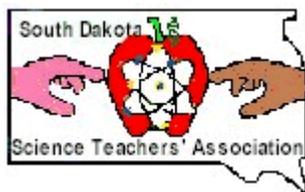

South Dakota Science Teachers' Association



Winter 2016

January 2016

Volume 139



PRESIDENT'S LETTER—JULIE OLSON

Happy New Year! I enjoyed the break and more time with my husband, children, and other family members. The days when my children have the holidays free is most likely coming to an end as they have or are finishing college and will move onto their new adventures. Christmas break also gave me and my students a chance to get started on their science fair projects without the constraints of time. If you haven't mentored students doing a science fair project, I highly recommend it as it really makes you think about the scientific process. Some past projects have become ideas for regular classroom activities such as: The effects of air fresheners on seed germination; or - The effects of tobacco products on segment regeneration in black worms! You and the students really get to see each other in a different light. Other activities that you can mentor students in is: Science Olympiad, Envirothon, Science Bowl, and a host of other science related competitions.

I can't believe that two years have gone by since I became the president of the South Dakota Science Teachers Association! And 4 years since being elected. Time flies when you are having fun. It couldn't be otherwise when working with the individuals that I have had the privilege to work with as officers as well as the science teachers across the state. This also means that this is an election year. Please con-

sider running for one of the open positions. Feel free to contact me and/or look on the SDSTA website to see what the officers' duties are by using the handbook link. I had trepidations when I first ran for office but quickly found out I had nothing to worry about. I had received so much support, ideas, and encouragement that I felt I should give back although I cannot begin to repay all of the benefits I have received from belonging to this organization. Past and current officers are all quick to help.

The conference looks to be better than ever with guest speakers on microscope repair and upkeep. The Texas Instrument crew will be on hand to show us the newest tools and lessons developed in conjunction with Sanford PROMISE. Our banquet speaker is South Dakota born writer Sam Kean (*The Disappearing Spoon*). There are always great door prizes for the luncheons and special awards at the banquet. Newcomers can find out more about these grants and awards at the conference. There are also great opportunities to socialize and make connections between sessions as well as before and after the banquet. Don't forget the business meeting during Friday's last session. I am putting out a challenge for each person that has attended before to bring someone that hasn't. There may be a special door prize for both... Looking forward to seeing everyone!

Sincerely,

Julie Olson

SDSTA President, 2014-2016

My friend, Power, has been super stressed all week. His boss keeps making him work overtime. ($P=W/t$).

FREEBIES

Learning is Fun: Forest Education Resources— <http://www.fs.fed.us/learn>

Educators will find K–12 resources to explore U.S. forests and grasslands and how we benefit from them. Students can connect with Forest Service programs for young adults, enter the Smokey Bear/Woodsy Owl poster contest (for grades 1–5), and learn more about forestry science and careers in the field. Elementary and middle level teachers can find ideas for the classroom as well as multimedia resources, such as Critter Cams (e.g., a bald eagle nest), virtual field trips (e.g., Boise National Forest in Idaho), and live distance-learning adventures about pollination, climate change, wetlands, and other topics.

adventures about pollination, climate change, wetlands, and other topics.

“The Easy Energy Action Plan Checklist” - http://energy.gov/sites/prod/files/2015/04/f21/EnergyActionChecklist_English.pdf

Promote energy awareness and energy conservation with this DOE checklist. The poster presents 10 Simple Ways to Use Energy Wisely, from familiar ideas like turning off lights and computers when not in use to less common tips such as using “smart” power strips and unplugging chargers when not in use. Interested teachers might host a schoolwide contest to see which classroom can have every student complete the checklist activities in one month; teachers can post the winners on Facebook with the hashtag #ActOnClimate.

