ISTTS

It’s Fall Conference Time -- Have YOU registered?

ISTTS Fall Conference

Plan on a fun time of renewal and learning in Ames on October 17-18.

Soar to the Core

Monday, October 17, Conference Kick-Off Schedule

- 4:00 - Tour Reiman Gardens
- 5:15 - BBQ Dinner catered by Hickory Park, Presidential Award presentation, Yvette McCulley and Colleen Anderson speak on Iowa Core
- 7:00 - Explore BOEC (Biotechnology Outreach Education Center), E-SET (ISU Extension - Science, Engineering, and Technology), or Reiman Gardens (including a presentation by Reiman Gardens staff)
- 8:45 - Dessert and presentation by Ray Anderson on the new Iowa Bedrock Map

Fall Conference Location Map

Iowa State University Campus Map
Tuesday's Conference Activities are in the Scheman Building.

Official Conference Hotel:

Gateway Hotel and Conference Center
2100 Green Hills Drive
1-800-FOR-AMES
$89/night/room + tax (12%)
- You can get the same rate for 2 days before and 2 days after if you book at same time.
- The cutoff date is Sept. 26th.
- You must ask for the Iowa Academy of Science Block in order to get this rate.

Breakfast Section Meetings Tuesday Morning Have Been Planned by These Leaders:

Teri Wiese -- Earth Science
Lynne Campbell -- Elementary
Alicia Schiller -- Biology
Jeanne Rogis -- Middle School
Ken Beck -- Chemistry
Marcy Seavey -- IA Junior Academy of Science

Register at: http://www.iacad.org/ists/fall-conference/index.html

Opportunities
- Message from Kathy
- Fall Conference News
- Congratulations Kacia Cain!
- Conservation Opportunities

Opportunities
- Darwin Days
- EducationNation Town Hall Mtg.
- STEM Education
- Climate Change Survey
- Fulbright Exchange
- Energy Challenge
- Future City Competition

Opportunities
- NIDA
- Clorox Competition
- Leading Edge Schools
- World Population
- River of Words
- Cassini Essay
- Chemistry Week
- NABT Outstanding Teacher Search
- NASA Websites

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

ISTTS Leadership

Your Leadership team can be found at http://ists.pls.uni.edu/officers.html.
We are always looking for good people. Send a line to Adam.Puderbaugh@dmps.k12.ia.us if you would like to be more involved.

ISTTS Newsletter September, 2011
ISTS Fall Conference Chair: Kathy Megivern’s Message

Greetings, ISTS Members!

I hope your school year is off to a fantastic start! And I hope you’ve registered for the annual ISTS Fall Conference and that you’ll be joined by many of your colleagues! It promises to be a well-rounded conference, with Iowa Core and more. If you haven’t registered yet, check out the details at http://www.iacad.org/ists/index.html, with more details added as conference time nears.

It’s not too early to look within and around you for people that would enhance our leadership team. We are seeking nominations for Vice-Chair and Secretary for spring elections.

Kathy Megivern
ISTS 2011 Fall Conference Chair

More ISTS Fall Conference News

Keynote speakers are:
• Drs. Christina Buesching and Chris Newman of Oxford University and the Earthwatch Expedition

Their topic is:
• “Mammals of Nova Scotia.”

Other featured speakers are:
• Mike Clough (modifying science activities)
• Chad Heinzel (GIS)
• Yvette McCulley and Colleen Anderson (Iowa Core Curriculum)

ISTS Member Kacia Cain is the NABT Outstanding Biology Teacher 2011

ISTS congratulates member Kacia Cain of Des Moines’ Central Campus as she was named this year’s National Association of Biology Teachers Outstanding Biology Teacher.

Kacia Cain is an anatomy & physiology and biotechnology teacher at Central Campus. Her students are involved in hands-on, real world activities where they can get excited about science.

See you in Ames on October 17-18, 2011 as we SOAR to the Core and aim for higher student achievement!!!
Fishing Field Experience Mini-Grants

2011-2012 Grant Application (Attached) Mini-grants (up to $500) are available to help fund school fishing field experiences. The field experience must: occur at a site no more than 50 miles away from the school, and be part of a Fish Iowa! Unit/Course. Grants must be issued to accredited K-12 schools. Grant application deadline: October 24.

Project Learning Tree GreenWorks! Grant

Do you have an idea for a school/community native plant garden, a forest improvement project, a streamside restoration plan, a recycling program, or energy conservation project for your students? Need funds to implement it? Apply for a Project Learning Tree GreenWorks! grant! Project proposals are due Friday, September 30th, the maximum grant award is $1,000.

Place-Based Education Mini-Grants

2011-2012 Grant Application (Attached) Mini-grants (up to $500) are available to schools to implement a place-based approach to learn about local aquatic resources/issues in coursework. Grant application deadline: October 31.

