

**Montana Science Teachers Association**



# **NEWS JOURNAL**

**A publication of the Montana Science Teachers Association**

**December 2010**

## Submitting Articles to the MSTA News Journal

When submitting articles, please adhere to the following criteria:

- Electronic submissions are preferred in Microsoft Word format. These can be attached to your email message.
- If in doubt about format, submit your work in .rtf format.
- If truly in doubt, paste your submission in the body of the email message.
- Lab activities may be mailed. Please cite any references and also state which National Science Standards your activity meets.

**John Graves, Editor**  
 1112 Hunters Way  
 Bozeman, Montana 59718  
[graves@montana.edu](mailto:graves@montana.edu)

**Tentative Submission/Publication Dates**  
 August 15/September  
 November 15/December  
 February 15/March  
 April 15/May

### Montana Science Teachers Association Membership Application

Name _____		Date _____																	
Last	First																		
Address _____		Phone (____) _____																	
_____		_____																	
City	County	State	Zip																
School/Affiliation _____		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left;">Dues Category</th> </tr> </thead> <tbody> <tr> <td>1 year</td> <td style="text-align: right;">\$20.00 ____</td> </tr> <tr> <td>MSTA/MCTM</td> <td style="text-align: right;">\$30.00 ____</td> </tr> <tr> <td>MSTA/MEEA</td> <td style="text-align: right;">\$30.00 ____</td> </tr> <tr> <td>3 years</td> <td style="text-align: right;">\$50.00 ____</td> </tr> <tr> <td>Life</td> <td style="text-align: right;">\$150.00 ____</td> </tr> <tr> <td>Student</td> <td style="text-align: right;">\$5.00 ____</td> </tr> <tr> <td>Retired</td> <td style="text-align: right;">\$5.00 ____</td> </tr> </tbody> </table>		Dues Category		1 year	\$20.00 ____	MSTA/MCTM	\$30.00 ____	MSTA/MEEA	\$30.00 ____	3 years	\$50.00 ____	Life	\$150.00 ____	Student	\$5.00 ____	Retired	\$5.00 ____
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Grade Level	Subject																		
___ K-6	___ All sciences	___ Physics																	
___ 6-9 MS or JH	___ Life Science	___ Chem																	
___ 9-12	___ Phys Science	___ Other																	
___ College/Univ.	___ Earth Science																		
___ Sup/Admin.	___ Biology																		

Make checks payable to MSTA

Return to LeAnne Yenny  
 3880 Equestrian Lane  
 Bozeman, MT 59718

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Montana Science Teachers' Association

## From the President

Hello, all!

We are definitely in winter's deep grip. Soon however, we will be at the shortest day of the year, and our days will begin lengthening. You might find this website interesting: <http://maps.nrel.gov/node/10>

You can choose an area of the United States to see variations in the solar intensity of that area. What a great way to see how the sun's angle causes seasons!

Our recent convention in Helena this October was a huge success. It was great meeting so many of you! Special thanks go out to our presenters. They provided so many incredible learning opportunities for all of us. As you are putting up your new 2011 calendar, don't forget to place next year's MEA-MFT conference, which will be held October 20 – 21 in Missoula.

While you are in front of your calendar, add the annual Math and Science Leadership Conference, which will be January 28 and 29, at the Comfort Inn in Bozeman. We're excited about this, because the focus this year is on Web 2.0 tools and how to use them in the classroom. Web 2.0 tools are FREE and are incredibly useful ways to enrich your lessons. This should be a particularly useful conference, especially with everyone's science budget tightening. See this newsletter for more information.

Since it's December, winter break is quickly approaching, with students' excitement level rising daily. Along with the excitement comes a tendency for the students to have difficulty focusing on classroom learning. One of the ways I deal with this is by having students active during the lesson. Students can act out a process (my students will be doing a mitosis "dance"), solve a mystery, create models... the list is endless, and they'll be really "with" you. What do you do to channel the energy?