Hungry Pests Invade Middle School—<http://www.hungrypests.com/resources/educators.php>

An interdisciplinary curriculum from the USDA teaches middle level students about 18 invasive species threatening the nation’s trees, plants, and crops. The curriculum supports Common Core State Standards and Next Generation Science Standards and can be used in science, math, language arts, and history classes. Through the curriculum’s lessons and online resources, students explore pests including the emerald ash borer, khapra beetle, Mediterranean fruit fly, and Asian longhorned beetle, and learn ways to stop the spread of invasive species. In the lessons, students closely read relevant texts, participate in team research projects, develop interactive maps, and share knowledge in class discussions. Other activities include creating comic strips and writing news articles about the pests. Teachers can also download a set of invasive species cards with photographs of each pest, of the harm it causes, and action steps to prevent its spread. See <http://bit.ly/21pNik6>.

Star Wars in the Classroom—<http://www.starwarsintheclassroom.com/content/science/index.asp?sw=2>

Star Wars in the Classroom provides resources for transdisciplinary teaching and learning with the Star Wars saga. Visitors will discover how to integrate the Star Wars saga into history, English/Language Arts, and science classes at the middle school and high school levels. From studies in mythology, history, philosophy, and the arts, to hands-on experiments in physics and engineering, the site’s resources can spark learning and the imagination by providing engaging and relevant experiences for students of all ages inspired by the characters and stories from the Star Wars universe.

ENTER AND WIN

World of 7 Billion Student Video Contest—<https://www.worldof7billion.org/student-video-contest>

Deadline: 2/25/2016

The contest can help you bring technology and creativity into your middle and high school classes. The contest challenges your students to create a short (60 seconds or less) video illustrating the connection between world population growth and one of three global challenges dealing with either Deforestation, Public Health, or Water Scarcity. Students can win up to \$1,000, and their teachers will receive free curriculum resources.

Toshiba America Foundation Science and Math Improvement Grants—<http://www.toshiba.com/taf/>

Deadline: 2/1/2016

The foundation seeks to improve the quality of U.S. science and mathematics education by investing in projects designed by classroom teachers. Previously funded projects include materials for the hands-on study of environmental science issues, the implementation of innovative mathematics curricula, and equipment for a teacher-designed astronomy curriculum. Grades 6–12 applications for \$5,000 or less are accepted on a rolling basis, throughout the calendar year. Grant requests of more than \$5,000 are reviewed twice a year. Applications for grants of more than \$5,000 are due on August 1 and February 1 each year. Toshiba America Foundation offers grants of up to \$1,000 to K–5 teachers. Applications for those grants are due on October 1 each year.

Rural Trust’s Global Teacher Fellowship Program

Deadline: 1/30/2016

The program will award up to 25 fellowships to support the professional and personal development of K–12 rural teachers. The awards (up to \$5,000 for individual teachers and \$10,000 for a team of two or more teachers) support teachers’ participation in self-designed summer learning experiences and a two-day place-based learning institute in the fall following the summer experience.

This fellowship is a stand-alone grant not meant to supplement others. Teachers are encouraged to center their learning in an international travel and study experience, out of which they develop interdisciplinary, place-based learning curricula aligned with their specific state and local content standards. To be eligible, teachers should be working full-time and teaching at least 60% in a rural community. Counselors, media specialists, and other school personnel working in a teaching setting for at least 60% may also apply

The National Center for Science Education's teacher network is launching an exciting new program to get scientists into classrooms across the country!

NCSE has over 30 years of experience supporting the teaching of science in public schools, with a particular focus on climate change and evolution. We believe that teachers should not be alone in this educational endeavor; scientists can and should play a role in connecting students to evolution and climate change science, as well as support teachers when challenges arise around these topics. Scientists in the Classroom is a great opportunity to connect students with real-life early career scientists, as well as for teachers to have an expert on board when teaching evolution and climate change! With this program, teachers and scientists collaborate as colleagues, peers, and partners in the scientific enterprise to further science education.

So how exactly does it work? First off, teachers apply for the program here. Then, we'll work to find a scientist in the area who matches the interests and needs of the class. Once a match is made, we'll connect the teachers with a local scientist and provide guidance throughout the semester-long program to plan and carry out two in-class visits.

