9-2010

ISTS, September 2010

Iowa Academy of Science

I O W A A C A D E M Y O F S C I E N C E

ISTS

Special Announcement: *Due to floods at ISU the ISTS Fall Conference will be held at Cornerstone Church in Ames. Read on for more information!!*

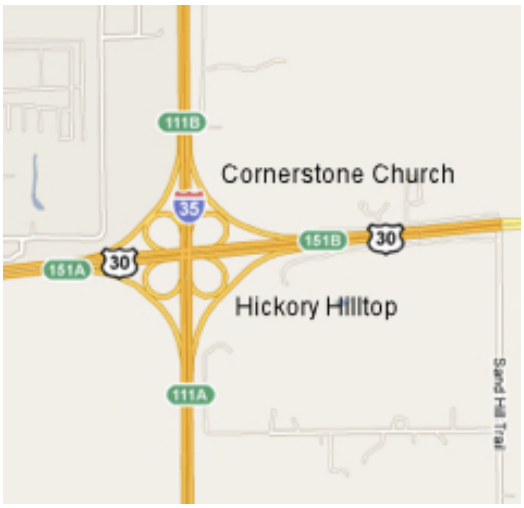
Nadine Weirather, Editor

September, 2010

Fall Conference Information

As time to the conference shortens, we are gearing up, leading to the discovery of changes and announcements that need to be brought to your attention. Due to the flooding in Ames this year, we have been forced to make a location change for our conference.

Originally planned for Iowa State Campus, Scheman Hall, the ISTS Fall Conference location is now Cornerstone Church, 56829 Highway 30 in Ames. This facility is just off Sand Hill Trail frontage road to the North of Highway 30, just east of I35 interchange.



This extremely accessible site is wonderful, and bonuses include projection screens, drop cords and wi-fi available in every room!

Cornerstone Church is a user-friendly facility. All exhibits will be in the Main Foyer, and this will provide even more accessibility for ALL participants throughout the day.

Thursday night events remain unchanged and will begin with dinner at the Hickory Park Restaurant's Hickory Hilltop Center for dinner. Please note that this facility is separate from Hickory Park Restaurant. The Hickory Hilltop Center is located south of Highway 30 just across from Cornerstone Church at 56772 241st St.

Thank you for your interest in ISTS and the science education of Iowa's students!

-- 2010 ISTS Fall Conference Committee

A Message from the Chair: Kathy Megivern

I hope your school year is off to a wonderful start. And I want to be welcoming you to a wonderful 2010 ISTS Fall Conference.

The Conference will run October 7 - 9 this year and highlights brand new features such as field trips, a Galileoscope workshop, star-gazing, and more, as well as presentations that cover all strands of the Iowa Core Curriculum!

Another "new feature" is a brand new location, changed from the originally-advertised Scheman Building on the ISU campus. I just returned from a tour of our new location at Cornerstone Church of Ames and it is an unbelievably fantastic venue!

Register today at http://ists.pls.uni.edu/ and look forward to science, renewal, and inspiration, not to mention an all-around great time, in a super-inviting location!

Kathy Megivern

The SciJinks Weather Laboratory at http://**scijinks.gov** targets middle-schoolers. It explains the reasons for the seasons, the tides, and other weather and Earth science mysteries in colorful "Now I get it!" pages.

NASA Climate Kids at http://**climate.nasa.gov/kids** demystifies the "Big Questions" about global climate change using 4-6th-grade-level language, colorful illustrations, humor, interactivity, and games.

De Anna Tibben, ISTS Fall Conference Chair:

When it rains, it pours! At least that's what happened this August in central Iowa. As a result of flooding in the Ames area, ISTS will move the Conference site on Friday 10/8 to the Cornerstone Life Church.

This facility will allow us to have our Conference as planned. And believe me... plans have been in the works for an AWESOME Conference since July 2009!!!

The exhibitors are ready, presenters are set, the facility is booked, the hotels are notified... all that is left is for YOU to register for the 2010 ISTS Fall Conference! Go to http://ists.pls.uni.edu/ and register TODAY!!!

See you in October!
De Anna Tibben
2010 Fall Conference Chair

Earth Science Links

Here is a web site that Iowa science teachers might be interested in: www.formontana.net/home.html

The site includes links to videos of over 20 science demonstrations, Montana's Earth Science Pictures, and many other resources.

Join Us At the Biology Breakfast at the ISTS Fall Conference!

Teaching Biodiversity: Why, When, and How?