Grant Requirements:

- Have at least one staff member trained in Projects WILD, WILD Aquatic, and Learning Tree as a member of the integration team. (Other conservation/environment/nature resources may also be utilized.)
- Implement a place-based approach for local aquatic resources/issues in coursework with a specific group of students using Projects WILD, WILD Aquatic, and Learning Tree.
- Evaluate participant achievement related to standards and benchmarks for content/skill areas of the selected subject area(s) and grade level.
- Complete online surveys (teacher and student) before and after implementation of the place-based approach.
- Complete progress and final reports outlining accomplishments of the grant, results of formal assessments, and an accounting of expenditures (forms provided) by June 1.

Iowa DNR News

The Iowa Department of Natural Resources launched a new website this summer. We are excited about the new, user friendly format!

Our new DNR Education web pages are also up and running and ready to be a great resource for you. We are excited to offer correlations to Iowa and National Standards for the Project Learning Tree and Project WILD books! You can find this wonderful resource under Classroom Resources in the document library (under For Teachers). We also have the alignment to Iowa Early Learning Standards and Iowa Quality Preschool Program Standards for the early childhood books Growing Up WILD and Environmental Experiences for Early Childhood on our Early Childhood web page (under For Teachers).

We offer information on wonderful educational grants, education training programs and education competitions. We have lesson plans too! In our document library (under For Teachers - Classroom Resources) you can find sample lesson plans, fact sheets on Iowa plants and animals and book lists for all ages.

Don’t forget to check out our blogs! Exploring Iowa’s Natural Resources blog - Learn fun ways to incorporate natural resources into your classroom. A different environmental topic is featured each week.

Outdoor Explorations for Early Learners blog - Learn fun ways to incorporate nature into your early childhood classroom. Activities build on children's sense of wonder and invites them to explore nature and the world around them.

We think you are going to love our new web pages and are excited to share them with you! Enjoy!

Shannon Hafner
Iowa Department of Natural Resources
shannon.hafner@dnr.iowa.gov
641/747-2051

Eligibility Criteria for Grant Funding

- Grant request is for field trip related costs.
- Field trip mileage does not exceed 100 miles each way (200 miles round trip).
- A minimum of 20 students are planned to attend the field trip.

Maximum Grant Amount
$250 per application. Teachers may only apply for one per year. Awards will be made on a first-requested, first-awarded basis for eligible applications until available grant funds have been awarded. Two grants per state will be made each year.

Eligible Applicants

Eligible applicants are teachers conducting field trips to the Upper Mississippi River System which includes the Mississippi River and Illinois River. Those teachers who have attended the UMRCC sponsored “Exploration of the Mississippi River - A Workshop for Teachers” and/or other river related teacher workshops will receive priority. If a formal river related teacher workshop has not been held in your part of the river, experience working with educators from state and federal agencies to learn more about Mississippi River fish and wildlife, will suffice. Please provide the agency representative’s name and contact information.

Application Process

Grant application is attached. Submit completed grant applications to UMRCC Coordinator Scott Yess at scott_yess@fws.gov. Applications will be accepted between Aug. 1 and Nov 30.

The Upper Mississippi River Conservation Committee (UMRCC) Field Trip Fund program is a grant initiative designed to help schools in Minnesota, Wisconsin, Iowa, Illinois and Missouri fund field trips to the Mississippi River. Field trips must engage students in learning about the Mississippi River’s fish, forest, wildlife and natural habitats and their conservation. These learning experiences should support science and other academic concepts being taught in the classroom. Field trips must be along the Upper Mississippi River System.
Bring Evolution To Your School/Community For Darwin Day 2012!

Interested in bringing cutting-edge evolutionary science to your school and community? Apply to be a stop on NESCent’s 2012 Darwin Day Roadshow.

NESCent (The National Evolutionary Synthesis Center) is an NSF-funded evolution research center. To celebrate Charles Darwin’s contributions to science and society, we send our scientists on the road every year during “Darwin Day” (the annual, world-wide celebration of Darwin’s birthday on Feb. 12th) to talk to students, teachers and the general public about their research and career opportunities in science. Our focus is on small, rural communities (i.e., places that wouldn’t likely have a Darwin Day celebration if they weren’t a stop on our Roadshow). There is no cost to you, the teachers, and we’ll even leave you with a collection of evolution teaching resources.

For more information, and to apply to have your school considered, please visit roadshow.nescent.org or contact Jory Weintraub (jory at nescent dot org). Applications are being accepted now through Oct. 31st.

Participate in the NBC EducationNation Town Hall

Join educators from the across the country on Sunday, September 25, to discuss the challenges and opportunities facing our schools in the second-annual nationally televised Teacher Town Hall. Hosted by Brian Williams, the educator-only forum will provide a unique and visible platform for educators from across the country to make their voices heard, brainstorm new ideas, discuss key policy issues, and ask questions of each other to advance the conversation about teaching in the United States.