For more information on Scientists in the Classroom, visit NCSEteach.com, or email Kate Heffernan, the Scientists in the Classroom intern at Heffernan@ncse.com. I hope you take advantage of this awesome opportunity to connect your students to the scientific community!

BASICS OF ROBOTICS PLATFORMS WORKSHOP

This workshop will be beneficial to those who wish to lead or assist a robotics team or club, or teach using LEGO® robots.

This workshop provides an introduction to LEGO® MINDSTORMS® NXT and EV3 through the utilization of the 4-H Robotics platforms curriculum. Participants will learn about the basic robot hardware and the EV3 software. They will learn the basics of moving the robot as well as be introduced to the ultrasonic sensor.

Date and location options:

February 13th: Sioux Falls Regional Center
2001 E 8th Street
Sioux Falls, SD 57103

February 13th: Aberdeen Regional Center
13 2nd Ave SE
Aberdeen, SD 57401

February 13th: Pierre Regional Center
412 W. Missouri Ave
Pierre, SD 57501

February 20th: Sioux Falls Regional Center
2001 E 8th Street
Sioux Falls, SD 57103

February 20th: West River Ag Center

1905 Plaza Blvd
Rapid City, SD 57702

Agenda – (times listed are cst)

9:45 a.m. Check in
10 a.m. Introductions and getting to know hardware
11 a.m. Basics of moving your robot and design challenge
12 p.m. Lunch – on your own
1 p.m. Program challenge 1
1:45 p.m. Introduction to ultrasonic sensor
2:45 p.m. Program challenge 2
3:30 p.m. Wrap up

Registration information

Registration for Feb 13 workshop is due Feb 5
Registration for Feb 20 workshop is due Feb 12

To register please contact Christine Wood, SDSU Extension 4-H STEM Field Specialist, 605-782-3290, or Christine.Wood@sdstate.edu.

Enrollment at each location is limited.

Participants will be asked to bring a laptop.



AMERICAN PHYSIOLOGY SOCIETY—TEACHER PD

Online Teacher Professional Development Opportunity: Applications due Jan. 25, 2016

For middle and high school teachers—please share with your colleagues, consider applying to our year-long science teacher professional development program with a total of up to \$1,500 in fellowship payments: <http://www.frontiersinphys.org>

Applications are due no later than January 25, 2016.

Questions? Contact Margaret Stieben mshain@the-aps.org

CHEMISTRY SUMMER CAMP FOR HS STUDENTS

A week at the Department of Chemistry and Applied Biological Sciences. An experience of a lifetime for any young woman or man!

This week-long summer program offers a perfect combination of innovative hands-on curriculum and fun! The camp is designed to provide an opportunity for talented high school students to experience science in action. Through hands-on experiments and discussions, the green chemistry camp seeks to instill an enthusiasm and appreciation of the role of chemistry in everyday life and to promote a knowledgeable understanding of scientific issues.

The Chemistry Summer Camp is for high school students and it will be held July 17-22, 2016 at the Department of Chemistry and Applied Biological Sciences, SDSM&T.

The registration for the summer camp is open. More information about this camp and how to register can be found online by visiting our website: <http://www.sdsmt.edu/Academics/Events-and-Outreach/Summer-Camps/Camp---Green-Chemistry/>



THE CHYMIST.COM WEBSITE—DAVID A. KATZ

I had the opportunity to see David Katz present and the ChemEd conference in Minneapolis in 1997. I had brought back a packet of his Cooking with Chemistry activities but had inadvertently lost them last year (or borrowed them to someone??). Anyways, an internet search turned up his website which is full of resources that not only include his Cooking with Chemistry (<http://www.chymist.com/cooking.html>) but Forensics, Consumer Chemistry, Polymers, History of Chemistry, and Chemistry of Toys (to name a few).

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

With schools incorporating both chemistry and physics into the required curriculum, there is a growing need to provide different levels of these courses to meet the needs of the students taking them. There is also the desire to provide elective courses aimed at applying scientific principles to career oriented training (e.g. Forensics).

