



## **Iowa Science Teaching Section**

## **Iowa Academy of Science**

**September 15, 2008**

Nadine Weirather, Editor

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### **A Message From the ISTS Chair, Morgan Masters:**

Iowa science educators have a great opportunity to attend one of the very best science conferences in the country. This year the conference is back in Des Moines at the Polk County Convention Complex, which makes it a little more centrally located for all Iowa science educators. The ISTS Fall conference committee has put together a great lineup of speakers and presentations on Wednesday evening and all day Thursday. Wednesday evening is going to be something very special with all of the activities and opportunities to share and learn located at the new Science Center of Iowa just a few blocks away from the convention complex and our hotel.

I recently read an article that stated that the one single thing that has the greatest impact on improving a science educator's skills and performance in the classroom is their attendance at a State, Regional or National science convention. Not only do you pick up new ideas from

**presenters but perhaps the greatest impact comes from talking to and sharing ideas with science colleagues. I encourage all of you to talk to your building principal and make every attempt to attend this year's conference in Des Moines.**

**Your Conference Chair, Traci Maxted has done a tremendous job putting together a great conference. Please meet us in Des Moines and share your best classroom experiences, successes and stories while enjoying one of the best conferences ever.**

**Morgan Masters, ISTS Chair 2008**

### **From the Fall Conference Chair, Traci Maxted:**

In this year that celebrates the 200<sup>th</sup> year of the birth of Charles Darwin, it seemed fitting to look at *Science: Our Past and Future*. Building on the groundwork of past scientists like Darwin, we teach the scientists of the future. This conference is for you – those teachers of science: past and future. You asked in surveys and we answered. This year the conference is in Des Moines, a central location. We've increased the Wednesday evening choice to make a two day conference for those needing that requirement. We've added new strands: differentiated learning, opportunities for teachers, and opportunities for students to the cores of biology, chemistry, earth science and physical science. This conference is built to meet the needs of Iowa's science teachers and we would like to encourage you to take advantage of this opportunity for teachers to get recharged and renewed. You will go home with new friends and new ideas you can use in your classroom.

I am really excited about the large number of great sounding presentations! I hope to see you there!

Traci Maxted, 2008 Conference Chair.

### **Message from your Vice Chair, De Anna Tibben:**

Hello!

The other night I was helping my 1<sup>st</sup> grader with her homework. The assignment was to find evidence that we are in the fall season. What better evidence than the ISTS Fall Conference "Past and Future" October 23, 2008!?! I bet my daughter's teacher didn't think that would show up on an assignment, but I bet she registered for it! You can, too, by going to <http://ists.pls.uni.edu/>. As you get back into your school schedule, I hope you take the time to register online for not only the Fall Conference, but also for the Wednesday night Open House at SCI (October 22<sup>nd</sup>). I always look forward to seeing "old" friends at the

Conference and catching up on what everyone does in their classrooms. What a recharge I get each year from being able to mingle with other teaching professionals in the exhibit hall and from attending the meaningful presentations! How about you? How do you keep up on the latest new ideas? How do you keep from getting stuck in a teaching rut? I encourage you to attend the ISTS Fall Conference and Wednesday night Open House this year. The Conference is back in Des Moines and promises to be one of the best ever!

See you in Des Moines!  
De Anna

## **Announcements**

- **Attend a Breakfast Meeting at the Fall Conference**

*Come join the fun! Sign up at <http://ists.pls.uni.edu/>.*

### **Earth Science: “Tornadoes – The Strongest Winds on Earth”**

A look at tornadoes and how they form, using fun videos

Moderator: Dr. William A. Gallus, Jr., Professor of Meteorology, ISU

### **Middle School: “Safety in the Middle School Class”**

Presenting the newest project in science safety

Come for breakfast, discussion, fun, and door prizes!