On the news front, a new form of life has been discovered, which uses arsenic (!) to build parts of its cell. What a great opportunity to teach about life, and even how we look for life on other planets! Here's a link for more information: [http://www.nasa.gov/home/hqnews/2010/dec/HQ\\_10-320\\_Toxic\\_Life.html](http://www.nasa.gov/home/hqnews/2010/dec/HQ_10-320_Toxic_Life.html)

Until next year,  
Shirley Greene  
MSTA President



# MSTA Information



**The URL for the MSTA webpage is**

**<http://montanascience.org>**

**If you have trouble with that address, try**

**<http://www.ivymerriot.com/montanascience/index.html>**

The page has many new listings and links, be sure to visit it often.

**MSTA E-blast Listserv**  
to sign up, visit the website and  
follow the E-blast link

## New MSTA Board Members

President: Shirley Greene

President-Elect: Beth Thomas

Treasurer: Carol Pleninger

Region 1 Director: Karen Hutchinson

Region 2 Director: Cynde Jacobsen

Region 6 Director: David MacDonald

Biology Representative: Tom Cabbage

Earth Science Representative: Patrick McNelly

Physics Representative: Daniel Baker

Past President: Alyson Mike

*Visit the MSTA Website for photo of Board  
members and more!*



## NEW OPI SCIENCE SPECIALIST



Kristen Crawford is the new Science Curriculum Specialist at the Montana Office of Public Instruction (OPI). Kristen is a native Texan but has spent much of her educational career working in the southeastern part of the United States. She received her Bachelor of Science Degree in Education from the University of Alabama, a Master's Degree in Reading Education from Vanderbilt University, and an Educational Specialist Degree in Instructional Leadership from Tennessee Technological University. She has over eleven years of classroom teaching experience and has served as a part-time consultant for Delta Education where she trained teachers around the southeast on their kit-based *Full Option Science System* (F.O.S.S.) curriculum.

Most recently Kristen worked as a Science Specialist for the Georgia Department of Education. In that role she worked primarily with middle and high school teachers on implementing the state's new science standards and with improving the quality of their instruction. Differentiation strategies and the use of formative assessment are two particular passions of hers within the field of science education.

Kristen is married to Craig who is the Alternative Education Coordinator for Helena Public Schools. They have two children, a freshman son and a seventh grade daughter. Kristen is enjoying her new job at OPI and her new home in the beautiful state of Montana!

## Professional Development Opportunities for Teachers



### MISSISSIPPI VALLEY ARCHAEOLOGY CENTER AT THE UNIVERSITY OF WISCONSIN - LA CROSSE

Exploring the Past: Archaeology in the Upper Mississippi River Valley

Walking beside thousand-year-old burial mounds, flaking raw stone into tools, learning how potsherds tell us about human behavior, and understanding how humans adapt to complex, ever-changing environments-our 2011 NEH Summer Institute features all this and more.

The Mississippi Valley Archaeology Center at the University of Wisconsin-La Crosse will offer a three-week NEH Summer Institute on July 11–29, 2011. This dynamic learning experience for K-12 teachers will explore how Native Americans and Euro-Americans have adapted to the Upper Mississippi River Valley over the past 13,500 years, and how archaeology leads to an understanding of how human cultures change and adapt through time.

The Institute will feature a one-day excavation experience, field trips to archaeological sites, hands-on laboratory and workshop activities, demonstrations, and classroom activities. Individual projects will help participants tailor the content to their own teaching areas. Participants receive a \$2,700 stipend to help offset their expenses.

Application and other information on the Institute is available online at <http://www.uwlax.edu/mvac/neh.htm>. The deadline for applications is March 1, 2011.

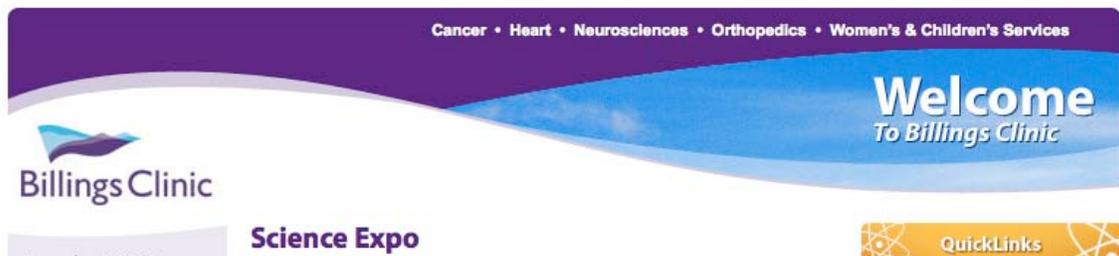
The Billings Clinic Research Center Science Expo has been the Intel International Science and Engineering Fair – affiliated science fair for the 24 counties of southeastern Montana for the last 23 years. It is still going strong.

