be held at NeSoDak Bible Camp in Waubay, SD. Thursday,

April 24 is the skills review from 1-4 with a current issue overview for the students at 4PM. The competition is Friday morning from 8-12. Current issue student presentations go from 2:30 – 4:00. The most current SD Envirothon info can be found at <http://sdenvirothon.org>.

To support the local program, the SD Envirothon offers the following:

- Stipend to teacher or leader that brings a team.

- Substitute reimbursement if adult leader is a classroom teacher.

- Reimbursed travel expenses.

- Lodging and meals at the competition.

- A full kit of equipment to help prepare students with hands-on activities (valued at \$250).

It's not too late to bring a team! Contact Anne Lewis at [annelewis@sd-discovery.com](mailto:annelewis@sd-discovery.com) or call 605-224-8295 for more information.



## The Science of Golf —NBC Learn

NBC Learn, in partnership with the United States Golf Association and Chevron, explores the science of golf. A series of free 5-6 minute video clips on the following topics: Work, Energy, and Power; Water conservation; Physics of the golf swing; Kinematics; Friction and spin; Volume, Displacement, and Bouyancy; Evolution of

the Golf Ball; Calculating Handicap Index; and Evolution of the Golf Club. You can view the clips at the following web link: <http://www.nbclearn.com/science-of-golf>

There are other topics available on the NBC learn website: Water, Innovation, Summer Olympics, Hockey, Football, Chemistry, and the

Winter Olympics. Videos are available for download with a subscription.



## Laboratory Safety—Janet Wagner, HS Liason

How safe is your science laboratory? What are your legal responsibilities for the safety of your students in the laboratory? As a science teacher, what are your duties of care? All are interesting questions which are addressed in a free laboratory safety course offered by Flinn Scientific, Inc.

Flinn Scientific is offering a free self-paced course on lab safety for both high school and middle school science teachers.

([www.labsafety.flinnsci.com](http://www.labsafety.flinnsci.com))

) The course is a comprehensive six hours of instruction on how to make your lab safe and knowledge on how to protect yourself against a negligence lawsuit. There are 10 chapters dealing with such topics as teacher's duty of care, basic principles of toxicology, chemical purchasing guidelines, and safety for storage and disposal of chemicals.

I took the course and it made me start thinking about the safety equipment and procedures I use in the lab. What steps would I take

in case of a fire, when a student is on fire? What are my responsibilities if a student steals mercury from the laboratory storage room?

After completing the course a certificate may be printed to be placed in your personal file. You never know, it might be the one thing that administration sees to help you get more science equipment or supplies!

A teacher was giving a lesson on the circulation of the blood.

Trying to make the matter clearer, she said, "Now, class, if I stood on my head, the blood, as you know, would run into it, and I would turn red in the face."

"Yes," the class said. "Then why is it that while I am standing upright in the ordinary positions the blood doesn't run into my feet?"

A little fellow shouted, "Because your feet aren't empty."

## Blood Typing Game

Blood Typing Game – Nobel Prize website

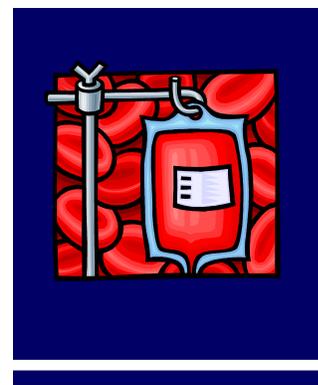
Students will be presented with patients and then have to choose which blood type (s) to give them. A good formative assessment and fun.

<http://www.nobelprize.org/educational/medicine/bloodtypinggame/game/index.html>

## Massengale's Biology Junction

Find a wealth of activities for Biology at [http://www.biologyjunction.com/biology\\_projects.htm](http://www.biologyjunction.com/biology_projects.htm)

There are items to help with vocabulary and the CCSS such as foldables, Nature of Science activities with easy to find materials (e.g. Science of Popcorn, Growing Gators, Dirty Diapers), genetics with Dragons!, and a wide array of dichotomous keys for all levels of students from sharks to aliens to salamanders to a culmination of creating a dichotomous key. Definitely a site biology teachers will want to check out.