Moderator: Dr. Jack Gerlovich and Dr. Dennis McElroy

### **Chemistry: “Chemistry in the Culinary Arts”**

‘Teacher of the Year’ will discuss the connections between chemistry and culinary arts.

Moderator: Andy Mogle, Norwalk High School

### **Biology: “American Physiological Society and American Society of Cell Biology Updates”**

New programs, research and funding sources with stipends and updated inquiry-based resources

Moderator: Ernie Schiller

**Elementary School: *This breakfast is still being planned. Look at the website for updates.***



## • ISTS Science Soiree

Come and enjoy an extraordinary evening of SCientific fun with science teachers from across the state of Iowa. Please join us Wednesday, October 22 at the Science Center of Iowa to experience new and exciting developments in today's expanding field of science. SCI education staff and the entire facility will showcase upcoming school programming, SCI's fall traveling exhibit *ROBOTS: The Traveling Exhibition*, the state-of-the-art Star Theater, science theater presentations and the Blank IMAX Dome Theater. Enjoy a delectable array of hors d'oeuvres and refreshments as you explore SCI and network with science teachers from around the state. Plus, experience the big picture as SCI hosts traditional-length films in the Blank IMAX Dome Theater. This night promises to be a night of SCientific excitement and fun!

### **Highlights:**

- A great opportunity to interact with SCI educational staff and inquire about possible curriculum integration.
- First hand look at the new SCI Fall 2008 traveling exhibit – *ROBOTS: THE INTERACTIVE EXPERIENCE*.
- Key interactions will be highlighted for K-8 teachers and the fall traveling exhibit is a great curriculum tie and age appropriate exhibit for K – 8 students.
- Each guest will receive a voucher for an IMAX film to view the night of the event or at another time of their choice. The SCI School line up of IMAX films for 2008-2009 is *Roving Mars*, *Wired to Win*, *Forces of Nature* and also *Grand Canyon: A River at Risk*.
- Teachers will also have a chance to enter to win a free Discovery field trip for their classroom (up to 30 students) or a ½ day of outreach programming to their school.

### **Schedule of the event:**

6:00 – 9:00 Science Center of Iowa/ISTS Science Soiree'  
5:30 Registration will open (onsite registration is available)  
6:00 Event begins  
6:10 Welcome (ISTS, SCI and others)  
6:30 IMAX Film  
7:00 Chemistry Demo Day Presentation

7:30 IMAX Film  
9:00 SCI event closes  
9:00 Chair Reception (till 10 pm)

**Registration:**

Register for the *Science Soiree* through ISTS online - <http://ists.pls.uni.edu/> - with your conference registration. Registration for this event only is also available directly from the Science Center of Iowa by calling (515) 274 – 6868 x222 or at the door on October 22. Adult guests are welcome, but they must register for this event.

• **Calling All Pre-K – 8 Teachers!**

*You are cordially invited to register for and attend the Wednesday, October 22<sup>nd</sup> ISTS Open House and Thursday, October 23<sup>rd</sup> ISTS Fall Conference!*

*Please go to <http://ists.pls.uni.edu/> and register for both events! The cost of the event is minimal compared to the quality and quantity of science lesson materials you'll come away with!*

*At the Open House event at the Science Center of Iowa (SCI) in Des Moines, you'll be treated to personal one-on-one tours of the displays. Both the science content and thinking skills for each display will be explained and modeled for you.*

*You will be treated like the professional that you are! See you there!*

• **Countdown to Year of Science: 2009**

SARASOTA, FL - Momentum continues to build for the Year of Science 2009 as plans for the year-long celebration, led by participants in the Coalition on the Public Understanding of Science (COPUS), take shape.

Participants in COPUS are supporting Year of Science 2009 in a variety of ways.

Judy Scotchmoor, of the COPUS Steering Committee reflects-- "By simply registering your organization, adding a Year of Science logo to your Web site and promotional materials, and spreading the word about YoS09 to your colleagues, you are supporting this initiative - it is that simple!"