As hundreds of teachers gather in-person at Rockefeller Plaza in New York City, NBC News is also inviting teachers from across the country to join the conversation virtually by registering to take part in the conversation at EducationNation.com. Registration for this event will be available in early September 2011.

This special event is part of the 2011 Education Nation National Summit, which consists of live events and panel sessions on Rockefeller Plaza in New York City and is complemented by education reports and programming across the network’s shows and platforms during the week of September 25.

Help NESTA Examine Climate-Change Education

NESTA is trying to gather information not only on what is happening in the classroom today, but also to get a sense of teachers’ understandings about climate change.

The National Earth Science Teachers Association has developed an anonymous survey to gather information about climate change education underway in the K-12 classroom today. Take the survey at https://www.surveymonkey.com/s/N5ZHKFJ. The survey will be available through September, and results will be made available through the NESTA website at http://www.nestanet.org in November of this year.

Dr. Roberta Johnson
NESTA Executive Director
email: rmjohnsn@gmail.com

Preparing Students for a STEM-Filled World

The students of today will be the leaders and innovators of tomorrow, but how well are schools preparing them for a future that pivots on science, technology, engineering, and math (STEM)? The September 1 issue of ASCD Express features promising initiatives that seek to bridge the STEM content gap for both students and educators. As a special highlight, the newsletter features a spotlight on NSTA’s classroom-ready STEM resources, with activities tailored for teachers of all grade levels. Thank you to ASCD for this special opportunity to partner and bring all of our educators the best there is to offer in STEM ed.

from NSTA Express, September 5, 2011
Fullbright Teacher Exchange

Ever thought of teaching abroad for a year? The October 15th deadline for the Fulbright Teacher Programs is approaching! This is an international professional development opportunity for K-12 educators.

The Fulbright Teacher Exchange Program provides opportunities for teachers to participate in direct exchanges of positions with colleagues from other countries for a semester or a year. By living and working abroad, exchange teachers gain an understanding and appreciation of different educational systems and cultures, and enrich their schools and communities by providing students with new perspectives about the world in which they live.

The Distinguished Fulbright Awards in Teaching Program is designed to recognize and encourage excellence in teaching in the U.S. and abroad. Twenty-four highly talented U.S. and international teachers are selected to receive a grant to study at a university, conduct research, teach classes and workshops, and develop a project pertaining to their field of educational inquiry during their semester overseas.

• See http://www.fullbrightteacherexchange.org/ for application information.

Challenge Students to Become Energy Efficient

“This exciting competition is designed to inspire the next generation of energy leaders to take simple and affordable steps today that will save money and get them thinking about energy issues at an early age,” said Energy Secretary Chu.

America’s Home Energy Education Challenge (AHEEC) is a new nationwide student competition to help families save money by saving energy at home. AHEEC engages students in elementary and middle schools to make smarter energy choices that reduce U.S. reliance on fossil fuels and put money back in their parents’ pockets. This initiative aims to educate America's youth about the benefits of energy efficiency, motivate students to play a more active role in how their families use energy, and help families across the country reduce their energy bills. Participating schools compete for more than $200,000 in prizes distributed at the regional and national levels of the competition. Official registration for the Challenge ends October 7, 2011.

Students, teachers, and principals are encouraged to register to participate at http://homeenergychallenge.org/. Participation in AHEEC is broken into two parts, the Home Energy Challenge and the Energy Fitness Award. Each is designed to encourage students to learn about science and home energy savings. Visit the website for more details and updates.

Future Engineers Competition

The next generation of top engineers may be in your classroom. To help you encourage them—and educate all of your students about science, technology, engineering, and mathematics (STEM) —The National Engineers Week Foundation offers a student competition and a free website.

In the 2011–2012 National Engineers Week Future® City Competition, sixth, seventh, and eighth graders across the country team with engineer-volunteer mentors to create their visions of the city of tomorrow. Future City combines problem-based learning with computer simulation to address real-world issues and national and state academic content standards. You can learn more and pre-register your students at www.futurecity.org; the registration deadline is October 31, 2011.

Budding engineers of all ages and their teachers in the United States will find local opportunities to experience engineering at My Discover-e. My Discover-e connects teachers and students to engineering-related resources in their area through maps, event calendars, event searches, and an engineer network. The site also highlights engineering achievements and promotes learning about engineering inside and outside the classroom.

from NSTA Express, July 18, 2011
National Institute on Drug Abuse News

The National Institute on Drug Abuse (NIDA) invites you to be part of the second annual National Drug Facts Week (NDFW), a health observance to help teens shatter the myths about drugs and drug abuse and to get factual answers.