Dr. Jim Colbert grew up in Cedar Rapids Iowa, spending much of his childhood along a small stream called Prairie Creek. After completing his B.S. in Biology at Iowa State University, Dr. Colbert went on to earn both an M.S. and a Ph.D. in Botany at the University of Wisconsin-Madison. After three years on the faculty at Colorado State University, Dr. Colbert returned to Iowa State as a faculty member in the Department of Botany in 1988. During 2010, Dr. Colbert is serving as the President of the Iowa Academy of Science.

Dr. Colbert is currently an Associate Professor in the Department of Ecology, Evolution, and Organismal Biology and is the Coordinator of the Undergraduate Biology Program at Iowa State. Dr. Colbert has helped thousands of students learn biology through his efforts in teaching introductory biology courses at both CSU and ISU. Dr. Colbert has been recognized with fourteen teaching awards for his instructional efforts. Dr. Colbert is also one of the co-authors of a widely used college biology laboratory manual.

Dr. Colbert's "love affair" with rivers and streams has continued well beyond his childhood. In 1998 Dr. Colbert developed the "Skunk River Navy" to provide a biologically-focused service-learning opportunity for in-coming ISU Biology majors participating in the BEST ("Biology Education Success Teams") Learning Community. Student volunteers in the SRN participate in biological diversity monitoring and remove trash from streams in the Ames area. Since 1998 the SRN has removed over 56 tons of trash from central Iowa streams. Dr. Colbert also leads an annual field trip class to the Boundary Waters Canoe Area in northern Minnesota that focuses on the biodiversity of the boreal forest.

-- Alicia Schiller, Biology Breakfast Chair

NSTA Board Adopts New Position Statement: *The Role of Research on Science Teaching and Learning*

The NSTA Board of Directors voted recently to adopt a new position statement on the role of research on science teaching and learning. The statement encourages all participants in science education to assume active roles in research practices, and sets forth a number of declarations regarding the focus, practice, and use of research on science teaching and learning. The new statement replaces two old statements—*The Role of Research in Science Teaching* (1990) and *Research in Science Education* (1992). To view the new statement, go to http://www.nsta.org/about/positions/research.aspx. To view all NSTA position statements, go to www.nsta.org/position.

Rain, Runoff and Rivers: Understanding Watersheds Workshops for Teachers and Naturalists

November 12-14, 2010 and April 15-16, 2011, Pleasant Hill, IA or February 11-13 and April 29-30, Mount Vernon, IA Submitted by Carl Bollwinkel

Presented at Sleep Inn, Pleasant Hill, IA (near Des Moines) and Sleep Inn, Mount Vernon, IA (near Cedar Rapids) by Environmental Issues Instruction **(eii)**, a program of the UNI Center for Energy and Environmental Eduction.

Learn how to help your students understand watershed issues and take action to mitigate flooding via activities coordinate with the Iowa Core. For primary through Community College teachers and naturalists who will receive 2 UNI gradate credits, materials, meals and housing for only $198 registration due to REAP, LRTF, KIB and EPA grants. Check with ICEC for teacher registration stipends at <behlers@netins.net>. For more information visit www.uni.edu/ceee/eii, request a paper brochure at bollwinkel@uni.edu or call 319-273-2783.

Teacher Discount Offer on Education Games

AreYouGame.com offers 10% discount to all education-related purchases (coupon code: EDU-EXPO). http://www.areyougame.com

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Space Place News

Next year, 2011, is the Year of the Solar System, and we are getting a head start at The Space Place. "Solar System Explorer" is a super-game containing several mini-games. Pick a planet. Or a comet. Or an asteroid. Zoom in and poke around. If it's a planet with moons, zoom in on one of them and explore even more. And if a spacecraft is already there, or headed there, play a mini-game to help the spacecraft with its mission of exploration. Earn achievements by reading about solar system objects and by playing the games. More mini-games are coming soon. See how high you can push your scores. Post them on your Facebook page. Start exploring at http://spaceplace.nasa.gov/en/kids/solar-system.

We have just published the latest issue of the Space Place Newsletter: News and Notes for Formal and Informal Educators. The newsletter is all about the many useful and--it goes without saying--free resources on the Space Place website that can be helpful for kids and grown-ups interested learning about science, technology, and space.

Find the newsletter at http://spaceplace.nasa.gov/en/educators.

Now Accepting Applications PolarTREC Teachers 2011-2012

Teachers and Researchers Exploring and Collaborating: Arctic Research Consortium of the U.S.