## The PEP project (pharmacology education project)

The PEP project was developed at Duke University by Dr. Rochelle Schwarz-Bloom and Dr. Myra Halpin. The Pharmacology Education Partnership is a joint venture among Duke University Medical Center, the North Carolina School of Science and Mathematics, and biology and chemistry teachers across the United States. The project was funded by the National Institute on Drug Abuse (NIDA) to produce and share standards-based inquiry teaching

materials and activities with high school teachers. The purpose of the partnership is to provide biology and chemistry teachers with practical applications of basic concepts from both biology and chemistry disciplines using pharmacology topics of interest to high school students. This web application provides the science content and background for teachers and students to apply pharmacology topics to basic biology and chemistry

principles.

The PEP (Pharmacology Education Project) <http://www.thepepproject.net/Load/>

Allow pop-ups and activate the adobe plug in if it asks. Choose Student – and I suggest the tutorial to learn how to navigate the site.

There are 6 modules: (teacher provided pdf) ranging from cocaine to steroid abuse. A great supplement for integration of chemistry and biology.

## Kid-Wind Senators

How safe is your science  
**2014 WindSenators Educator Training**

June 23-27, 2014

Saint Paul, MN

**APPLICATIONS DUE  
 APRIL 1, 2014**

Wind power is quickly becoming one of the most prominent renewable energy sources in the United States. Yet many holes still remain in the public understanding of wind and factual information can be hard to find. That's

why the WindSenators Education Network is so important. WindSenators will provide states with knowledgeable, experienced wind energy educators that can help others get the tools and information they need to teach the public about wind energy. Think about it: a single training of 30 teachers can impact over a thousand students, having an exponential influence in the community.

This year, we are looking for another 30 teachers who are motivated to improve wind

energy education in their region. The WindSenators training is a unique opportunity to develop your own knowledge of wind energy science while also learning how to use our curriculum and educational materials to teach about wind in K-12 classrooms. If you want to become an expert about wind energy, and you are ready to share this knowledge with teachers and students in your region, apply to become a Wind-Senator today! Join our network of over 100+ educators.

WindSenators Information  
 >> [http://learn.kidwind.org/workshops\\_events/windsenators/2014](http://learn.kidwind.org/workshops_events/windsenators/2014)

WindSenators Scholarships  
 >> [http://learn.kidwind.org/workshops\\_events/windsenators/2014/funding](http://learn.kidwind.org/workshops_events/windsenators/2014/funding)

For more information contact:

Michael Arquin, KidWind

[michael@kidwind.org](mailto:michael@kidwind.org)

(651) 325-8149

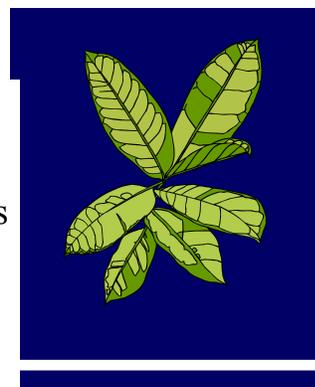
## Molecular Biology Workshop

**Where & When:** Seed Molecular Biology Laboratory, South Dakota State University, Brookings, SD, from **May 27 to 31, 2014**

**Eligible Applicants:** Biology teachers from South Dakota High Schools

**How to Apply:** Send a filled application form with a short essay on why you would like to attend the workshop by email or mail before **April 18, 2014** for evaluation. Selection for applicants will be made by **April 25, 2014**.

**Contact: Dr. Xingyou Gu;** Email: [xingyou.gu@sdsu.edu](mailto:xingyou.gu@sdsu.edu), or mail: SNP248D, Box 2140C, Brookings, SD 57007. Phone: (605)688-6908.



## Mechanics Modeling (Physics) Workshop in Madison, SD

Mechanics Modeling (Physics) Workshop in Madison, Dakota State University - June 2-6, 2014  
 Registration will open in early April.