Find out much more information about how you can help support 2009 as the Year of Science by visiting the website: <<http://www.yearofscience2009.org/>> ).

#### About COPUS

Support for COPUS planning workshops was provided by the National Science Foundation under Grant Nos. EAR-0606600 and EAR-0628790 to the University of California Museum of Paleontology. The cognizant fiduciary body for COPUS and the Year of Science 2009 project is the American Institute of Biological Sciences Inc., a 501(c)(3) nonprofit organization, which is providing staffing support, IT, and other resources. The Geological Society of America, the University of California Museum of Paleontology, and the National Science Teachers Association are also contributing funds for COPUS and Year of Science 2009. The Steering Committee welcomes support from additional scientific organizations and is also pursuing funding from federal agencies and private foundations.

- **NSTA Position Statement:**  
**Elementary School Science – A Review of the Position**

The National Science Teachers Association supports the notion that inquiry science must be a basic in the daily curriculum of every elementary school student at every grade level. In the last decade, numerous reports have been published calling for reform in education. Each report has highlighted the importance of early experiences in science so that students develop problem-solving skills that empower them to participate in an increasingly scientific and technological world.

— Adopted by the Board of Directors  
July 2002

Go to <http://www.nsta.org/about/positions/elementary.aspx> for more information on specific requirements for successful elementary school science. Use the NSTA position to get administrators and parents on board, to aid your school in science improvement, and to strengthen your own science teaching.

- **Free National Institute of Health Teaching Tools**

A popular series of curriculum supplements from the National Institutes of Health (NIH) aimed at promoting science education achievement is now aligned to individual state education standards in science, math, health and English language arts for grades K-12 ([science.education.nih.gov/supplements](http://science.education.nih.gov/supplements)). This cross-curricular alignment, unique to each state, shows educators how the NIH curriculum supplements will help them meet specific learning goals for students

and spells out the usefulness of the series nationwide. This series is **FREE** to educators upon request.

The ongoing series—which currently includes 16 supplements on such topics as genetics, infectious diseases, and cell biology—promotes inquiry-based, interdisciplinary learning. The supplements—consistent with the *National Science Education Standards*—combine cutting-edge science research discoveries and real scientific data from NIH with state of the art instructional materials for grades K-12. The National Institutes of Health—The Nation’s Medical Research Agency—is a component of the U.S. Department of Health and Human Services.

To request **FREE** supplements or learn about how they are aligned with individual state standards, visit the NIH Office of Science Education web site.

- **[Think About It.... by De Anna Tibben](#)**

Happy Fall Greetings to you! I hope your return to school has been an enjoyable one! Hopefully you are ready for the adventure of another year! Need some new ideas or some “recharging” of your lessons? Whether this is your first year, your tenth year, twentieth year, or more, I hope that you consider attending the ISTS Fall Conference Thursday, October 23rd. We are back in Des Moines bigger and better than ever!

This year, on October 22<sup>nd</sup>, we will be having a Wednesday night Open House Event at the Des Moines Science Center of Iowa. Cindy Anderson and her team have put together a wonderful, meaningful, and enjoyable evening of events for you! For your \$15 registration, you will receive one IMAX ticket (to be used that night or save it for a future trip to SCI), tours of SCI with staff members present to explain both science content and metacognition processes at each area, a chemistry demo how-to show by Aileen Sullivan (AHS Chemistry teacher), hors d’oeuvres and non-alcoholic drink, and mingle time with NASA Education Specialist, John Weis. You may even win a free field trip package for your students! (Details at SCI Wednesday, October 22, 2008.)

I encourage you to register for both the 2008 ISTS Fall Conference “Past and Future” and the SCI Open House event. I guarantee you will be treated like the professional that you are and that you will gain valuable material for your classroom!