The Science Expo is scheduled for March 25 & 26, 2011 to be held on the campus of Montana State University – Billings. Our deadlines for applications are Friday, February 11, 2011 for high school projects and Friday, February 25, 2011 for elementary and middle school projects. The Science Expo is open to all students in our region from grades 1 through 12 and there is no entry fee due to the generosity of our sponsors. The winners of the high school division receive an all expenses paid trip to compete at the Intel ISEF in Los Angeles, CA in May of 2011.

For more information contact:

**Marietta Reviczky-Dolan**

Science Expo Coordinator  
Billings Clinic Research Center  
1045 North 30th Street  
Billings, MT 59101  
406-247-6456  
[mreviczkydolan@billingsclinic.org](mailto:mreviczkydolan@billingsclinic.org)





## Leadership Conference 2011

Building a Better Future for Montana's Children

The 2011 Math Science Leadership Conference will be held in Bozeman, January 28 & 29. The conference topic is Web 2.0 tools and its application in the math and science classrooms. Check it out at <http://montanamath.org/leadership11.pdf>

Are you an NSTA member? Have you used the NSTA Learning Center? It is full of excellent professional development activities for teachers including SciPacks, SciGuides, Symposia, Podcasts and other PD related materials. It is worth your while to check out.



Opportunities for Teachers and Students

# Laurel Aviation and Technology Week May 9-12, 2011

Contact:

**Zada Stamper**

[zada\\_stamper@laurel.k12.mt.us](mailto:zada_stamper@laurel.k12.mt.us)

Activities include speakers in local schools, static displays at Laurel High School, Fly-overs at Laurel Airport, Aircraft Displays at Billings Logan Airport

A free, one-of-a-kind educational event for students and schools ONLY.



Image from: <http://www.lisisoft.com/imglisi/5/Screensavers/120925fighting-falcon4.jpg>



The DuPont Challenge Science Essay Competition, in its 25th year, is seeking entries. The competition is celebrating 25 years of inspiring students to excel and achieve in Science, Technology, Engineering, and Mathematics (STEM). The DuPont Challenge gives students the opportunity to write a 700-1,000-word essay discussing a scientific discovery, theory, event, or technological application that has captured their interest. The range of possible essay topics is as broad as science itself. Essays are judged based on ideas and content, mechanics and conventions, organization, style and creativity, and originality. "Advances in science are critical to the success of DuPont and the nation as a whole," said Ellen Kullman, DuPont chair and CEO. "We believe that STEM education strengthens our ability to meet an ever-increasing need to inspire students of today to be the scientists, explorers, and inventors of tomorrow," said Kullman.

All students in grades 7-12 across the United States and Canada may submit their essay entries until January 31, 2011. Essays are evaluated in two divisions: Junior Division (grades 7, 8, and 9) and Senior Division (grades 10, 11, and 12). The DuPont Challenge has more than \$75,000 in prizes and awards. The competition attracted more than 10,000 entries in 2010 and since its inception more than 150,000 entries have been received. More details are at [www.thechallenge.dupont.com](http://www.thechallenge.dupont.com). Triangle Coalition member, the **DuPont Office of Education** works with educators, university faculty, the business community, and local DuPont sites to prepare today's children for tomorrow's world. DuPont's goal is to ensure that the next generation of citizens has a working knowledge of the unique method of science and a reasoned understanding of science as a domain of human knowledge.