Content: Newton's laws. This is a continuation of the 2013 5-day introduction to Modeling Instruction. Topics will begin with the constant force model. High school and middle school teachers who have not attended a modeling work-

shop but want to attend should contact Andy Johnson. Priority given to South Dakota teachers; out of state teachers are welcome on a space-available basis.

Lodging and meals are provided, with modest stipends for full attendance by SD teachers. Course materials will be provided. Two hours of Graduate Credit for the low low price of \$80! A prior introduction to Modeling Instruction is highly recommended. The

workshop is for current and prospective teachers of high school physics, chemistry, math, and/or physical science.

For additional information or to apply, contact:  
 Andy Johnson, Ph.D.  
 1200 University  
 Black Hills State University  
 Spearfish, SD 57799-9005  
 Phone: (605) 642-6508

While South Dakota has been a member of the consortium of states working on the Next Generation Science Standards, the state believes further review is necessary. SD Department of Education will be asking the SD Board of Education to move the timeline for adoption to 2015, which will allow time to pull together a group of teachers and science leaders to further study options for science standards. The DOE will also hold four public hearings across the state to gather input and to demonstrate our commitment to an open process. To date, the workgroup has created criteria to evaluate standards based on *the Framework for K-12 Science Education*, which is a collection and illumination of the most current research in science education. The group has also used this criteria to evaluate current interpretations of *the Framework* (South Carolina Academic Standards and Performance Indicators for Science, Massachusetts Science and Technology/Engineering Standards, Next Generation Science Standards and South Dakota Science Standards). The group also went through the formatting of all these standards to make recommendations on elements needed in the next set of South Dakota Science Standards. The next steps include writing and formatting the next set of South Dakota Science Standards based on the evaluation and recommendations of the workgroup. Dates and information of workgroup meetings and public hearings: <http://doe.sd.gov/ContentStandards/>

### K-12 Soil Science

The Soil Science Society of America (SSSA) offers news, lesson plans, a glossary, career profiles, and opportunities to ask questions of soil experts. Teachers can also access “fun” soil resources, such as the I “Heart” Soil rulers and stickers; “12 Orders of Soil Taxonomy” posters; Soil! Dig Deeper bookmarks; and “Careers in Soil Science” posters and brochures. <http://www.soils4teachers.org/>

## Educade: <http://www.educade.org/>

Check out the Educade website for lesson plans incorporating today’s technologies—apps, games, and other innovations—into instruction. The site offers hundreds of ready-to-use lesson plans in core subjects, each of which is aligned to Common Core State Standards for English language arts, math, and science. Science highlights include Classify Wildlife in Your Community With Project NOAH (elementary), Construct a School Wide Scale Solar System With Scale of the Universe (middle level), and Conservation of Momentum With Portal 2 (high school).

Example:

### NEWTON'S PLAYGROUND

**Explore the basic principles of physics and simple machines by drawing levers, ramps, and much more in this whimsical sandbox game.**

## Music Inspired by Astronomy: A Resource Guide Organized by Topic - put the “A” in STEAM

This annotated resource guide presents 133 pieces of music inspired by astronomical ideas, discoveries, or history, organized in 22 subject categories. Both classical and popular music are included, but only when a clear connection to astronomy could be established. Depending on your musical tastes, you are likely to find some pieces resonating with you and others like the squeaking noise on a blackboard when chalk is held at the wrong angle. But some of the ideas and analogies the pieces represent may intrigue you and your students. Only music available on CD is included, so that educators who want to use some of these in the classroom can purchase a legal copy. A short appendix lists a number of astronomers who have recorded songs and self-published them. <http://scitation.aip.org/content/aas/journal/aer/11/1/10.3847/AER2012043>

## NASA e-clips—for all grade levels

NASA eClips™ are short, relevant educational video segments. These videos inspire and engage students, helping them see real world connections. New video segments are produced weekly exploring current applications of science, technology, engineering and mathematics, or STEM, topics. The programs are produced for targeted audiences: K-5, 6-8, 9-12 and the general public.

