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ISTS Newsletter

Iowa Academy of Science

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# ISTS E-Newsletter, September 15, 2007

Iowa Academy of Science

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# Iowa Science Teachers Section Iowa Academy of Science

September 15, 2007

Nadine Weirather, Editor

## Contents of the ISTS E-Newsletter:

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- Announcements, Opportunities, News
- Your ISTS Leadership Team

*Editor's Note: In constant attempts to strengthen our organization, your leadership team has been revising the ISTS Guidelines. In this month's newsletter you will notice changes in titles from 'president' to 'chair,' and from 'section breakfasts' to 'interest area breakfasts.' Please bear with us as we attempt to make titles less confusing in the Iowa Science Teachers Section of the IAS.*

## A Message From Your ISTS Chair, Traci Maxted:

Hello again from ISTS!

Please take a few minutes to register for the ISTS Fall Conference "Opportunities for Learning" and make your plans to attend. This is such a great chance to network with other science teachers as well as a time to renew, invigorate, and step up for a new year in teaching. By now the adrenaline rush of starting a new school year is starting to wane. Take time to "sharpen the saw" and find new ideas.

You will get to hear a world-class speaker, Andrew Chaikin, talking about going to Mars. Your students could be among those first adventurers. He will also be available for a book signing, and is one of our featured session speakers.

This year we have a greatly expanded space for our exhibit hall. Besides finding new ideas and activities for your classroom, you can talk with vendors about lab equipment and texts, student and teacher learning opportunities and resources available around the state.

Another new opportunity is the Wednesday evening workshops. These are sessions that take more time to explore and possibly even take you on a field trip. The workshops take you from the Devonian to the future. Find out more about them: <http://ists.pls.uni.edu/fall-conference/index.html>

I would like to personally invite each of you to the President's Reception on Wednesday. It is after the evening sessions and open to any conference participant. This is a chance to relax and meet on an informal basis. Refreshments are provided, of course!

Hope to see you there, Traci

## **A Memo from the ISTS Fall Conference Chair, Gale Vermeulen:**

As the 2007 ISTS Fall Conference chair, I am encouraging you to avail yourself of the many and varied **Opportunities for Learning** to be experienced at the **2007 Iowa Science Teachers Fall Conference** Thursday, October 18 at the Crowne Plaza Hotel in Cedar Rapids, Iowa. Please allow the Iowa Science Teachers Section of the Iowa Academy of Science the opportunity to serve you as we endeavor to improve science education for all. The ISTS Conference Committee has worked many hours to produce these learning opportunities, and I am extremely appreciative of their dedication.

Our Conference actually begins with a bonus, several fascinating **Pre-conference Workshops** to choose from (a rock quarry tour, a fossil hunt, aerodynamics of flight exploration, practical applications of a Geographic Information Systems program, walking in a prairie and/or enjoying an IMAX theatre presentation) and the camaraderie at the **President's Reception**, all of which are held the evening before the conference begins. Please plan to attend your selected workshop and the reception, both of which are "day before the conference" activities. By

participating Wednesday evening, you'll actually be able to experience a two-day conference!

The actual day of the conference is packed with learning opportunities which include educational [Interest Area Breakfast Speakers](#); (chemistry, biology, earth science, and elementary), dynamic [Featured Speakers](#) including John Dunkhase from the University of Iowa, Mark Anderson, a Project Archaeologist for the Highway Archaeology Program, and Andrew Chaikin, science journalist, author, and internationally renowned authority on space exploration; scores of stimulating [Presentations](#) from dedicated science professionals; the phenomenal [Luncheon Speaker](#), Andrew Chaikin; an exciting [Book Signing](#) by our keynote speaker; and informative [Commercial Exhibitors](#) showcasing their innovative aids to learning.

I hope to see you at this professional development learning opportunity that many people have worked many hours to prepare for your enjoyment and inspiration.

-- Gale Vermeulen, 2007 Fall Conference Chair

### **Message from your Vice Chair, Morgan Masters:**

I am currently in my 36<sup>th</sup> year of teaching science at the secondary level and enjoying every minute of it. I began teaching in Chariton, Iowa and after 26 years moved to Ankeny, Iowa where I taught 8<sup>th</sup> and 9<sup>th</sup> grade students at Northview Middle School.