Example of a lab: The partial thermodegradation of mixed saccharides with protein inclusions (aka making peanut brittle) - uses the chemical names of the components and metric measurements. ChemEd 2017 will be held at SDSU!!!! If you teach Chemistry or Physical Science, you have to go!!!! I brought back so many activities that I still use today.



“What did you think of the new restaurant on the moon? The food was great but there was no atmosphere”

THE CASE OF THE MELTING SNOWMAN—ENGAGING STUDENTS IN THE PRACTICES OF SCIENCE

Which will melt first? A snowman with or without a coat?

Materials: small cups, water, polar fleece or other material scraps, an assortment of balances, beakers, graduated cylinders, Heat lamps (optional) - what ever materials you would like to provide.

Procedure:

Create “snowmen” by either using snow from outside, making ice cubes, freeze water into small paper cups, or if you have a snow cone maker, make shaved ice

1. Pose the initial question and then have students start asking their own. (Asking Questions)
2. Students engage in arguments in small groups then as a class.
3. Have them draw a model of what they think will happen to include as much detail as possible (e.g. particles, energy). (Developing and Using Models)
4. Plan an investigation to determine the original question. (Plan and carry out investigations)
5. Collect data and interpret it. Students can graph time vs. either mass of the snow-

man or water loss. The slope or rate of loss can be calculated.

6. Construct explanations for what happened. This may also have students modifying their original models/drawings.
7. Students will engage in argumentation with other student groups on the variables measured, methods and materials used, and results.

Extensions:

Challenge students to create a device to keep the snowman from melting.

Place the snowman on different metals. What is the effect on melting rate?

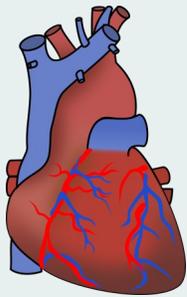
Make the snowman colored. Does that matter?

Create polymer slime snowman from white glue/borax. Is this snowman melting?



BRAIN JOKES

When dissecting hearts, provide the students with both red and blue yarn. Make them thread the yarns through the proper pathways. It really makes them think. As an extension, you could have them label the parts.



SNOW SCIENCE

1. Blow soap bubbles outside—works best when it's about 0 F/-18 C. Heat the cheap soap solution so it is warm/hot. It should freeze into a delicate sphere.
2. Build an igloo and study heat conservation.
3. Inflate a balloon and tie it shut. Place outside for awhile then bring it back in and watch it re-inflate. (To quantify, measure the circumference when hot & cold.)
4. Maple syrup candy. Pour hot maple syrup onto snow to make a "taffy".
5. Make snow by throwing boiling water into the air. Be careful with this!
6. Insulator challenge: Give them a coffee can and an Erlenmeyer flask with stopper and thermometer. They are to make an insulator that will keep the hot water in the flask as warm as possible.
7. What type of mitten material will keep you warmest?
8. Jello animals—put warm gelatin into film canisters then have the students place them outside in various conditions/coverings.. for 10 minutes (longer if it is warmer). Which survived (Jello stayed fluid) and why?



Brain Jokes

1. What is a sleeping brain's favorite band?
2. What did the hippo-campus say during its retirement speech?
3. What do you call a group of brains that form a singing group at school?
4. What kind of fish performs brain surgery?

1. REM
2. Thanks for the memories
3. A Ghal club
4. A neurosurgeon

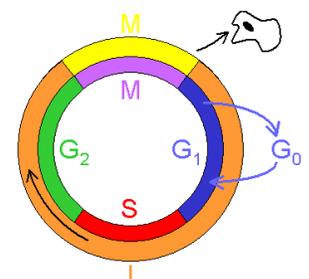
The Eukaryotic Cell Cycle and Cancer

This is a Howard Hughes Medical Institute (HHMI) Bio-interactive activity that also provides a student worksheet as part of their Medicine in the genomic era series. <http://www.hhmi.org/biointeractive/eukaryotic-cell-cycle-and-cancer>.