NASA eClips™ offer unlimited flexibility in the classroom for timing, sequencing and pacing instruction to meet the needs of students and classroom instruc-

tors. Educational material for this program is selected based on national curriculum standards identified by the National Council of Teachers of Mathematics, or NCTM, the National Science Teachers Association, or NSTA, and the International Society for Technology in Education, or ISTE. <http://www.nasa.gov/audience/foreducators/nasaeclips/faq/index.html>



The winners of this years photo contest are:

- 1st Place - **Hot Water** - Cassie Starzl (Mitchell)
- 2nd Place - **Sploosh!** - Nelson Holman (Philip)
- 3rd Place - **Why does soda Carbonate?**-Tatum Dean (Mitchell)

The student's photos and descriptions are below.

In my photo, I chose to throw hot water at its boiling point of  $212^{\circ}\text{F}$  ( $100^{\circ}\text{C}$ ) outside in the cold of about  $10^{\circ}\text{F}$  and it turned to mist. With the water at its boiling point, the molecules are in flux between the liquid and gas phases. Provide energy, in this case, throwing it into the air will encourage the particles to stay in the gas (vapor) phase and dissipate into the air. Cool the particles, and they will form a liquid or solid if cooled even further. Much of the hot water freezes (solid phase) as soon as it comes in contact to the very cold air ( $10\text{ F}$  or  $-12\text{ C}$ ) and that is why it appears like a mist. The solid water drops refract the light so we see the "cloud." Most will dissipate before it hits the ground. Evaporation is the transformation of water from a liquid phase to the gas phase. The rate of the evaporation depends on the temperature. If the water is not hot enough the evaporation will be slower and will hit the ground before it freezes or evaporate, low humidity will cause a more rapid evaporation and dissipation of the water molecules into the air.



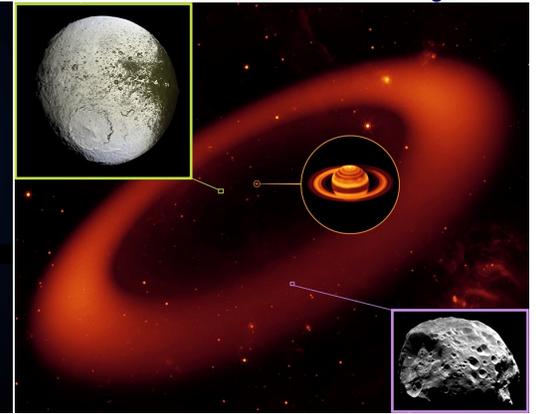
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In our display – of a physics concept – we are covering Newton's 1st Law. Newton's 1st Law states that an object at rest tends to stay at rest, unless acted upon by an outside force. In this picture, our quarter is the object in which we are observing the concept of inertia. The quarter rests on top of the note card. The note card is then pulled quickly from under the quarter. The quarter's inertia allows it to remain at rest and fall once the card is removed. Sploosh!

When you drink a pop, more often than not if you were to pour it into a clear glass, you would see bubbles rising up the inside of it. That is due to carbonation. Carbonation is the process of dissolving carbon dioxide in a liquid. The process usually involves carbon dioxide under high pressure. When the pressure is reduced, the carbon dioxide is released from the solution as small bubbles, which causes the solution to become fizzy. When pressure is released in a carbonized drink, it separates into a gas. Pop, or soft drinks, contain carbonation in them, along with some sort of sweetener. In 1767, Englishman Joseph Priestley first discovered a method of infusing water with carbon dioxide to make carbonated water. He discovered this when he suspended a bowl of distilled water above a beer vat. Since then, carbonated water had been improved and sold as many different things. It wasn't Swedish chemist Jöns Jacob Berzelius started adding spices and sugars that we got what is now called today soda or pop. So when you have your pop, and you see the bubbles sliding up the inside, you now know why





## A Two-Toned Wonder from the Saturnian Outskirts

By Dr. Ethan Siegel

Although Saturn has been known as long as humans have been watching the night sky, it's only since the invention of the telescope that we've learned about the rings and moons of this giant, gaseous world. You might know that the largest of Saturn's moons is Titan, the second largest moon in the entire Solar System, discovered by Christiaan Huygens in 1655. It was just 16 years later, in 1671, that Giovanni Cassini (for whom the famed division in Saturn's rings—and the NASA mission now in orbit there—is named) discovered the second of Saturn's moons: Iapetus. Unlike Titan, Iapetus could only be seen when it was on the west side of Saturn, leading Cassini to correctly conclude that not only was Iapetus tidally locked to Saturn, but that its trailing hemisphere was intrinsically brighter than its darker, leading hemisphere. This has very much been confirmed in modern times!