I then took the opportunity to work as a science test development specialist with Data Recognition Corporation in the Twin Cities area. There I learned a great deal more about assessment and worked primarily with the Department of Education in the states of Alabama, Alaska, Louisiana and Pennsylvania. After three years of working with educators across the country I found I missed the classroom, teaching science and I guess Iowa. In 2006-7 I taught life science in the S.E. Polk district, then the opportunity arose to return to Ankeny and again teach earth science at Northview Middle School. I even got my old room back. Life is good!

I am looking forward to working with the talented science educators across Iowa. Please introduce yourself wherever our paths may cross. I do know one of the most valuable science experiences you can have is the sharing of ideas and lessons with your colleagues. Hope to see you at this year's Fall Conference in Cedar Rapids.

-- Morgan Masters, Vice Chair ISTS

**Fall Conference News - A MUST Read!!**  
**Come to a Breakfast, Meet Friends and Learn!**

**Chemistry Breakfast – hosted  
by Sara Coleman, Norwalk**

Join Chemistry Educators for  
Breakfast!!

Start the conference day off right. Meet with fellow chemical educators for breakfast and walk away with: demonstrations with new twists, inquiry activity ideas, a report on an international professional development opportunity of a lifetime for next summer, and of course good old fashioned shop talk about chemistry!

Sara Coleman of Norwalk High School will talk about her experiences last summer at the Davidson Science Education Institute held at the Chaim Weitzmann Science Institute in Rehovot, Israel. Door Prizes from Flinn Scientific and others!!

**Elementary Breakfast –  
hosted by Carol Cassells,  
Cedar Rapids**

Carol, the Cedar Rapids school science facilitator, has graciously agreed to host the Elementary School Interest Area Breakfast this year while Lynne Campbell is on sabbatical in D.C.

Come join your peers to share ideas, hear Carol's presentation, and receive door prizes.

**Earth Science Breakfast –  
hosted by De Anna Tibben,  
Ames HS**

Jo Ann Fender Hinz, presenter

Jo Hinz is a retired 7-12 science teacher. She has 24 years experience in middle and high school classrooms. *Overland trail from Imogene, Iowa through the Loess Hills to DeSoto Bend National Wildlife Refuge: A survey of the glacial landforms of Southwest Iowa* was developed as part of an 8<sup>th</sup> grade student trip to DeSoto Bend National Wildlife Refuge. Mrs. Hinz refined this study as part of her Masters Program at UNI in 1988. Her interests include gardening, rock & fossil collecting, and antiquing. Jo and her husband of 41 years, Harold, have three daughters, all of whom are classroom teachers.

The presentation is a self-guided auto tour through the Loess Hills in Southwest Iowa. During the breakfast session, "travel" through examples of glacial outwash (Wabounsie Road); explore the Southern Rolling Hills up through the Western Loess Hills; see Pennsylvanian bedrock and Loess soil up-close; uncover both Woodland and Dryland snails in the fossil records near Bethlehem; view the rock line and ash fall of the Loess Quarry near Council Bluffs; lookout from Lewis and Clark Overlook north of Council Bluffs; travel the meanders of the Missouri River Valley; witness the human impact upon the Loess Hills; and end with the gentle, hummocky topography of this beautiful region.

**Biology Breakfast – hosted by  
Alicia Schiller, Central Lee**

"Bridging Biology and Space  
Science---It's a blast"

I would like to encourage Biology Teachers, as well as all other science teachers to sign up for and come and participate in a breakfast discussion on merging Biology and Space Science in your professional development. Teachers can share some of their classroom-integrated lessons using Biology and Space Science, as well as teacher centered programs and opportunities in this

field of study.

Jay Staker will be sharing about the Iowa Space Grant Consortium Workshops that are available each school year as well as how space science and be tied to the Biology classroom. So, start the morning off with a timely topic as well as some good science discussion, it will be a BLAST.

**Join a group for  
breakfast!**

**“Ten Top Reasons” your Administrator should let  
you go to the Conference.**

**- Tom Ervin, 2007**

- 10.) We are looking at new texts and at the conference there will be 8 publishers.
- 9.) We are looking at remodeling our school's Science Labs and at the conference there will be 5 lab equipment vendors.
- 8.) We are placing emphasis on Professional Development and at this conference there will be 68 presenters, 10 vendor workshops, and 6 pre-conference workshops.
- 7.) I could win a free trip to Washington, D.C.
- 6.) We could attend the conference here in Iowa, and save the money required to attend the National Science Teachers Conference in Detroit this Fall.
- 5.) I could take our Honors Students along, for a reduced fee.
- 4.) I've been a member for \_\_\_ years, and would like very much to attend.
- 3.) It's only in Cedar Rapids, so we could do it in just one day.