The eukaryotic cell cycle comprises a sequence of events that culminate in cell division. Proteins at different checkpoints throughout the cell cycle regulate progression from one phase to the next—a process that usually works without errors. When errors do occur, they can have catastrophic consequences, including the development of cancer: cells progress through the cycle unchecked, replicating indefinitely to form tumors.

Learning activities:

1. HHMI Bio-interactive activity with worksheet.
2. Simulated brain scans using Vernier radiation detectors.
3. Sheep brain dissection. Project Neuron Sheep Brain Dissection Guide https://neuron.illinois.edu/files/U4_L2_StudentPacket_SheepBrainExploration_o.pdf
4. Sanford PROMISE lab—staining and viewing brain tissue
5. Talking to a brain cancer research scientist—Sanford Research



SD-AAPT Photo Contest

<http://sdaapt.sdsta.org/>

The photo contest is open to high school students in grades 9-12. Students must print out, sign, and return the Contest Rules and Entry Agreement, HTML version or WORD version, when submitting their entry. Failure to submit this form will invalidate the contest entry. Entries are limited to 6 per teacher per school each year. If possible, please place all entries from the school in one package. The deadline for entry is NOW. If you have students with entries, you need to get that entry in right away. Mail or send an email with attached photo & description to James@SDSTA.org (and bring original photo to conference for judging.)

Research Fellowship

The 2016 Science Educator Research Fellowship at Sanford Research is accepting applications until February 15, 2016. I highly encourage you to take advantage of this great opportunity. Engage in science research and translate that research into curriculum for your classroom. For further information and to access the application, please see the [website](#) and see the linked flier.

Peter Vitiello, PhD
Phone (605) 312-6405

WHO SAYS I CAN'T DRINK?

Breaking the Myth: A dinner theatre dialogue for students grades 6-10 & their parents

January 28, 2016
Dinner 6:15 p.m.
Performance 7 p.m.
Post-show Discussion 7:30 - 8 p.m.

This is a **FREE** event, but tickets are still required.

Washington Pavilion,
Sioux Falls, SD

[https://
www.washingtonpavilion.org](https://www.washingtonpavilion.org)

Do you know a K-6 grade teacher who provides excellent mathematics or science instruction to his or her students? Then please consider nominating him or her for one of the Presidential Awards for Excellence in Mathematics and Science Teaching (**PAEMST**). Anyone—researchers, parents or members of the general public—may nominate a K-6 grade teacher by completing the nomination form available on the PAEMST website (www.paemst.org). To submit a nomination, you only need the teacher's contact information.

PAEMST is the highest honor the United States government bestows for K-12 mathematics and science teaching. Since 1983, more than 4,400 teachers have been recognized for their contributions to mathematics and science education. Awardees serve as models for their colleagues, inspiration to their communities, and leaders in the improvement of mathematics and science education. Up to 108 teachers may be recognized each year.

Presidential Awardees receive a certificate signed by the President of the United States; a trip for two to Washington, D.C. to attend a series of recognition events, professional development opportunities, and policy-maker meetings; and a \$10,000 award from the National Science Foundation.

The Nomination Deadline is April 1, 2016. The Application Deadline is May 1, 2016 for teachers (K-grade 6). If you know more than one teacher deserving of this award, you may submit more than one nomination. Teachers may also initiate the application process themselves at www.paemst.org.

Please consider nominating outstanding mathematics and science (including computer science) teachers today!

Sincerely,

Ramona Lundberg, SD **PAEMST** Science Coordinator
NSTA NGSS Curator
NBCT AYA Science

*The National Science Foundation administers PAEMST on behalf of the White House Office of Science and Technology Policy.



A VERY EDISON INSTAGRAM CONTEST

Hello Everyone! The Edison Innovation Foundation is hosting a contest to help populate their Instagram page. Edison fans should submit an original (no third party copyright) illustration or photograph involving Thomas Edison to: info@thomasedison.org.