In fact, the darkness of the leading side is comparable to coal, while the rest of Iapetus is as white as thick sea ice. Iapetus is the most distant of all of Saturn's large moons, with an average orbital distance of 3.5 million km, but the culprit of the mysterious dark side is *four times* as distant: Saturn's remote, captured moon, the dark, heavily cratered Phoebe!

Orbiting Saturn in retrograde, or the opposite direction to Saturn's rotation and most of its other Moons, Phoebe most probably originated in the Kuiper Belt, migrating inwards and eventually succumbing to gravitational capture. Due to its orbit, Phoebe is constantly bombarded by micrometeoroid-sized (and larger) objects, responsible for not only its dented and cavity-riddled surface, but also for a huge, diffuse ring of dust grains spanning *quadrillions* of cubic kilometers! The presence of the Phoebe Ring was only discovered in 2009, by NASA's infrared-sensitive Spitzer Space Telescope. As the Phoebe Ring's dust grains absorb and re-emit solar radiation, they spiral inwards towards Saturn, where they smash into Iapetus—orbiting in the opposite direction—like bugs on a highway windshield. Was the dark, leading edge of Iapetus due to it being plastered with material from Phoebe? Did those impacts erode the bright surface layer away, revealing a darker substrate?

In reality, the dark particles picked up by Iapetus aren't enough to explain the incredible brightness differences alone, but they absorb and retain *just enough* extra heat from the Sun during Iapetus' day to sublimate the ice around it, which resolidifies preferentially on the trailing side, lightening it even further. So it's not just a thin, dark layer from an alien moon that turns Iapetus dark; it's the fact that surface ice sublimates and can no longer reform atop the leading side that darkens it so severely over time. And that story—only confirmed by observations in the last few years—is the reason for the one-of-a-kind appearance of Saturn's incredible two-toned moon, Iapetus!

Learn more about Iapetus here:

<http://saturn.jpl.nasa.gov/science/moons/iapetus>.

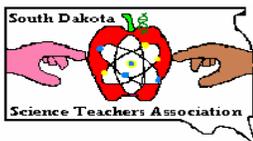
Kids can learn more about Saturn's rings at NASA's Space Place:

<http://spaceplace.nasa.gov/saturn-rings>.

Kids can explore the many volcanoes of our solar system using the Space Place's Space Volcano Explorer: <http://spaceplace.nasa.gov/volcanoes>.

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Images credit: 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.



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Ramona.Lundberg@k12.sd.us

## Underground STEM Workshops

Strengthen your scientific content knowledge and improve your ability to connect your teaching to the cutting-edge science underway at the Sanford Underground Research Facility. Two weeklong workshops, designed for educators in grades 5-12, will explore the sciences (life, earth/space and physical), engineering and mathematics from a unique perspective. Connections will be made to science and engineering practices, as well as standards for mathematical practice.

Participants will learn about planned and ongoing research at the Sanford Underground Research Facility, participate in hands-on activities and take part in surface tours related to the content. In addition, we will utilize an HD Videoconferencing system to visit with scientists working at the 4850 Level.

June 23-27 Grades 5-8

July 21-25 Grades 8-12

Apply using the link below. If applying as a team, be aware that online registration will ask for information about both you and your teammate.

<https://adobeformscentral.com/?f=-Y8L9vKS7kWmz6Q-jkdIXw>

The SDSTA Newsletter is published four times a year. The April issue (this one) is e-mailed to 140 paid members, and several school science departments.

The Membership year in SDSTA starts with the February conference and ends the first of February. Dues are due at each conference for member discount rates.

SDSTA members may give a one year free membership to their student teachers by submitting the student teacher's name & address.