## Opportunities

- **From The Sloan Career Cornerstone Center**

### Contests for Earth Science Week 2008

The American Geological Institute (AGI) is sponsoring three national contests in conjunction with Earth Science Week -- October 12-18, 2008. This year's theme is "No Child Left Inside." All U.S. residents are encouraged to enter "Earth Science Beyond your Front Door" the 2008 photography contest. This contest asks people to explore the geologic world through the camera. Students grades K-5 who enter the Visual Arts Contest "Studying our Earth" should show themselves as an earth scientist actively studying our planet, through drawing or painting. The Essay Contest, open to students in grades 6-9, is themed "Earth Connections." Entrants are asked to discuss the interconnected geologic processes that take place in their community and how those processes in turn affect them. Find out more: <http://www.earthsciweek.org/contests/index.html>

- **Become an Eco-Hero with the “Siemens We Can Change the World Challenge”**

NSTA has partnered with the Siemens Foundation and Discovery Communications in an important initiative to educate, empower and engage students, teachers, and communities to become agents of change in improving the environment. Today, middle school students across the United States are being encouraged to "go green" and team up for the **Siemens We Can Change the World Challenge**, the first and only national K–12 sustainability education initiative aligned to education standards and uniquely tailored to match students' growing comprehension abilities throughout their school-aged years.

Student teams of two to three students from sixth through eighth grade, under the mentorship of a teacher or adult supervisor, can register for the **Siemens We Can Change the World Challenge** at [www.wecanchange.com](http://www.wecanchange.com). Participating teams will identify an environmental issue in their community, research the issue using scientific investigation, and create a replicable green solution using web-based curriculum tools powered by Discovery Education.

All student teams entering the Middle School Challenge will receive prizes for their participation; top-performing teams will earn cash, teacher education materials, and unique Discovery Experience trips. The grand prize-winning team will receive a comprehensive prize package that includes an appearance on the Discovery Television Network Planet Green and a once-in-a-lifetime Discovery Adventure Trip, accompanied by a Discovery TV personality.

- **Call for Papers: Iowa Section of AAPT**

**Iowa Section of AAPT Meeting (IAAPT)**

**Saturday November 1, 2008**

**Northern Iowa Area Community College (NIACC), Mason City**

On Saturday, November 1, The Iowa Section of The American Association of Physics Teachers will meet at NIACC in Mason City for their fall meeting. Featured talks include topics of nanotechnology and the opening of the Large Hadron Collider at CERN. The IAAPT encourages all teachers and researchers to use this forum to share their experiences with interested professionals. We would like presentations to be about 20 minutes in length. We will make every attempt to accommodate your needs for time and any equipment for your presentation.

Please submit your title, a brief abstract and any special needs you have to: [pbruecken@gmail.com](mailto:pbruecken@gmail.com) I would like to have a program in place before October 1 so please submit your title by September 26. For more information, please visit our website at: [http://faraday.physics.uiowa.edu/IAAPT\\_index.htm](http://faraday.physics.uiowa.edu/IAAPT_index.htm)

I will put together a program and send it out during the first week in October. Please consider attending this meeting of people interested in physics education in the state of Iowa.

Sincerely,  
Peter G. Bruecken, 2008 President, IAAPT

- **A River of Words Poetry and Art Competition**

Every year, River of Words® (ROW) conducts an international environmental poetry and art competition for youth aged 5 to 19 in grades K-12, in affiliation with The Library of Congress Center for the Book. This free contest is designed to help youth explore the natural and cultural history of the place they live, and to express what they discover through poetry and art. Iowa entries not chosen as finalists or grand prize winners in the international contest are returned to **IOWATER**, where they are judged in a statewide **IOWA River of Words®** Environmental Poetry and Art Competition.