2.) The whole Science Department could carpool in my car.

1.) Since you are such an insightful administrator, I'll submit your name for the FOS Award.

## **15 Reasons to Attend the ISTS Fall Conference!**

-Traci Maxted, reprinted from 2006 – still appropriate!

15

**Door prizes!**

(Previously they included a TV and a sheep's brain. Can't get better than that!)

14

**Great Lunch included!**

13

**Professional Development without statistics**

12

**Professional Development with topics YOU get to choose.**

11

**Find other professional development opportunities**

10

**New ideas you can use in your classroom.**

9

**New activities you can use in your classroom**

8

**New resources you can use for your classroom. Find the latest technology.**

7

**Lots of other science teachers: Contacts! Networking!**

6

**Find out what's happening around Iowa and the U.S. in the field of science teaching.**

5

**Opportunity to share your frustrations and ask for help from some of the state's best science teachers!**

4

**Opportunity to share your successes and ideas!**

3

**President's reception**

2

**Keynote speaker: "Mars, Here We Come" by Andrew Chaiken, Author of *A Man in the Moon*.**

1

**A really nice "artifact" to put in your portfolio.**

## Announcements

- ATTEND THE ISTS FALL CONFERENCE!!!

Make plans now to attend the ISTS Fall Conference on October 18, 2007. In the words of NSTA, you will:

- be among the first to learn about, and use, upcoming classroom tools directly from the companies themselves
- learn the latest science teaching trends
- fulfill professional development requirements
- share ideas with other science teaching professionals
- meet experts in the various science fields

- CONGRATULATIONS TO LYNNE CAMPBELL

*Lynne is unable to assist as our Elementary Interest Area Breakfast Chair because she is currently serving an Einstein Fellowship in Washington, D.C. Lynne is working in the House of Representative's Education and Leadership Committee, working on education policy. She has taken a ten-month leave of absence from her job at Woodward-Granger. We look forward to hearing about her experiences!!*

- Sloan Career Cornerstone Center Newsletter

The Sloan Career Cornerstone Center publishes a free newsletter to provide information about career paths in science, technology, engineering, mathematics, computing, and medicine. It features profiles of different degree fields, salary profiles, and timely information about careers.

To subscribe to this nice newsletter, email [ccnews@careercornerstone.org](mailto:ccnews@careercornerstone.org) or check out <http://www.careercornerstone.org/>.

- PhUn Week, Physiology Understanding Week

Attention all K-12 science and physical education teachers in the greater Des Moines Region:



Physiology Understanding Week is the American Physiological Society's member-based annual outreach program to K-12 school classrooms each November. *PhUn Week* has been established to increase student awareness of physiology in their lives. *PhUn Week* also aims to enhance student interest in physiology as a possible career. The theme for this year's *PhUn Week* is the physiology of exercise. Each *PhUn Week* research team is hosted by a teacher (either a science teacher or a physical education teacher) and visits a classroom or assembly to engage students in interactive, hands-on physiology activities. Through this real-life, face-to-face encounter with practicing biomedical researchers, students learn about how their bodies function and how scientific discoveries are made. The dates for this year's *PhUn Week* are November 5-9, 2007

The goals of *PhUn Week* are to:

- Increase student interest in and understanding of physiology in their lives.
- Increase teacher recognition of physiology in their standards-based science curriculum.
- Introduce students to physiology as a possible career.
- Involve more physiologists in outreach to the students and teachers in their communities.

To learn more about *PhUnWeek2007* visit: <http://www.phunweek.org/> For more details on how you can bring *PhUn Week* to YOUR school contact Jackie Brittingham at [jackie.brittingham@simpson.edu](mailto:jackie.brittingham@simpson.edu) , call 515-961-1818, or look for the *PhUn Week* presentation at the ISTS Meeting in October.

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## ● ***Drugs, Brains, and Behavior - The Science of Addiction***

The National Institute on Drug Abuse (NIDA), part of the National Institutes of Health in the U.S. Department of Health and Human Services, is pleased to feature ***Drugs, Brains, and Behavior - The Science of Addiction***.