Teacher Application Deadline: Friday, 1 October 2010

For further information, please contact PolarTREC at:
Email: info@polartrec.com
Phone: 907-474-1600

Apply at the PolarTREC website: http://www.polartrec.com/teachers/application

PolarTREC (Teachers and Researchers Exploring and Collaborating) is currently accepting applications from teachers for the fifth year of teacher research experiences. Teachers are invited to submit an application to participate in field research learning experiences during the 2011 (usually Arctic) or 2011-2012 (usually Antarctic) field seasons.

Through PolarTREC, 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, photos and other multimedia, and web-based seminars. Teachers and research projects will be selected and matched to fill the approximately 12 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.

ADDITIONAL INFORMATION
More information about PolarTREC, including program goals, requirements, expectations, and frequently asked questions, is available at: http://www.polartrec.com

Spirit of Innovation Awards

The Spirit of Innovation Awards program challenges teams of high school students to create innovative products using science, technology, and entrepreneurship to solve 21st century, real-world problems.

Eligible students may compete on teams in any of three Challenge Categories.

To learn more, check out the Spirit of Innovation Award website at www.conradawards.org.

Offer your students the opportunity to learn about NASA through educational resources, events, projects and media. Image Credit: NASA

COLEOPTERISTS SOCIETY

NASA Explorer Schools Registration

The NASA Explorer Schools (NES) project is NASA's classroom-based gateway for middle school (grades 4–8) and high school (grades 9–12) classrooms. NES provides free teaching and learning resources that promote student engagement in science, technology, engineering and mathematics, or STEM. The project provides opportunities for teachers and students to participate in NASA's mission of research and discovery through inquiry-based experiences directly related to the work of NASA scientists and engineers.

Throughout the school year, the NES Virtual Campus website will serve as a portal to dynamic learning experiences, allowing students to examine real-world problems and challenges based on NASA research and exploration. Classroom activities are coupled with special events featuring interactions with NASA's scientific and technical workforce, so students learn firsthand about mission highlights, new technologies, and research findings.

Teachers have the opportunity to participate in professional development experiences delivered through NES Virtual Campus technology to support effective classroom implementation of NES resources. At the end of the year, NES will recognize its best teachers and schools with NASA experiences such as field center training, research opportunities, and flights aboard a reduced-gravity aircraft.

All participants must be U.S. citizens. Each must be an administrator, aide, curriculum specialist, educator, guidance counselor, media specialist, resource teacher, or student teacher in a state- or nationally accredited K–12 education institution in the United States or a U.S territory.

For more information and to schedule an orientation session, visit the NASA website at: http://www.nasa.gov/offices/education/programs/national/nes2/home/index.html. Questions about the new NASA Explorer Schools project should be directed to nasa-explorer-schools@mail.nasa.gov.

Siemens We Can Change the World Challenge

Empower your student to make a difference!!

We are thrilled to announce that the Siemens We Can Change the World Challenge http://www.wecanchange.com/ is now open for students in grades K-12 to get started today.

You and your students are invited to become Agents of Change by participating in the 2010-2011 Siemens We Can Change the World Challenge.

The national Challenge encourages students to develop plans to initiate environmental change in their schools and communities. Previous projects ranged from reducing lunchtime waste to saving local trees and encouraging eco-friendly gardens.

A panel of environmental advocates and science educators select winners based on the team's ability to create a positive, measurable solution to a local environmental problem and how well it can be replicated by other communities.

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 or kathy.megivern@gmail.com.

The Coleopterists Society Youth Incentive Award Program

The Coleopterists Society, an international organization of professionals and hobbyists interested in the study of beetles, has established a program to recognize young people studying beetles. The Society has pledged to provide up to $300 each year for the Youth Incentive Award Program. Each of the two awards (Junior and Senior) is a monetary grant of $150, award recipients also will receive up to $200 (Junior Award) and $400 (Senior Award) of equipment credit from the BioQuip Products catalog, In addition to monetary and BioQuip grants, award recipients will receive a one year subscription to the society journal, *The Coleopterists Bulletin* **This is for children of grades 7-12 only.**

The selection committee invites proposals for topics such as field collecting trips to conduct beetle species inventories or diversity studies, attending workshops or visiting entomology or natural history museums for special training and projects on beetles, studying aspects of beetle biology, etc. This Award is for proposals by individuals only.