The IOWATER Volunteer Water Monitoring Program of the Iowa Department of Natural Resources coordinates the IOWA River of Words® Environmental Poetry and Art Competition. Over 350 students from Iowa entered the 2008 contest, either through their schools, community art centers, local libraries, or on their own. Because of the large number of quality Iowa entries, the Cedar Rapids Museum of Art generously offered to host a juried River of Words® IOWA

Environmental Poetry and Art Exhibit. Fifty-one works of poetry and art were selected to be included in this exhibit, held August 30 thru September 21, 2008.

Each year... entries must be sent by February 15 to:

**River of Words, PO Box 4000-J  
Berkeley, CA 94704 USA  
Phone: 510-548-POEM (7636)  
Fax: 510-548-2095**

ROW returns Iowa's entries to IOWATER in April for state competition. Iowa's state winners are chosen in May. For more information and entry forms, visit <http://www.iowater.net/> and click on the River of Words logo, or contact:

Pat Lohmann  
IOWA River of Words Coordinator  
Iowa Dept. of Natural Resources  
109 Trowbridge Hall  
Iowa City, IA 52242-1319

Phone: (319) 335-1593  
FAX: (319) 335-2754  
email: [Pat.Lohmann@dnr.iowa.gov](mailto:Pat.Lohmann@dnr.iowa.gov)

- **Waste Reduction: Addressing the Overlooked "R"**

**It's about our environment...not just another course about recycling  
University of Northern Iowa  
Interdisciplinary Course  
One Hour Graduate Credit**

Part I: Friday, Jan. 16 (6-9 pm), Saturday, January 17 (8:30-5)

Part II: Thursday, April 9 (6-9:30 pm)

Davenport, Iowa

**\$50 or FREE\***

**Great for middle school, but may be adapted for K-12th grades.**

Go to <http://www.uni.edu/ceee/wastereduction/workshops.htm> for workshop details and to register.

- **Facing the Future Opportunity**

**Share Your Experience, Let *Facing the Future* Send You to a Conference**  
Continue your professional development by sharing your knowledge of science and sustainability education with other teachers – and have your conference costs reimbursed! As a *Facing the Future* Peer Educator, you will join a community of educators and present workshops about your teaching experiences

using *Facing the Future* curriculum resources.

*Facing the Future* is a nonprofit organization dedicated to educating young people to think critically about global issues, sustainability, and positive solutions. A goal of the Peer Educator program is to provide more teachers with the opportunity to learn about global issues and sustainability education by mobilizing the knowledge and skill of teachers experienced with *Facing the Future* curriculum resources.

Peer Educators present workshops about their experiences using *Facing the Future* curriculum resources to other teachers at education-related conferences and professional development meetings at schools and districts. In return, *Facing the Future* will reimburse registration and pre-approved travel costs for conferences, provide a toolkit with resources for conference applications and presentations, and furnish materials for Peer Educators to give to attendees.

To learn more about becoming a Peer Educator and other opportunities see: <http://www.facingthefuture.org/ForEducators/OpportunitiesforEducators/tabid/75/Default.aspx>

- **PolarTREC**

The PolarTREC (Teachers and Researchers Exploring and Collaborating) program is currently accepting teacher applications for the third year of teacher research experiences. Teachers are invited to submit an application to participate in field research learning experiences during the 2009 (Arctic) or 2009-2010 (Antarctic) field seasons. More information and application forms are available at: <http://www.polartrec.com>.

Through PolarTREC, over 40 U.S. teachers will spend two to six weeks in the Arctic or Antarctic, working closely with researchers in the field as an integral part of the science team. PolarTREC teachers and researchers will be matched based on similar goals and interests and teachers will be trained to meet the program requirements prior to the field season. While in the field, teachers and researchers will communicate extensively with their colleagues, communities, and students of all ages across the globe, using a variety of tools including satellite phones, online journals, podcasts, and interactive "Live from IPY" events and web-based seminars.

Teachers and research projects will be selected and matched to fill the openings available. All major expenses associated with teacher participation in PolarTREC field experiences are covered by the program, including transportation to and from the field site, food, lodging, and substitute teacher costs.