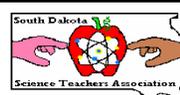
One may be given to the SDSTA member that has made a submission to the newsletter (or given a presentation at the conference) and has referred at least three new members.

Members may also earn a 10% finders fee for any science related ads placed in the newsletter. Our rates are \$75 per page (or 3 to 4 quarter pages) or \$250 per page to place an ad in four consecutive issues.

## Sanford Underground Research Facility



Mail to: Deirdre Peck, SDSTA Treas  
409 S. Kline Street  
Aberdeen, SD 57401



\$ 5 Student  
\$ 5 K - 6  
\$ 5 Retired  
\$ 20 All Others

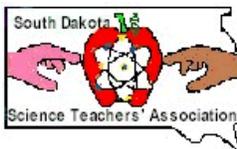
Name \_\_\_\_\_ Home Phone \_\_\_\_ - \_\_\_\_  
Home Address \_\_\_\_\_ E-mail: \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Your School \_\_\_\_\_ School Phone \_\_\_\_ - \_\_\_\_  
School Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Your area K - 6 7 - 8 9 - 12 College Other \_\_\_\_\_  
( circle one )

Referred by \_\_\_\_\_

South Dakota Science Teachers' Association  
 Julie Olson and James Stearns  
 Editors, S D S T A Newsletter  
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## Calendar of Events

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- |   |   |
|---|---|
| <p>April 15<br/>         April 24<br/>         April 29<br/>         May 1<br/> <br/>         May 27-31<br/>         June 2-6<br/>         June 10-11<br/>         June 23-27<br/>         July 14-August<br/>         July 20-25</p> | <p>PAEMST nomination deadline for K-6 teachers - <a href="http://www.paemst.org">www.paemst.org</a><br/>         SD Envirothon - <a href="http://SDEnvirothon.org">http://SDEnvirothon.org</a><br/>         Sanford PROMISE Spring Science Discovery Day<br/>         Registration deadline for ND Oil Seminar { free }—<br/>             <a href="http://www.ndoil.org/events/teacher_education/">http://www.ndoil.org/events/teacher_education/</a><br/>         Molecular Biology Workshop - Brookings, SDSU<br/>         Mechanics Modeling (Physics) Workshop in Madison, DSU<br/>         Wind Energy Workshop - Mitchell Technical Institute<br/>         Kid-Wind Senators - <a href="http://learn.kidwind.org/workshops_events/windsenators/2014">http://learn.kidwind.org/workshops_events/windsenators/2014</a><br/>         PLTW Biomedical Sciences @ Sanford Research in SF<br/>         Student (grades 10-12) Cyper Stars Summer Camp - DSU, Madison<br/>             { free }<br/>             <a href="http://ia.dsu.edu/cyberstars">http://ia.dsu.edu/cyberstars</a></p> |
|---|---|

February 5-6-7, 2015 Joint Science & Math Professional Development Conference

Homepage Located At <http://www.sdsta.org>

# SDSTA Annual Business Meeting

CrossRoads Dakota G: February 7, 2014

## Current Officers:

**President:** Brenda Murphey  
**Past-President:** Molly Tenbroek  
**President-Elect:** Julie Olson  
**Treasurer:** James Stearns  
**Secretary:** Liz McMillan

**NSTA Representative:** Ramona Lundberg

## Science Liaisons (appointed by President):

Micheline Nelson  
Janet Wagner  
Janet Briggs  
Larry Browning

**Additional SDSTA Conference Support**

**Vendor Coordinator:** David Ireland

**Hospitality:** Jen Fowler

## Agenda:

**Call to Order (4:47 – 25 members present):** President Brenda Murphey (Welcome to starting day of 2014 Winter Olympics and American Heart Association Heart Day)

**Secretary's Report:** Liz McMillan – report from last year and DDN business meeting. Molly move to accept, Janet 2<sup>nd</sup>. All in favor.

**Treasurer's Report:** James Stearns – report of current finances. Janet move to accept, Larry 2<sup>nd</sup>, all in favor.

### Old Business:

Current Conference Attendance

Vendors (David Ireland reports): 17

Vendors appreciate hospitality.