Due Date: Feb 15th, 2016

THE TOP THREE INSTAGRAM ENTRIES WILL BE REVEALED ONLY ON INSTAGRAM FEB 29TH, 2016

THE PRIZES WILL BE THREE AMAZON GIFT CARDS:

- 1st place: \$50
- 2nd place: \$25
- 3rd place: \$10

RULES:

- Illustration must be original
- The post must be positive
- Submit as a jpeg
- If stating facts and quotes, please make sure they are accurate and send the reference information for the judges to check.

Submit before the due date

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Huron, SD February 4, 5, & 6, 2016 Science & Math Conference

If you haven't gotten your Advance Registration form in yet, you have about a week to do so. Otherwise, you'll have to do an on-site registration to attend. Your two-day registration includes the cost of both noon luncheons. There is an additional cost for the Friday evening banquet. If you overlooked including that amount on your Advance Registration form, you will have till noon on Friday to purchase a Banquet ticket. The Banquet Speaker is Sam Kean. We will have a few copies of his books for sale. Sam will be available after the Banquet to sign copies.

This professional development conference opens Thursday night with two sharing sessions. Both the Math and the Science Sharing sessions ask participants to bring copies of their best lesson, lab or demo. A few science people have indicated they will be bringing materials so that you can experience a hands-on sharing session. Bring yours and / or just come and experience others. To be sure you won't run out of copies, feel free to post your hand-out on the conference WIKI. (Wiki assistance will be available at the Conference Registration Desk and/or from many officers.)

Many of the usual favorites are back. You will find the "Classroom Treasures" in the Salon. It's the room we've set aside for teachers to bring materials that they no longer use & would like to donate to other teachers for their classroom use. We do ask that you do NOT bring textbooks, non-working items, or materials that are marked "School Property".

There will be many vendors in attendance. Please take the time to stop by and visit with them. They may have the solution you need for your classroom. One of them (Nerd Nook) will have lots of items for sale. So if you don't have a nerdy or classy t-shirt to wear for Saturday, you should be able to find one there.

A copy of the sessions will be available at the Registration Desk, but if you want one now, go to SDSTA.org and use the Conference [link](#).

Continue your education as a Coyote!

University of South Dakota School of Education



Undergraduate Teaching Majors

- K-8 Elementary Education
- 7-12 Biology, Chemistry, Earth Science, English, History, Mathematics, Physics, Political Science, Speech Communication, Theatre
- K-12 Art, French, German, Music, Physical Education, Spanish, Special Education*

*Double Major: The Special Education major must be paired with Elementary Education or a 7-12/K-12 teaching major.

Undergraduate Non-Teaching Majors

Kinesiology and Sport Science
(Exercise Science or Sport Management Specialization)

<http://admissions.usd.edu>

Curriculum and Instruction

- M.A. Elementary Education, Technology, Secondary Education, Special Education
- Ed.S., Ed.D. Curriculum and Instruction

Counseling and Psychology in Education

- M.A., Ed.S, Ph.D. Human Development and Educational Psychology
- M.A., Ed.S, Ph.D. Counseling
- Ed.S., Ph.D. School Psychology

Educational Administration

- M.A., Ed.S., Ed.D. PK-12 Principal, Director of Curriculum, School District Superintendent
- Ed.S, Ed.D. Director of Special Education
- M.A., Ed.D. Adult and High Education

Kinesiology and Sport Science

- M.A. Kinesiology and Sport Science
(Exercise Science or Sport Management Specialization)

www.usd.edu/grad



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NASA Space Place

Educator Newsletter

January-February 2016 / Vol. 9, Issue 1

NEWS AND NOTES FOR FORMAL AND INFORMAL EDUCATORS

Space Place is a NASA website for elementary school-aged kids, their teachers, and their parents.

It's colorful!
It's dynamic!
It's fun!

It's rich with science, technology, engineering, and math content!