This 30-page full-color booklet, available **FREE OF CHARGE**, uses plain language to explain how science has revolutionized the understanding of drug addiction as a brain disease that affects behavior. NIDA hopes this new publication will help reduce the stigma associated with addictive disorders.

Because of its breadth and clarity, this **FREE** booklet will be useful for a wide variety of audiences, including educators, school health professionals, students, psychiatric caregivers, treatment professionals, and criminal justice workers.

To order **FREE** copies of ***Drugs, Brains, and Behavior - The Science of Addiction***, visit the [NIDA Web Site](#). You may also call the National Clearinghouse for Alcohol and Drug Information (NCADI) at (800) 729-6686, (800) 487-4889 (TDD), or (877) 767-8432 (Español).

To order this publication in bulk, please e-mail us at [nidanews@iqsolutions.com](mailto:nidanews@iqsolutions.com) with your full name, mailing address, and the number of copies you would like to receive.

## Join the Iowa Junior Academy of Science

The Iowa Junior Academy of Science provides resources and programs for 6th-12th grade science students and their teachers/parents. IJAS promotes individual and small group student research, awards, scholarships, and extra-curricular activities to broaden a student's science experiences. Two of the most popular IJAS programs are:

### **Starr Student Research Grants**

-Individual student members and students who attend IJAS Member schools are eligible to submit grant proposals requesting up to \$200 in funding toward the expenses of their science fair research.

### **Outstanding Science Student Awards**

-Every IJAS member high school selects one senior as the school's most Outstanding Science Student. This student is awarded a certificate and an engraved OSSA Medal.

School memberships are \$30.00 and individual student memberships are \$5.00.

Contact [iascience@uni.edu](mailto:iascience@uni.edu) for more information and to join!



Advertisement

## Opportunities

### ● [Info from the Iowa Space Grant Consortium...](#)

NASA and the International Technology Education Association, or ITEA, present the NASA Engineering Design Challenge: Lunar Plant Growth Chamber for the 2007-2008 school year. Elementary, middle and high school students design, build and evaluate lunar plant growth chambers -- while engaging in research- and standards-based learning experiences. Students participate in the engineering design process and learn how to conduct a scientific experiment.

Choose from three ways to participate in the challenge:

1. Design, Build and Evaluate a Chamber
2. Design and Evaluate a Chamber
3. Evaluate a Chamber

Educators who complete the STS-118 Design Challenge with their students can request cinnamon basil seeds that have flown in space on the STS-118 space shuttle mission. Participants will receive space-flown and Earth-based control seeds. Students may use the seeds to test the designs of the lunar plant growth

chambers. The seeds will be available on a limited basis.

Visit the link below to learn more about the challenge and to register to participate. <http://www.nasa.gov/education/plantchallenge>

----- NASA Education <http://www.nasa.gov/education>

Jay Staker, Associate Director of Education

Iowa Space Grant Consortium

515-294-8417, FAX: 515-294-4443

Email: [jstaker@iastate.edu](mailto:jstaker@iastate.edu), website: <http://www.ia.spacegrant.org>

## ● Prairie Workshops for Teachers and Naturalists

Learn how to help your students explore and improve Iowa's Prairies! This workshop is for primary through Community College teachers and naturalists.

Two groups: 1) Carroll, Iowa  
Nov. 9-11, 2007 & Mar. 7-8, 2008

2) Pleasant Hill, Iowa  
Jan. 18-20 & Apr. 4-5, 2008

2 graduate credits, materials, meals, housing for only \$180 - due to grants!! Details and registration can be found on eii's website: [www.uni.edu/ceee/eii](http://www.uni.edu/ceee/eii) or request a paper brochure at [bollwinkel@uni.edu](mailto:bollwinkel@uni.edu) or 319-273-2783.

## ● The ICEC Annual Winter Solstice

SAVE THE DATE:

The ICEC annual **Winter Solstice** will be held on Friday evening **January 25<sup>th</sup> through Sunday, January 27, 2008** at the **Camp Io-Dis-E-Ca** near Solon, IA.

Come join us as we “**Plug into Environmental Education**” with Keynote speakers **Chip Taylor from Monarch Watch** and **Rich Leopold, Director of the Iowa Department of Natural Resources**.