All still set up at 5 Friday. Refunds if set up through Friday and through noon Saturday

Number Registered: 176 as of Thursday night – more anticipated.

Conference Gear – SDSTA attire available @ check-in desk; wear red at banquet (if you brought some), geek gear on Saturday.

Newsletter

Currently offered online and sent via email to members 4 times annually

Discussion about dissemination and sharing

Good to have consistent message about information rather than just setting on the website.

Color pictures & Clickable links

Molly moves to pay James/Julie \$50 for each newsletter produced. Lindsay 2<sup>nds</sup>. All in Favor.

Science Fairs of SD (Liz McMillan) – Junior Science Fair Award – 4 of 4 awarded 3 of 4 paid out last year. Upcoming fairs for 2014 have already been contacted.

SDSTA is in the process of applying for Renewal of Non-Profit Status (501c3)

### New Business:

Officer Voting:

Nominations & Vote 2015 positions:

President-Elect

Molly nominates Liz McMillan – Liz accepts nomination.

Janet moves to cease nominations – Larry 2<sup>nd</sup>. All in Favor.

All vote yes.

Treasurer

James nominates Diedra Peck of Aberdeen Central – Diedra accepted nomination prior to meeting.

Liz moves to cease nominations – Janet 2<sup>nd</sup>. All in favor.

All vote Yes.

Secretary

Molly nominates Deb Snook – Phillip HS – Math & Science.

Nomination of Shawnda Carmichael – Bison - 7-12 science.

Molly moves to cease nominations – Janet 2<sup>nd</sup>. All in Favor.

Ballot Vote.

Molly Count – Janet Supervised

Shawnda will be new Secretary 2015

Transfer of new officer positions in Fall 2014 (@ fall business meeting)

Update on NSTA's work with NGSS (Ramona Lundberg & Janet Briggs – 2 of the 55 curators for NGSS resource and content development – Goal to evaluate resources for area of expertise against rubric and suggest modifications and accredit resources)

NSTA Proposed NGSS website evaluation – Elementary teachers needed (contact Ramona Lundberg or Ted Willard)

Update from SD DOE (Sam Shaw)

Questions from audience about NGSS

Last Fall article in Argus Leader – regarding senate bill postponing adoption of multi-state standards as a result of issues with public opinion associated with common core. – Melody quoted as saying “will not adopt” – she was leading to the process that will occur to determine acceptance and had said – SD will not adopt *without evaluation*.

Creating a process for evaluating standards – Standards Revision Process – make sure that what's written is what's right for SD.

Workgroup – teachers, parents, industry, admin – evaluate and make recommendation to state regarding adoption or modification.

First meeting for NGSS in January

What we used for science standards in the past is groundwork for Framework for science standards.

Achieve data tool comparing NGSS to current state standards.

Discussion about SD values and developed questions of requirements for SD Standards.

Have 2 more 2-day meetings set up for Feb & Mar

May require additional help – may require stage 2 of workgroup.

Pubic Forums will be available for discussion

DOEScience List Serv – to be added – contact Sam.

Summer Science Academies – South Dakota Go Sign Me up .com

Summer 2015 K-5 teachers; 2-day training

Year 1 (MS) really successful.

Update from NSTA (Mary Colson in attendance at conference but not at business meeting)

National Conference in Boston

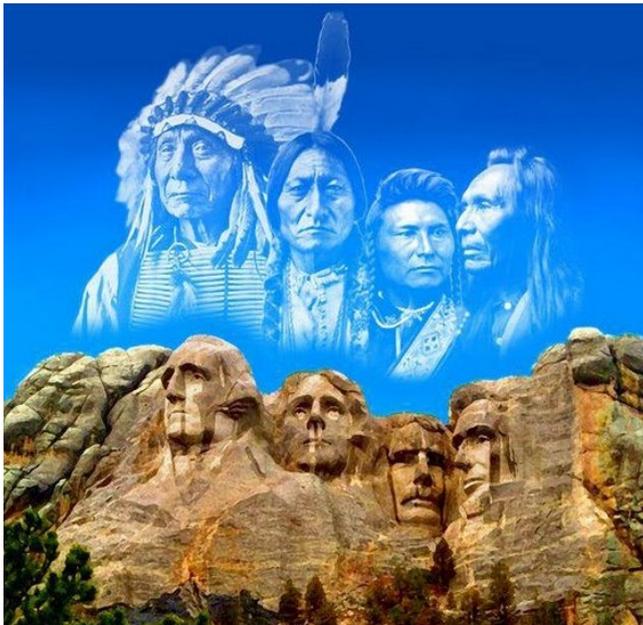
Several members attending – reminder to meet up at the regional organization social during the conference.