## Harness the Power of Wind



National Geographic Interactive Website...Harness the Power of wind

<http://environment.nationalgeographic.com/environment/global-warming/wind-power-interactive/>



Engineering Essay Contest for girls in grades 3-12:  
<http://www.engineergirl.org/?id=13161>

**Tiles for Teachers** NASA is offering space shuttle tiles to schools. Perhaps you'd like to have one for your classroom? You'd better act quickly because a limited number are available on a first-come, first-served basis. So, why are these tiles so "cool"? Imagine that your school buses experience an extreme cold front followed by a heat wave, followed by another extreme cold front, followed by ... Well, you get the point. What would be necessary to protect the students inside the buses when the temperature fluctuates from minus 200 F to plus 200 F every 90 minutes? How could you handle an occasional outside temperature of 1000 F? NASA scientists addressed this question over 50 years ago. The space shuttle has made space exploration history over the past 30 years by regularly traveling through such extreme temperature fluctuations. Scientists and engineers collaborated to develop unique materials to withstand extreme temperatures. This led to the development of five space shuttles with their unique "skin" of shuttle tiles. You or your students may have witnessed the more memorable launches. Perhaps you remember the first flight. Did you watch the flights that carried the Hubble Space Telescope into space or the flights to repair the telescope? Did you see any of the space shuttle dockings with the Russian Mir space station? Surely you witnessed one or several space shuttle launches to build or resupply the International Space Station? One hundred and thirty-three launches in 30 years have made space travel pretty routine. Have you gone outside at night and seen a space shuttle streak across the sky while attached to the space station? The space shuttles and their shuttle tiles have contributed immeasurably in making America a world leader in routine human spaceflight. NASA is looking for ways to preserve this great history and inspire the next generation of space explorers, scientists and engineers. On Dec. 1, 2010, your school or university can sign up and request a space shuttle thermal protective tile. Remember, the tiles are available on a first-come, first-served, one-per-institution basis. Educators have an opportunity to share some technology and a piece of history with their students. Perhaps students will be inspired to hone their

science, technology, engineering, or mathematics skills and seek careers in deep space exploration to Mars or beyond. Schools may request a tile at <http://gsaccess.gov/NASAWel.htm>. Click on the tile icon to log on to the request page. A login ID and password may be obtained by registering on the link provided. A Department of Education statistics tracking number (NCES for schools or IPEDS for universities) is needed to register; hyperlinks are available to the sites to find your institution's tracking number. Because the tiles are government property, a transfer protocol is observed (signatures and routing are done electronically). Recipients will be responsible for a shipping and handling fee of \$23.40, which is accommodated by the shipping company through a secure website. Additional information on tiles is available at the website as well as recommendations for curriculum and science lab projects. While you are at the website, you also can view and request other artifacts that are offered periodically. Directions for requesting artifacts are available on the website home page or via the link: [http://gsaccess.gov/htm/nasa/userguide/NASA\\_SSPA\\_Pamphlet.pdf](http://gsaccess.gov/htm/nasa/userguide/NASA_SSPA_Pamphlet.pdf). For more information about the shuttle artifact donation program, read the feature article "Hands-on History" at <http://www.nasa.gov/audience/foreducators/hands-on-history.html>.

Questions about this program should be directed to Jerry Phillips at [Jerome.Phillips@nasa.gov](mailto:Jerome.Phillips@nasa.gov).



**National Geographic Education Programs (NGEP) and Lindblad Expeditions are pleased to announce the 2011 Grosvenor Teacher Fellow program. This professional development opportunity, named in honor of National Geographic Society Chairman Gil Grosvenor, will give current K-12 classroom teachers and informal educators from the 50 U.S. states, Canada and Puerto Rico the opportunity to extend Grosvenor's legacy of excellence in geographic education. Selected educators will travel aboard the *National Geographic Explorer's* Land of the Ice Bears trip in June or July, 2011 to Arctic Svalbard. Through this program, hard-working educators will be recognized for their commitment to geographic education and given a professional development opportunity to be actively engaged in finding new ways to bring geographic awareness and ocean stewardship to their classrooms or informal learning environments through a field-based experience. See [www.expeditions.com/teachers](http://www.expeditions.com/teachers) for more details and a link to the online application. Application deadline is January 15, 2011.**