Additional details and application forms can be obtained from: Dr. David G. Furth; Entomology, NHB, MRC 165; P.O. Box 37012; Smithsonian Institution; Washington, D. C. 20013-7012 (phone: 202-633-0990, email: furthd@si.edu). Also check The Coleopterists Society WebPage: **http://www.coleopsoc.org/default.asp?Action=Show_SocietyInfo&ID=Youth**

Applications for this year must be submitted by **15 November 2010.**

Free Classroom Response Solution: Mouse Mischief

Microsoft has just made classroom response technology affordable for every school with the development of their new program - Mouse Mischief.

Mouse Mischief is a free program which interacts with PowerPoint to turn regular mice into automatic response system. Presentations become interactive when each students mouse is connected to the teacher's computer via USB hubs. Students can interact with the presentations by clicking, circling, crossing out or drawing on the slides. The program allows the teacher to track which students selected the correct answer and student response times.

Videos of Mouse Mischief in action, free sample lessons and the free program are available here: http://www.microsoft.com/multipoint/mouse-mischief/

Cassini Scientist For A Day Essay Contest

2010 Edition - Contest Overview

Cassini Scientist for a Day is an essay contest designed to give students a taste of life as a scientist. Students compare and research three possible targets that the Cassini spacecraft can image during a given time set aside for education. They are to choose the one observation they think will yield the best science results and explain their reasons in an essay.

Winners will be invited to participate in teleconferences with Cassini scientists from NASA's Jet Propulsion Laboratory.

The next edition of the contest is under way. Short videos in support of each observation are now available at http://saturn.jpl.nasa.gov/education/scientistforaday9thedition/. The deadline for the contest is Oct. 27, 2010.

Disney's Planet Challenge is being expanded to include two tracks: one for grades 3–5, and another for grades 6–8. The middle school curriculum will offer an increased focus on STEM education.

The Challenge offers students the chance to use their imagination to help the planet while giving educators a fresh new way to motivate students with the help of a curriculum that meets national and state guideline requirements.

The winning elementary class will enjoy a celebration at Disneyland® Resort while middle school winners will earn a $20,000 grant for their school. Both grand prize-winning classrooms will be illustrated and appear within a Marvel comic book.

For more information or to enroll in the program, visit www.Disney.com/planetchallenge. Enrollment is open through **December 17, 2010**.

Space Place Article

The Hunt is On! By Carolyn Brinkworth

The world of astronomy was given new direction on August 13, 2010, with the publication of the Astro2010 Decadal Survey. Astro2010 is the latest in a series of surveys produced every 10 years by the National Research Council (NRC) of the National Academy of Sciences. This council is a team of senior astronomers who recommend priorities for the most important topics and missions for the next decade.

Up near the top of their list this decade is the search for Earth-like planets around other stars—called "extrasolar planets" or "exoplanets" —which has become one of the hottest topics in astronomy.

The first planet to be found orbiting a star like our Sun was discovered in 1995. The planet, called "51 Peg b," is a "Hot Jupiter." It is about 160 times the mass of Earth and orbits so close to its parent star that its gaseous "surface" is seared by its blazing sun. With no solid surface, and temperatures of about 1000 degrees Celsius (1700 Fahrenheit), there was no chance of finding life on this distant world. Since that discovery, astronomers have been on the hunt for smaller and more Earth-like planets, and today we know of around 470 extrasolar planets, ranging from about 4 times to 8000 times the mass of Earth.

This explosion in extrasolar planet discoveries is only set to get bigger, with a NASA mission called Kepler that was launched last year. After staring at a single small patch of sky for 43 days, Kepler has detected the definite signatures of seven new exoplanets, plus 706 "planetary candidates" that are unconfirmed and in need of further investigation. Kepler is likely to revolutionize our understanding of Earth's place in the Universe.

We don't yet have the technology to search for life on exoplanets. However, the infrared Spitzer Space Telescope has detected molecules that are the basic building blocks of life in two exoplanet atmospheres. Most extrasolar planets appear unsuitable for supporting life, but at least two lie within the "habitable zone" of their stars, where conditions are theoretically right for life to gain a foothold.

We are still a long way from detecting life on other worlds, but in the last 20 years, the number of known planets in our Universe has gone from the 8 in our own Solar System to almost 500. It's clear to everyone, including the Astro2010 decadal survey team, that the hunt for exoplanets is only just beginning, and the search for life is finally earnestly underway.

Explore Spitzer's latest findings at http://www.spitzer.caltech.edu. Read "Lucy's Planet Hunt" at http://spaceplace.nasa.gov/en/kids/storybooks/#lucy.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with NASA.