**Participant scholarships** are available. There will be 40 - \$45 scholarship available to the first 40 people who request them with their registration. There will be **15 college student stipends** to attend. The first 15 college students to sign up will only have to pay \$15.00 for the whole conference. College students may also be eligible for a one time one

year free membership to ICEC.

Need to fulfill your **credit requirements**? What better way to get those credits from attending this exciting conference while learning more about various aspects in environmental education. Look for sessions from Carl Kurtz, Claudia McGee, Dennis Schlict, and more. Field trips are scheduled to the McBride Raptor Center, Old Capital Museum, University of Iowa Museum of Natural History and others within driving distance.

Returning this year a **pre-workshop** to be held on Friday January 25, 2008, on **archery in the schools**, you do not need to attend the whole conference to participate in the pre-workshop. Know someone in your school who may be interested? Help us spread the word.

We hope to see you in January! For more details call Heather Niec, ICEC Administrative Coordinator at 319-848-7019 or email at [Adminicec@hotmail.com](mailto:Adminicec@hotmail.com).

- **[Global Debates through \*The People Speak\*](#)**

The People Speak is sponsoring a series of Global Debates for high school students. During ten day periods in October 2007 and March 2008, students across the globe will be organizing public debates in their high schools and coordinating a global vote on the debate topics. October's debate topic is on the best way to lower carbon emissions and March will focus on water rights – both serious issues facing the US and the world. Our website [www.thepeoplespeak.org](http://www.thepeoplespeak.org) provides even more information, including how to register schools to participate in the Global Debates. If you have any questions, please email Victoria Baxter, Director of The People Speak ([vbaxter@unfoundation.org](mailto:vbaxter@unfoundation.org)).

- **Consultant Opportunity**

I am the Product Manager for ScienceCompliance, a new science resource for K-8 schools provided by AccuWeather Education. We are currently searching for consultants to write and review lesson plans aligned to national and state K-8 science standards, and was wondering if any of your staff or members would be interested. The work would require approximately 10-35 hours per week and the average hourly pay is \$25/hour.

Our lesson plans follow a designated structure including lesson description,

objectives, background information, classroom activities, duration, description of necessary graphics, applicable worksheets, and a short quiz. Content topics are comprehensive in scope, covering such areas as Astronomy, Biology, Earth Science, Forces & Energy, and others.

Required Skills & Experience:

- \* Science teaching experience
- \* Familiarity with K-8 educational standards
- \* Excellent writing ability
- \* Ability to write or edit content under strict deadlines
- \* Proficiency using the Internet
- \* Background in curriculum development is preferred

Please respond to [Toczek@AccuWeather.com](mailto:Toczek@AccuWeather.com).

Mary Beth Toczek, Product Manager, AccuWeather, Inc., Education Division, <http://education.accuweather.com>

## ● NASA EXPLORER news from GLOBE

Each year, NASA selects up to 50 school teams to participate in the three-year NASA Explorer Schools project. The following Web site will provide you with detailed information regarding this opportunity and we would like to encourage you to apply: <http://explorerschools.nasa.gov/portal/site/nes/>

Please select the tab for "Project Application" and the Web site will provide you information about the projects, duration of the projects, support provided in travel and training, a calendar with the time-line of the application process as well as links for the application forms.

After a year of implementing classroom and school activities, NES educators are invited to attend content-specific workshops during the summer at NASA centers. NASA centers offer workshops based on the center's area of scientific concentration. Educators can select from any of the offerings based on the needs of the school's instructional program, the team's strategic plan and the educational background of the educator. Some examples of past summer content workshops are listed below.

\*Technology Immersion\*: Participants attend the Technology Immersion workshop and become an active participant in the Vision for Exploration. They investigate the potential instructional benefits and limitations of PDAs,

probeware, robotics, videoconferencing, video editing and podcasting while integrating these technologies into NASA-developed content.

**\*Astrobiology\*:**

Through a study of life in extreme environments, participants learn from NASA scientists who are working to explore the relationship between the characteristics of life forms and the environmental conditions in which they exist. This work will help determine the potential for life elsewhere in the solar system, and beyond. In this workshop, educators discover how NASA works to better our understanding of /Life: What is it? Where is it? How do we find it? How do we recognize it?/ A variety of educational activities are presented that students can use to explore the characteristics of living things, the conditions needed for life, and the potential for life elsewhere in the universe.