It's informal.
It's meaty.
It's easy to read and understand.
It's also in Spanish.
And it's free!

It has over 150 separate modules for kids, including hands-on projects, interactive games, animated cartoons, and amazing facts about space and Earth science and technology.

Happy New Year! While you're jotting down those New Year's resolutions, be sure to check out what's happening at NASA Space Place, and to keep up with all the latest, follow us on Facebook and Twitter @nasaspaceplace.

New!

Make a pastel aurora

These displays are caused by energy that comes from the sun. You can make your own colorful aurora with oil pastels.

<http://spaceplace.nasa.gov/pastel-aurora>

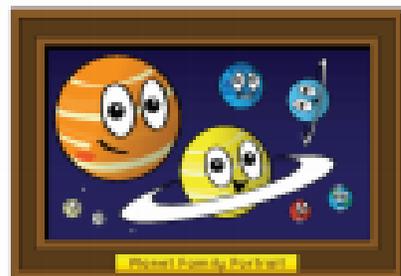


New!

Why are planets round?

And how round are they? Could some be rounder than others?

<http://spaceplace.nasa.gov/planets-round>



New!

All about Earth's atmosphere

Explore all six layers of Earth's atmosphere in this new series.

<http://spaceplace.nasa.gov/atmosphere>

What is a galaxy?

We live on a planet called Earth that is part of our solar system. But where is our solar system? It's a small part of the Milky Way Galaxy.

<http://spaceplace.nasa.gov/galaxy>



Explore Earth and space at spaceplace.nasa.gov

New Game!

Play Helios! This game challenges you to keep the fusion reaction going in the sun. It won't be easy.

You have to combine protons and neutrons in just the right way to make helium and release energy. Keep the sun shining brightly!

<http://spaceplace.nasa.gov/helios-game>

**Interactive Books**

NASA Space Place has interactive books about planets, technology, and space. Turn the pages with your mouse or print out a PDF.

<http://spaceplace.nasa.gov/search/books>

Lucy's Planet Hunt

Lucy wonders whether there could be life elsewhere in the universe.

**First Annual Planet Awards**

We will see which planets are the best in the solar system.

**Super Star Meets the Plucky Planet**

This is the story of how Earth and the sun come to mutual understanding and respect.

**Special Days**

Noteworthy days in NASA and space history you can observe in your classroom.

January 7 — In 1610, Galileo discovers Jupiter's four largest moons.

Find out how many moons Jupiter has, as well as the rest of the planets in our solar system.

<http://spaceplace.nasa.gov/how-many-moons>

January 14— The Huygens Probe landed on Saturn's moon Titan in 2005.

Learn more about Saturn, the planet with the most beautiful rings!

<http://spaceplace.nasa.gov/all-about-saturn>

January 31 — On this day in 1958, Explorer 1 was the first U.S. satellite launched into orbit.

Do you know what happens to satellites when they're old and need to be replaced?

<http://spaceplace.nasa.gov/satellite-graveyard>

February 6 — On this day in 1971, astronauts played golf on the moon!

Why is there less gravity on the moon? What is gravity anyway?

<http://spaceplace.nasa.gov/what-is-gravity>

February 18 — Pluto discovered on this day in 1930.

What we now know about this tiny dwarf planet.

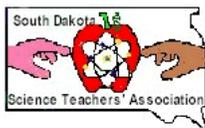
<http://spaceplace.nasa.gov/ice-dwarf>

February 20 — First American, John Glenn, orbited Earth in 1962.

See pictures of astronauts in action.

<http://spaceplace.nasa.gov/gallery-technology>





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Glider planes will soar again this January 27 in the South Dakota Discovery Center in Pierre

The Pierre Elks Lodge Number 1953 will host the Third Aviation Day at the South Dakota Discovery Center. Organizer Steve Wegman says the event runs from 1 p.m.-4 p.m., which is an early dismissal afternoon for Pierre schools.