**Questions? Contact Amy Cadge, Lindblad Expeditions, at [teachers@expeditions](mailto:teachers@expeditions.com).**

## 2011 Albert Einstein Distinguished Educator

**Fellowship** Applications are currently available for the 2011 Albert Einstein Distinguished Educator Fellowship Program. This program is open to current public or private elementary and secondary mathematics, technology and science classroom teachers with demonstrated excellence in teaching. Applications are due **Jan. 4, 2011**. Selected teachers spend a school year in Washington, D.C., sharing their expertise with policy makers. Einstein Fellows may serve with one of several government agency sponsors such as the Department of Energy, NASA and the National Science Foundation. Applicants must be U.S. citizens and be currently employed full-time in a public or private elementary or secondary school or school district. Applicants must have been teaching full-time in a public or private elementary or secondary school for at least five of the last seven years.

For more information about this opportunity and to apply online, visit <http://www.trianglecoalition.org/fellows/einapp.htm>.

Inquiries about the Albert Einstein Distinguished Educator Fellowship Program should be directed to Program Manager Kathryn Culbertson at [culbertsonk@triangle-coalition.org](mailto:culbertsonk@triangle-coalition.org).



## Triangle Coalition for Science and Technology Education

Collaborating For Better Education

[ABOUT THE COALITION](#)   [OUR MEMBERS](#)   [HOW TO JOIN](#)   [MEMBERS ONLY](#)

- ▶ TCEB
- ▶ News Updates
- ▶ Einstein Fellows

### Einstein Fellows

[Current Fellows](#) - [Past Fellows](#) - [Application](#) - [FAQ](#)  
[Activities](#) - [Photo Gallery](#) - [Tributes](#) - [History](#)

**NASA Education Materials Featured on the [Howtosmile.org](http://Howtosmile.org) Website** NASA educational materials are available on the new [Howtosmile.org](http://Howtosmile.org) website. Launched by the University of California, Berkeley's Lawrence Hall of Science, the [Howtosmile.org](http://Howtosmile.org) website is an online collection of thousands of hands-on interactive science and math activities dedicated to making learning exciting and engaging for everyone. All activities at [www.howtosmile.org](http://www.howtosmile.org) are freely accessible and never require a registration or subscription. [Howtosmile.org](http://Howtosmile.org) brings together a consortium of science museums across the country to empower educators working with school-aged children in science, mathematics, engineering and technology. The website provides a digital infrastructure to allow informal science institutions to broaden their reach to informal educators across the U.S. [Howtosmile.org](http://Howtosmile.org) spotlights hands-on and interactive activities, both physical and virtual, that involve doing and learning. Activities take many forms, from downloadable lesson plans to field trip activities, how-to videos and online interactive games. [Howtosmile.org](http://Howtosmile.org) is funded by the National Science Foundation as part of the National Science Digital Library. The website is a joint project of UC Berkeley's Lawrence Hall of Science, the Exploratorium, the New York Hall of Science, Science Museum of Minnesota, Children's Museum of Houston, and the Association of Science-Technology Centers. Visit the new website at <http://howtosmile.org/>. To find NASA materials on the website, do a keyword search for NASA.

Questions about the [Howtosmile.org](http://Howtosmile.org) site should be directed to Sherry Hsi at [SherryH@berkeley.edu](mailto:SherryH@berkeley.edu).

## Lesson Ideas

# *Exploding Can of Dust*

### Materials:



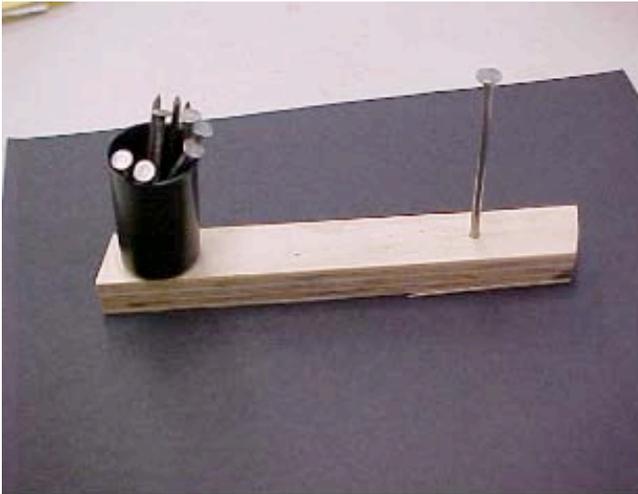
### Procedure:

1. With a spoon, add 1 teaspoon of lycopodium powder to the funnel.
2. Place the candle in the can.
3. Using tongs to hold the match, light the candle.  
**Caution -- Lycopodium powder is highly combustible when dispersed in air. Warn members of the audience that an explosion will occur. Keep the audience at least 6 feet away from the can when doing the demonstration.**
4. Place the lid on the can firmly.
5. Go to the end of the plastic hose (This places you several feet away from the can) and blow into it. An explosion accompanied by flame, will blow the lid high into the air.

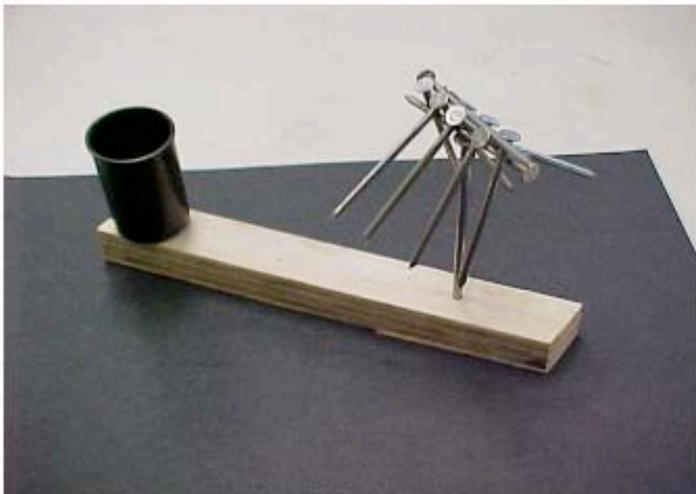
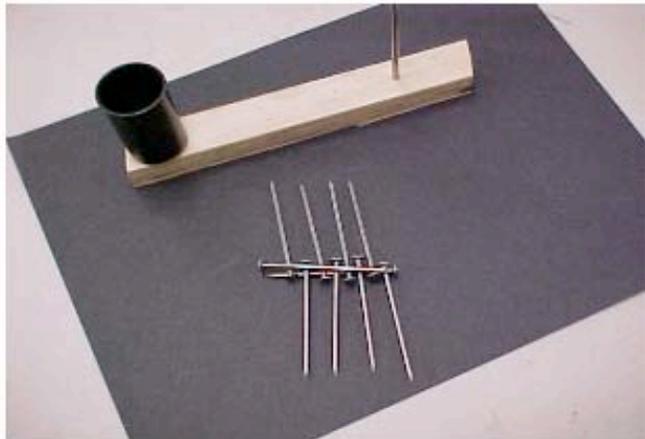
### Explanation:

Dust explosions in flour mills, coal mines, grain elevators, and other environments occur when finely divided powder dispersed throughout a room becomes ignited. The explosion may be initiated by a spark, an open flame, friction, or other energy sources. A dust explosion is an extreme example of the effect of surface area on the rate of a reaction. Dust has a large amount of surface area because it is so finely divided. Since there is an increase in surface area, there is more contact for a reaction to occur with the oxygen in air, increasing the rate of the reaction.

In this demonstration, the rate of combustion of the lycopodium powder increases so much that an explosion results blowing the lid off the can and sending flames above the rim. It is actually the reproductive spores of a fern-like plant called club moss. This powder is used by magicians and sold under the name of Dragon's Breath.



Ask the students to stack as many nails as possible on the head of the upright nail without any of them touching the ground.



# POTATO CREATURES

**Goal:** Identify how Darwin's theory of natural selection can affect the survival of a species.

**Grade Level:** 3rd- 6th.

Having an older class (4th-6th) camouflage the potato with glue, tape, etc and then have the younger students(K-2nd) find them makes this activity lively.