**\*Robotics Exploration and Education\*:**

This introductory workshop in robotics is a mix of practical robotics education materials and lessons, combined with a look at how robotics is currently being used to explore the solar system. Participants see past, present and future robotics devices and testing areas, and interact with inventors and scientists. Robotics education is centered on readily available kits applied to planetary surface-type explorations. The workshop includes robotics design, construction, programming and control, simple machines, basic electronics, robotics challenges and competitions.

**\*Investigating Earth from Space\*:**

Participants in this unique workshop learn about Earth system science by interacting with NASA's world-class scientists and investigators who use information and data from Earth-viewing satellites in an attempt to understand Earth processes and trends. Educational activities that participants can use with their classes are provided for each of the Earth systems studied during the workshop.

To apply to become a NASA Explorer School, download and print the application worksheet and begin collecting information needed for completion of the online application. Go to the online application Web page and create a unique login and password. Once a login and password have been established, the online application may be completed in multiple sessions.

● **IGES 12th Annual Art Contest for Children in Grades 2-4**

Theme: "The Ocean: From Top to Bottom!"

Entries Due: Oct. 26, 2007

An art contest for grades 2-4 challenges students to explore the ocean from top to bottom and then draw a picture showing what they learned. This is the 12th

annual art contest held by the Institute for Global Environmental Strategies (IGES) in Arlington, Va. The contest supports national science education standards for grades K-4.

The winning artist will receive a \$250 savings bond, and his or her artwork will be printed as the 2007 IGES greeting card. Second- and third-place winners receive a \$100 and \$50 savings bond, respectively. Everyone who sends in an entry will receive a certificate of participation. Artwork will be judged by a panel including artists, scientists and IGES staff members.

New for 2007 Contest! -- Lockheed Martin Corporation is generously funding the development and printing of a 2008 calendar featuring the top 12 entries in this art contest. The students whose artwork is featured in this calendar will each receive copies of the calendar; their teachers will also receive calendars.

For more information, including contest rules and entry form, interesting ocean facts, lesson plans and activities, and a listing of recommended books and Web sites, please visit: <http://www.strategies.org/ArtContest>  
Located in Arlington, Va., IGES was established in 1994 and is a 501©3 nonprofit organization supported by public and private entities. IGES is a trusted leader in Earth and space science education, communication and outreach, and in fostering national and international cooperation in observing the Earth.

CONTACT Dan Stillman, Institute for Global Environmental Strategies  
(703) 312-7138 (Phone), (703) 312-8657 (FAX)  
Email: [dan\\_stillman@strategies.org](mailto:dan_stillman@strategies.org)

## **News**

- **75 Fewer Minutes for Elementary Science Per Week**

**-- A Result of NCLB Says CEP Report, reprinted from *NSTA Express***

The Center on Education Policy (CEP) released a survey that examines the amount of time spent during the school week on core academic subjects and how the allocation of time across subjects has changed since the 2001-2002 school year, when NCLB was enacted. The report finds that approximately 62% of school districts increased the amount of time spent in elementary schools on reading and language arts and/or math, while 44% of districts cut time on science, social studies, art and music, physical education, lunch, and/or recess. "According to the new survey, the average change in instructional time in elementary schools since the law's enactment has been 140 additional minutes per week for reading, 87 additional minutes per week for math, 76 fewer minutes per week for social studies, **75 fewer minutes for science** (emphasis added), 57 fewer minutes for art, and 40 fewer minutes for gym," writes *New York Times* reporter Sam Dillon.

The report is available online from the [CEP](#),



- **ActionBioscience**

ActionBioscience.org offers resources to enhance teaching in the biosciences:

- \* Peer-reviewed, easy-to-read articles on bioscience issues, which make excellent student reading material or content for case study activities
- \* Educator-written lessons to accompany many of the articles with handouts for middle school, high school, and/or college level students
- \* NSES correlation charts that match our articles and lessons to national standards, making lesson planning an easier process
- \* Spanish translations of select articles, useful for ESL students who need to improve their science language literacy skills

\* Our home page: <http://www.actionbioscience.org/>

\* Our lesson directory page: <http://www.actionbioscience.org/lessondirectory.html>

\* Our NSES correlation charts page:

<http://www.actionbioscience.org/educators/correlationcharts.html>

ActionBioscience.org is an education resource of the American Institute of Biological Sciences. Our site was chosen best biology site by Scientific American and is featured as a recommended resources on major science websites, such as Nova, PBS, the National Science Foundation, NSTA, NABT, and National Geographic.