There will be other aviation events as well as the Pierre Model Airplane club, remote control flying machines and airplane computer simulator

There is no cost for the event, which runs from 1 pm-4 pm

Several current members and pilots from United States Air Force 28th bomb wing of Ellsworth Air Force Base, one of the homes for the B-1 bombers, will be available to help kids to build gliders and answer their questions about aviation.

This event is sponsored by United State Air Force, Ellsworth Air Base, South Dakota Discovery Center, Pierre Elks Lodge #1953, and Mustang Aviation of Pierre

Also invited are Pierre Civil Air Patrol who will be there helping kids build other types of flying machines. All children who wish to be assured a glider should register on the SD

The SDSTA Newsletter is published four times a year. The January issue (this one) is e-mailed to 130 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 paid conference registration 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 \$50 per page (or 3 to 4 quarter pages)

Discovery Center Facebook page at <https://www.facebook.com/#!/SouthDakotaDiscoveryCenter>

Groups that will have more than five children should email Sue Douglas at the Discovery Center at suedouglas@sd-discovery.com

For more information call Steve Wegman at 605- 295-1221 or wind@pie.midco.net Pierre Elk's Lodge Post Box 292 Pierre, SD 57501 605-2951221 for more info

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 _____

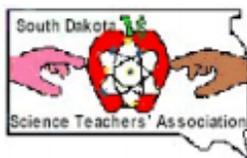
Your School _____ School Phone _____ - _____
School Address _____
City _____ State _____ Zip _____

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, SDSTA Newsletter
15 North Fifth Street
Groton, SD 57445-2024



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ADDRESS SERVICE REQUESTED



2016 Teacher Awards

Dear Science Teacher:

The South Dakota Experimental Program to Stimulate Competitive Research (SD EPSCoR) is a state-wide effort whose goal is to expand our state's research capacity and increase our STEM workforce through targeted investments in STEM research and education. The SD EPSCoR program is funded by major grants from the National Science Foundation and the state of South Dakota Governor's Office of Economic Development.

One of the ways that SD EPSCoR is trying to achieve these two goals is by increasing the number of schools and students participating in the state's Regional Science Fairs. We are currently providing a \$5000 award for "High School Science Lab Makeovers" to schools participating in sciences fairs and an all expense travel for one student and teacher selected for an exemplary student research project to participate in the Intel International Science and Engineering Fair (ISEF) as an observer.

As part of our continuing efforts to increase the number of participating schools and students, and to raise the level of the student research projects that are presented we are pleased to announce a new, school-based, science-fair school challenge competition that will take place at the regional science fairs (SDJAS and observer awards are not available to DWU this year) beginning this year.

This challenge will award three cash prizes to schools whose top three scoring student research projects have the highest mean score. The prizes are \$1,000 for the first place team, \$750 for the second place team, and \$500 for the third place team. This money may be used by the school for any purchases of STEM equipment, supplies or related investments that will increase student participation in the state's science fairs allowing students to undertake more in-depth long term research projects.

SD EPSCoR is also pleased to announce our new sponsoring partner, Fisher Science Education. Fisher will be adding an additional \$1000 to the \$5000 award, and \$500, \$250, and \$100 to the school challenge awards at each fair. In addition, all schools that participate in science fairs will receive a 25% discount on all orders placed with Fisher. The 25% savings is in addition to those who will win the above mentioned school awards.

Lastly, three (3) students will be selected from each fair to participate in the South Dakota Junior Academy of Science April 8th at the University of Sioux Falls where they will compete for the chance for an all-expense paid trip for them and their teacher to the National Junior Academy of Science.

SD EPSCoR recognizes your efforts in both guiding students in their research as well as in the classroom. These programs are a way for SD EPSCoR to say thank you for all that you are doing to help prepare the next generation of South Dakota's scientists, engineers and mathematicians.

If you have any questions about this program, please do not hesitate to contact me or to contact the SD EPSCoR Office.



Phillip Huebner, Director of STEM Partnerships

SD EPSCoR

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Brookings, SD 57006

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