**Materials:**

- Small to medium potato for each student
- Orange tempera paint and brushes
- Naturally found materials and glue

**Procedure:**

1. Paint every potato bright orange.
2. Have each student camouflage their potato with naturally found materials from the playground or wherever you plan to conduct this activity.
3. Have the students place their camouflaged potato creature anywhere in the chosen environment. They must only place the potato creature. They cannot hide it in or under something.
4. Invite another class to try to find the potato creatures. Allow about 15 minutes for this activity. This group of kids will be the predators.
5. Be certain that all the found potato creatures are returned to you. Offer the successful predators some kind of reward for their success.
6. Have your students find all the surviving potato creatures. Be sure to keep them separate from the ones found by the younger students.
7. Examine and discuss the differences and similarities of the surviving potato creatures to those that the predators found.
8. Discuss what the future generations of potato creatures will look like and why.

**Extended Activities:**

1. Make a display of your results for the hallway.
2. Design a bulletin board that illustrates how various species have changed over time.



NATIONAL AERONAUTICS  
AND SPACE ADMINISTRATION



Partner Resources

The latest NASA Space Place column is now available. You can find both the article and its image on the "Partner Resources" web page at

<http://spaceplace.jpl.nasa.gov/partners/>

**Be sure to sign up for the  
MSTA E-blast**

## Teacher Award Opportunities

For information on awards, visit [nsta.org](http://nsta.org)

### NSTA Awards

AWARD	WHO CAN APPLY	BRIEF DESCRIPTION
Robert H. Carleton Award–Dow	NSTA member	\$5000/citation/all expense paid trip
Ciba Middle/HS Teaching Awards	middle/high school science teachers	\$2000 prize/\$500 expenses
Ciba Middle/HS Principal Awards	middle/high school principals	\$2000 prize/\$500 expenses
DCAT Making a Difference Award	grades 6-12 science teachers	\$2500 prize to school/flight & 2 nights-principal and teacher
Delta Ed/Frey-Neo/CPO Science Award	preK-12 science teachers	\$1500 prize/\$500 expenses
Distinguished Informal Science Award	NSTA member	citation/3 nights hotel/\$500
Distinguished Service to Science Education Award	NSTA member	citation/3 nights hotel/\$500
Distinguished Teaching Award	NSTA member	citation/3 nights hotel/\$500
Faraday Science Communicator Award	not a science teacher/ but an individual or organization which promotes science	\$2500 expenses
Fellow Award	NSTA member	citation & pin
Legacy Award	NSTA member	\$500 expenses-family member/ 2 nights lodging
Maitland P. Simmons-Memorial Award for New Teachers	NSTA member	\$1000 expenses/certificate
Wendell G. Mohling Outstanding Aerospace Educator Award	K-12 science teachers	\$3000 prize/\$2000 expenses
SeaWorld/Busch Gardens Environmental Educator of the Year	K-12 science teachers	\$5000/all expense paid trip Deadline: November 28
Shell Oil Company	K-12 science teachers	\$10,000 prize/all expense paid trip/ finalists all expense paid trip
Sylvia Shugrue Award	elementary science teachers	\$1000 prize/\$500 expenses/citation
Vernier Technology Awards	K-12 science teachers	\$1000 prize/\$1000 products/\$1000 expenses
Zula International Awards	preK-2 science teachers with memberships in either NSTA, CESI, NAEYP, or NHTA	\$400 prize/\$1000 expenses

All award deadlines are November 30, except for Shell Oil Company which is October 15 and SeaWorld/Busch Gardens which is November 28.



## Professional Development Institute

San Francisco, California

Wednesday, March 9, 2011



The National Science Education Association (NSELA) again presents a premier Professional Development Institute for science leaders, practitioners, and researchers. The Institute focuses on the best practices in professional development for science education reform and provides the context for collaboration among the nation's top science education leaders, practitioners, and researchers.

The cost of the institute includes registration, materials, breakfast, lunch, and breaks.