We expect that teachers will be notified of selection decisions in December 2008.

#### APPLICATION DEADLINE

Teacher Application Deadline: Monday, 29 September 2008

Email: [info@polartrec.com](mailto:info@polartrec.com)

Phone: 907-474-1600

Funding for PolarTREC is provided by the National Science Foundation (Award Number: 632401).

### • **Toyota TAPESTRY Grants for Science Teachers**

Toyota Motor Sales, U.S.A., Inc. and NSTA are pleased to announce the 19<sup>th</sup> annual Toyota TAPESTRY Grants for Science Teachers program. This year Toyota will award \$550,000 in grants to K-12 teachers of science. A total of 50 large grants of up to \$10,000 each, along with 20-30 mini-grants of up to \$2,500 each will be awarded. Categories include environmental science, integrating literacy and science and physical science. Toyota has awarded 986 grants totaling over \$8 million in this premiere nationwide grant program.

For further information and to begin the application process online, please visit <http://www.nsta.org/pd/tapestry>. The online applications are now available! The deadline for submission of online entries is January 21, 2009.

### • **New 2009 Search For Exemplary Science Program**

The NSTA Exemplary Science Program Series (ESP) is announcing a new search for programs that succeed in achieving success with Goal 3 of the National Science Education Standards (NSES).

The NSES includes only four goals for teaching science in PreK-12 schools and/or other situations than schools per se. Goal 3 indicates that an exemplary program should prepare students to “Engage intelligently in public discourse and debate about matters of scientific and technological concern”. The New ESP will focus upon learning from work on local issues with personal relevance and local importance.

The new planned ESP monograph will utilize the procedures and organization characterizing the previous ESP Volumes which include:

- 1) Pre-K Science
- 2) 5-8 Science
- 3) 9-12 Science

- 4) Professional Development
- 5) Informal Education
- 6) Inquiry
- 7) Science for Resolving Social Issue/Problems

Basically, attention to the NSES More Emphasis features is needed as programs are described. An essential ingredient (about one-third) of the information needed for the chapter must be actual evidence for student learning.

All teachers, organizations, and professionals who have developed ways for meeting Goal 3 of the NSES should prepare a 3-6 page outline describing their programs for review for our National Advisory Board for ESP who will offer suggestions and recommendations before a full 20 page draft is produced. These initial outlines can be submitted anytime – preferably before the end of 2008. The new monograph is planned for completion by May 2009.

Send inquiries and outlines to:

**Robert E. Yager**  
**ESP Coordinator**  
**767 VAN**  
**University of Iowa**  
**Iowa City, Iowa 52242**  
**Telephone: 319-335-1189**  
**E-mail: [Robert-yager@uiowa.edu](mailto:Robert-yager@uiowa.edu)**

- **[Savanna Workshops for Teachers & Naturalists from eii](#)**

*Iowa's Roadside Native Communities: Savanna*

**Nov. 14-16, 2008 and Apr. 3-4, 2009 at Sleep Inn, Pleasant Hill, IA** (an eastern suburb of Des Moines) or **Feb. 6-8, 2009 and Apr. 24-25, 2009 at Baymont Inn, Coralville, IA**

Come learn how to help your students explore and improve Iowa prairies/savanna.

Content is for primary through community college teachers and naturalists.

Participants receive two UNI graduate credits, materials, meals and housing for only \$180 due to grants. For more information please visit <http://www.uni.edu/ceee/eii>

Request a paper brochure at [bollwinkel@uni.edu](mailto:bollwinkel@uni.edu) or call 319-273-2783.

- **Earth Science Opportunity**

This is a website for the Earth Portal Newsletter for those teaching environmental science or Earth science. <http://www.earthportal.org/>

**Contest for Students**

The National Earth Science Teachers Association (NESTA) has teamed up with Astronomy Magazine to make available an exciting contest for small teams science students. The essay contest days are a thing of the past given all the technology available to be creative in demonstrating knowledge of a topic. Similar to the way scientists work to solve a problem students will work together as a team in this contest to create a DVD demonstrating knowledge of an astronomical topic.