Recommendations for 2015 Conference Featured Speakers due to Julie this summer – decisions made in the Fall.

Encourage other people to attend this meeting – be part of the organization.

Next Year's Conference is Feb 5-7, 2015!

**Molly moves to Adjourn; Kim B. 2<sup>nd</sup>; all in favor.**



**Why science teachers  
should not be given  
playground duty.**

# Spring Science Discovery Days at the Sanford Center in Sioux Falls

Tuesday April 29, 2014

Would your students be interested in learning more about biomedical careers available within our region? Do they often have questions about what science skills are required to perform a certain job or what college degrees might be needed?

We invite high school sophomores and juniors with an interest in the sciences to join us for *Science Discovery Days*. Attendees will get exposure to hands-on techniques and skills utilized by regional science professions. The program includes career presentations and hands-on exhibitors from area industries and universities. Attendees will receive lunch and a Sanford PROMISE T-shirt. The program runs 8:30-2:30.

Presenters include professionals from Sanford Research, Sanford Health, Washington Pavilion, Fisher Scientific, POET, Augustana College, Northern State

University, SDSU, and other area biomedical business, universities, and industry representatives. We are limited to accepting the first 300 registered students – so be sure to register soon.

To register, please send the following information to: [SanfordOutreach@sanfordhealth.org](mailto:SanfordOutreach@sanfordhealth.org)

School Name; Contact Name, Phone and Email; and Number of Participants

Note: we expect schools to minimally provide one adult escort (teacher, counselor, administrator, parent, etc) for every 15 students registered.

Contacts will be emailed ~1 month prior to the event with program packets including event details and parent/guardian permission forms.

Check us out on the web at [www.SanfordResearch.org](http://www.SanfordResearch.org)

Contact us at 605.312.6590 or [SanfordOutreach@SanfordHealth.org](mailto:SanfordOutreach@SanfordHealth.org)

“Like” Sanford Research on Facebook



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## Announcing NASA's 2014 Edition of the Cassini Scientist for a Day Essay Contest

The Cassini spacecraft launched in October 1997 and has been orbiting Saturn since 2004. We are celebrating Cassini's 10-year anniversary orbiting Saturn with a special edition of the essay contest. The 2014 Cassini Scientist for a Day Essay Contest is open to students in grades 5-12. Essays must be under 500 words.

There are three essay topics to choose from: Target 1. Saturn's F ring; Target 2. Saturn's moon, Titan; Target 3. Saturn (specifically the north polar region of Saturn)

Students choose one of these topics and write an essay about why they think this image should be taken by the Cassini spacecraft. What questions do they hope will be answered by taking this picture? The essay contest meets U.S. National Science and Language Arts Standards. For contest rules, videos about each essay topic, a downloadable contest flyer, frequently asked questions, and more information, visit: <http://go.nasa.gov/1k1sDGj>

The contest deadline is Thursday, April 17, 2014. All essays must be submitted by the student's teacher (or parent, if homeschooled). If the essay contest is used as a class assignment, please send the top 3 essays from each class, along with a list of other students who wrote essays for the contest.

All students who write essays will receive a certificate of participation. U.S. winners and their classes will be invited to participate in a teleconference with Cassini scientists. U.S. and international winning essays will be posted on the Cassini website. For questions about the contest, e-mail [scientistforaday@jpl.nasa.gov](mailto:scientistforaday@jpl.nasa.gov)

Good luck! & Best wishes,  
The Cassini Outreach Team  
[scientistforaday@jpl.nasa.gov](mailto:scientistforaday@jpl.nasa.gov)