Early Bird Registration (until Feb 1)	Member \$195	Non-Member \$240--includes 1 yr. membership
Regular Registration (Feb. 2- Mar 1)	Member \$220	Non-Member \$265—includes 1 yr. membership
On-site Registration	Member \$230	Non-Member \$275—includes 1 yr. membership

### All Day Sessions

#### Session 1

*Developing Science Education Leadership for Sustainability*—Susan Sprague, retired Director of Science and Social Sciences for Mesa Public Schools in Arizona, and Jo Anne Vasquez from Helios Educational Foundation/ AZ Transition Years Teacher and Curriculum Initiative

#### Session 2

*An Organic Approach to Professional Development for Science Leaders*—Thomas Peters from South Carolina Coalition for Mathematics & Science, Sears House at Clemson University and Terrie R. Dew from S<sup>2</sup>MART Centers, SC Anderson Oconee Pickens Greenville Regional S<sup>2</sup>MART Center, Sears House at Clemson University

### AM Sessions

#### Session 3

*Reviewing and Using Selected Resources of the National Academy of Sciences*— Thomas E. Keller and Michael Feder from the National Research Council Board on Science Education and Brett Moulding from Utah Partnership for Effective Science Teaching and Learning

#### Session 4

*Using Moderation as a Professional Development Strategy to Improve Grading Practices and Enhance Communication of Student Achievement*— John Howarth and Dr. Barbara Nagle from Science Education for Public Understanding program (SEPUP), Lawrence Hall of Science, University of California-Berkeley

#### Session 5

*Integrating Inquiry Science and English Language Development*— Fred Stein and Lynn Rankin from the Exploratorium Institute for Inquiry

#### Session 6

*Designing Professional Development to Deepen Teachers' Science Content Knowledge: Learning from the Field* – Iris R. Weiss and Joan D. Pasley from Horizon Research, Inc.

### PM Sessions

#### Session 7

*Understanding Weather and Climate, a 2061 Approach*— Ted Willard from AAAS Project 2061

#### Session 8

*Understanding Science for Teaching: A Professional Development Approach to Deepening Teachers' Understanding of Science Content and Literacy in the Context of Classroom Practice*— Kirsten Daehler and Jennifer Folsom from WestEd

#### Session 9

*Increasing Engagement & Achievement in Science: A New Perspective on the Role of the Language Arts in Science Instruction*— Arthur Beauchamp from the Sacramento Area Science Project

#### Session 10—

*Transition into the 21st Century: Seamlessly Blend Content, Inquiry, and Digital Media*—Carolyn Goode and Carolyn Jacobs from WGBH Teachers' Domain

For more detailed description of session and to register visit our website: [www.nsela.org](http://www.nsela.org)



Join NSTA and enjoy these benefits:

With more than 200 products and services available, membership in NSTA is one of the best professional development investments you can make. As an NSTA member, you will be part of a dynamic group of more than 55,000 dedicated science teachers, science supervisors, administrators, scientists, business and industry representatives, and others involved in and committed to science education and working toward the same goal—to promote excellence and innovations in science teaching and learning for all!

Go to  
[nsta.org](http://nsta.org)

# Nomination for MSTA Recognition Awards

If you know of a science teacher, university person, administrator or organization in Montana who deserves recognition for contributing to science education in Montana and beyond, please consider nominating them for an MSTA Award in one of the following areas:

Elementary	Earth Science	Chemistry
University member	Middle School Science	Biology
Distinguished Service	Physics	Administrator
Organization or Group		

Criteria for selection is based in part, but not limited to, the following: longevity or service, contribution to topic area, participation in MSTA and/or NSTA, presentation of workshops, improvement of fellow teachers and community service.

## Nomination Form

Name \_\_\_\_\_ Award Area \_\_\_\_\_

Address \_\_\_\_\_

Current Position \_\_\_\_\_

Name and address of the person making the nomination:

---

Email address: \_\_\_\_\_

Attach a 500 word or less statement of why you are making the nomination. This statement may include the nominee's resume, educational background, teaching positions, awards and honors, leadership positions and professional activities.

**Nominations may be emailed.**

Send to

**Shirley Greene  
3017 Montclair Dr**

**Billings, MT 59102-4452**

# Mark Your Calendars

Leadership Conference January 28 & 29, Bozeman

NSTA National Conference: March 11-13, San Francisco



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### MSTA Regions