The topic for middle school students (grades 6-8) is "Is Pluto a planet or not?", and the topic for high school students (grades 9-12) is "What is a black hole?". Send a video (DVD format) that is three minutes or less in length. It can be in the form of a documentary, talk show, news broadcast, commercial, anything! Students can win really cool prizes for themselves and for their school. Submissions go to Astronomy Magazine, but the judging will be done by NESTA.

For complete details follow the link to the NESTA/Astronomy Magazine Young Astronomers Video Contest at <http://www.astronomy.com/asy/default.aspx?c=a&id=7330>

From here you can download the application form and a copy of the official rules. Check out the prizes that will be won too! The deadline for entries is November 7, 2008 -so get moving!

## **News**

- **Bytesize Science Makes Science Fun**

The American Chemical Society's Bytesize Science is an educational, entertaining podcast for young listeners. Like the flying car, Anglia, in the Harry Potter films, Bytesize Science transports kids, teachers, and other listeners into a real-life world realm where science is the enchantment. Bytesize Science translates cutting-edge scientific discoveries from ACS's 36 peer-reviewed journals into stories for young listeners about science, health, medicine, energy, food, and other topics. New installments of Bytesize Science are posted every Monday and are available without charge.

Visit iTunes now and download the latest episode of Bytesize Science. To learn more about the podcast, visit [http://portal.acs.org/portal/acs/corg/content?\\_nfpb=true&\\_pageLabel=PP\\_SUPE\\_RARTICLE&node\\_id=2096](http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_SUPE_RARTICLE&node_id=2096)

- **Forecast Earth Summit 2008**

The Weather Channel continues to demonstrate its commitment to educate the next generation regarding climate and environmental literacy. The all-weather network announces the second Forecast Earth Summit, December 5 -- 7, 2008 in Washington, D.C., due to the success of the first-ever event held in 2007.

The three-day Forecast Earth Summit focuses on environmental education and will afford twenty high school students the opportunity to engage with numerous environmental leaders, enthusiasts and scientists. Last year's Summit was led by celebrity guest Hayden Panettiere and included TWC personalities such as climate expert Dr. Heidi Cullen, water researcher Dr. Marcus Eriksen, and environmental zoologist Jarod Miller. Participating students at the Forecast Earth Summit will engage in hands-on activities such as building and launching a boat made entirely of recycled materials and creating a public service announcement (PSA) that will air on The Weather Channel and online at weather.com.

Eco-ambassadors will enjoy organic food, green transportation, and eco-friendly hotel accommodations. They will take part in tours, focus groups, and panel discussions with leading environmental minds. Last year's 2007 Summit welcomed musician and environmentalist Adam Garner, Al Gore-trained climate speaker Taylor Francis, and representatives from the National Environmental Education Foundation, the U.S. Green Building Council, World Wildlife Fund and Carbonfund.org.

More information about the Forecast Earth Summit can be found at <http://forecastearthsummit.org>.

- **Tracking The Reasons Many Girls Avoid Science And Math**

ScienceDaily (Sep. 8, 2008) — Most parents and many teachers believe that if middle-school and high-school girls show no interest in science or math, there's little anyone can do about it. New research by a team that includes vocational

psychologists at the University of Wisconsin-Milwaukee (UWM) indicates that the self-confidence instilled by parents and teachers is more important for young girls learning math and science than their initial interest.

"The relationship between confidence and interest is close," says UWM Distinguished Professor Nadya Fouad. "If they feel they can do it, it feeds their interest." It's a high-priority question for members of organizations like the National Science Foundation (NSF) and the National Research Council as they ponder how to reverse the rapidly declining numbers of women in STEM careers – science, technology, engineering and math.