Nathan Stenstrom, Editorial Assistant, American Institute of Biological Sciences

- **"Blue Marble" Periodic Chart**

This is an FYI for you. The Minerals Information Institute sent us a copy of their "Blue Marble" Periodic Chart, which is a "standard" periodic table on one side and one linked to the minerals that contain elements on the other. I left it out in our conference room for a few days and many of our staff commented favorably on it.

If you haven't seen it, check out: <http://www.mii.org/vinylposter1.html>

There's a "click here for detail" button on the lower left. Thought you might want to take a look. While they have a \$20 price tag on them, the letter that came with the sample they sent here says they are looking for ways to work with educational organizations to bundle larger and cheaper per chart options together, buy 100 and they are \$10 each, things like that.

Bob Libra, State Geologist, Iowa Department of Natural Resources



- **News from the Space Place**

**"Planet X-treme Weather"**

Few places on Earth have perfect weather. We complain about the heat, the cold, the hurricanes and tornadoes, the rain and snow, or the drought. But compared to other places in our solar system, even Earth's worst weather is wimpy! Visit the Space Place at <http://spaceplace.nasa.gov> for a whirlwind tour of weather throughout the solar system. Find out about the hottest, coldest, windiest, and just plain weirdest planets and moons in our neighborhood. Click on "Amazing Facts" and "Planet X-treme Weather" to begin your tour.

### **Chomping Rocks on Mars**

Someday astronauts may go to Mars. One of their science chores may be to continue the work being done now by rover robots studying Mars rocks. Scientists want to know what's in those rocks. They hold clues to the planet's mysterious past. To learn about the rocks, Mars astronauts will have to smash them and put the rock powder into an analyzer. The analyzer will detect what minerals are present.

But chopping those rocks into powder first will be a tough job. Whew!

But first, though, NASA is planning to send more robotic explorers to Mars. But how can robotic Mars landers or rovers break up rocks for an analyzer?

This is where NASA's special Planetary Instrument Definition and Development Program comes in. This program helped some NASA engineers to invent the needed Mars Rock Crusher. Only six inches tall, it can chew the hardest rocks into a powder.

The Mars Rock Crusher has two metal plates that work sort of like our jaws. One plate stays still, while the other plate moves. Rocks are dropped into the jaw between the two plates. As the movable plate moves in and out, rocks are crushed between the plates. The jaw opening is larger toward the top and smaller toward the bottom. So when larger rocks are crushed near the top, the pieces fall down into the narrower part of the jaw, where they are crushed again. This process repeats until the rock particles are small enough to fall through a slit where the two plates are closest.

Engineers have tested the Mars Rock Crusher with Earth rocks similar to those expected to be found on Mars. One kind of rock is hematite. The rusted iron in

hematite and other rocks help give Mars its nickname “The Red Planet.” Another kind of rock is magnetite, so-called because it is magnetic! Rocks made by volcanoes are called basalts. Some of the volcanoes on Mars may have produced basalts with a lot of a mineral called olivine. We call those olivine basalts, and the Rock Crusher chews them up nicely too.

For a fun and interesting classroom activity and more about technologies to investigate other planets, visit The Space Place web site at [http://spaceplace.nasa.gov/en/educators/QC\\_laser\\_spectrometer.pdf](http://spaceplace.nasa.gov/en/educators/QC_laser_spectrometer.pdf).

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### **Iowa Academy of Science Mission:**

- Promote scientific research and its dissemination
- Improve instruction in the sciences
- Promote public understanding of science
- Recognize excellence in science and science teaching.

Check out past issues of the ISTS newsletter at <http://ists.pls.uni.edu/newsletters/index.html>.

Your ISTS Leadership Team can be found at: <http://ists.pls.uni.edu/officers.html>.

(We are always looking for good people. Send an e-mail to [tmaxed@cr.k12.ia.us](mailto:tmaxed@cr.k12.ia.us) if you wish to be more involved.)

### **Invitation to improve/contribute to this newsletter**

How best can this newsletter serve you? Do you have something to contribute for the good of the ISTS membership? Zing a line at [nweirather@central-lee.k12.ia.us](mailto:nweirather@central-lee.k12.ia.us) or [tmaxed@crk12.ia.us](mailto:tmaxed@crk12.ia.us).