University of Wisconsin - Milwaukee (2008, September 8). Tracking The Reasons Many Girls Avoid Science And Math. *ScienceDaily*. Retrieved September 11, 2008, from <http://www.sciencedaily.com/releases/2008/09/080905153807.htm>

- **News from The Space Place at NASA**

## 1. "Extreme Starburst"

by Dr. Tony Phillips

A star is born. A star is born. A star is born.

Repeat that phrase 4000 times and you start to get an idea what life is like in distant galaxy J100054+023436.

Astronomers using NASA's Spitzer Space Telescope and ground-based observatories have found that the galaxy gives birth to as many as 4000 stars a year. For comparison, in the same period of time the Milky Way produces only about 10. This makes J100054+023436 an extreme starburst galaxy.

"We call it the 'Baby Boom galaxy,'" says Peter Capak of NASA's Spitzer Science Center at the California Institute of Technology in Pasadena, CA. "It is undergoing a major baby boom, producing most of its stars all at once. If our human population was produced in a similar boom, then almost all people alive today would be the same age."

Capak is lead author of a paper entitled "Spectroscopic Confirmation of an Extreme Starburst at Redshift 4.547" detailing the discovery in the July 10th issue of *Astrophysical Journal Letters*.

The galaxy appears to be a merger, a "train wreck" of two or more galaxies crashing together. The crash is what produces the baby boom. Clouds of

interstellar gas within the two galaxies press against one another and collapse to form stars, dozens to hundreds at a time.

This isn't the first time astronomers have witnessed a galaxy producing so many stars. "There are some other extreme starburst galaxies in the local universe," says Capek. But the Baby Boom galaxy is special because it is not local. It lies about 12.3 billion light years from Earth, which means we are seeing it as it was 12.3 billion years ago. The universe itself is no older than 14 billion years, so this galaxy is just a youngster (Capak likens it to a 6-year-old human) previously thought to be incapable of such rapid-fire star production.

The Baby Boom galaxy poses a challenge to the Hierarchical Model of galaxy evolution favored by many astronomers. According to the Hierarchical Model, galaxies grow by merging; Add two small galaxies together, and you get a bigger galaxy. In the early years of the universe, all galaxies were small, and they produced correspondingly small bursts of star formation when they merged. "Yet in J100054+023436, we see an extreme starburst. The merging galaxies must be pretty large."

Capak and colleagues are busy looking for more Baby Boomers "to see if this is a one-off case or a common occurrence." The theory of evolution of galaxies hangs in the balance.

Meanwhile: A star is born. A star is born. A star is born.

See more breathtaking Spitzer images at [www.spitzer.caltech.edu/Media/mediaimages](http://www.spitzer.caltech.edu/Media/mediaimages). Kids can play the new Spitzer "Sign Here!" game at [spaceplace.nasa.gov/en/kids/spitzer/signs](http://spaceplace.nasa.gov/en/kids/spitzer/signs).

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

## **2. Sign Here! A New Game At the Space Place**

The Spitzer Space Telescope has given us many spectacular images of the infrared universe. Stunning spiral galaxies, colorful clouds of glowing gas and dust, star nurseries never seen before. The Spitzer mission team wants to display these beautiful images, so they have given the "NASA Sign Here!" factory a big order for signs to label their pictures. Your job is to paint the signs by typing the words as the "blanks" pass by on conveyor belts. They start out slow, but as you get better, the signs speed up and pass by in both directions. See how high

you can score before the game ends when you have missed ten signs. Curious about what some of the words mean? You can check them out on the *Sign Here!* glossary. To start painting, go to <http://spaceplace.nasa.gov/en/kids/spitzer/signs>.

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## *Your ISTS Leadership:*

### **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 [scihawk@aol.com](mailto:scihawk@aol.com) 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 [scihawk@aol.com](mailto:scihawk@aol.com).