Participate in National Drug Facts Week. Work with your students to organize an event or activity to raise awareness and offer teens real, factual information from scientists about drugs and drug abuse. To help you plan, NIDA provides a step-by-step event toolkit with a list of suggested activities as well as free resources such as the 2011 drug facts booklet for event distribution.

Register your event TODAY!
Register your event so NIDA can provide you with additional resources and support, advertise your event nationwide, and connect you with other community leaders in your area.

Win $50,000 for Your School

The Clorox Company’s Power a Bright Future school grant program gives kids the power to grow and transform through playing, creating, and exploring inside and outside the classroom. Nominate your school by October 17 for the chance to win a $50,000 grand-prize grant to help fund a new or ongoing program. Schools also have a chance to win $25,000 grants in each of the Play, Create, or Explore categories. One school will also receive a special judges’ choice grant of $25,000.

For more information and to nominate your school, visit www.PowerABrightFuture.com/NSTA.

Search for Leading Edge School Districts

As a part of an initiative called Participatory Learning in Schools: Leadership and Policy, the Consortium for School Networking (CoSN) is conducting a nationwide search to identify innovative “leading edge” school districts that use digital media, social media, Web 2.0, and student owned mobile devices at school.

Please read the Leading School Districts Cadre information, and submit your application by Sept. 30 to become part of this program. If you are selected, you will come together with other district leaders to form a “cadre” and participate in an online Community of Practice (CoP), drawing support, information, and resources from peers who share similar goals. CoSN will also distill the concrete “real world” knowledge, experience and best practices from the participating district teams to assist others who wish to move in the same direction. Your help is needed in identifying districts that embrace participatory learning. If you have any questions or need further clarification, please contact Ariadna Mahon-Santos at amahon-santos@cosn.org.

The World of 7 Billion

The World of 7 Billion campaign is an educational resource for both students and teachers. Human population is set to hit seven billion by the end of 2011. As we approach this immense milestone, it is important to understand how we got here, analyze the impact of our choices, and realize that our decisions can and will impact the future. See http://www.worldof7billion.org/ or http://www.populationconnection.org/site/PageServer for ideas and lesson plans.
River of Words

What is River of Words? An annual, international, FREE poetry and art contest on the theme of watersheds. Anyone aged 5 to 19 in grades K-12 may compete in the River of Words contest. Entries are accepted year-round, but the contest deadline is December 1, 2011.

Submit an entry to River of Words by visiting the website - www.riverofwords.org - for complete contest information.

Submitters may enter on their own or through schools or other organizations. Eight Grand Prize winners - four in poetry and four in art, in four different age categories-are chosen from the US entries. Winners are announced each April at a gala event at the San Francisco Library. The Grand Prize and International winners win an all-expense paid trip to Washington, DC to attend the Award Ceremony at the Library of Congress. River of Words also publishes an annual poetry book of winning submissions.

Two Contests in One!
Entries not chosen as finalists or grand prize winners in the international contest are returned to IOWATER, Iowa’s volunteer water quality monitoring program, where they are judged in an Iowa statewide River of Words contest. Iowa contest winners are chosen in May.

Cassini Scientist for a Day

The Cassini spacecraft's three imaging targets (i.e., three essay contest topics) have been announced on the website: http://saturn.jpl.nasa.gov/education/scientistforaday10thedition/

The three targets are: 1. Hyperion, 2. Rhea and Titan, and 3. Saturn. Computer simulated pictures of these three targets and videos with detailed information are posted on the above website.

You can download and print a flyer with these targets at: http://saturn.jpl.nasa.gov/files/FLYER_2011_aug11.pdf

Students choose which of the three targets they think will yield the best science, and write an essay explaining their choice. The contest is open to students in grades 5-12 (approximately ages 10-18).

The essay contest deadline is October 26, 2011 at 12:00pm Pacific Time. Essays of up to 500 words will be accepted. Students should enter the contest via their teacher.

U.S. teachers will be able to enter their students’ essays in the contest via an online form that will be posted on the above website. Winning essays will be posted on the Cassini website.

National Chemistry Week 2011 -- October 16-22

Theme: “Chemistry—Our Health, Our Future!”

Explore the positive impacts of chemistry as it relates to nutrition, hygiene, and medicine.

National Chemistry Week (NCW) is a community-based annual event that unites American Chemical Society’s local sections, businesses, schools, and individuals in communicating the importance of chemistry to our quality of life.

Each year National Chemistry Week reaches millions of people with positive messages about the contributions of chemistry. Join in the celebration of NCW 2011! Visit www.acs.org/ncw for more information.
The Search For an Outstanding Biology Teacher

Every year, the Outstanding Biology Teacher Award (OBTA) program of the National Association of Biology Teachers (NABT) tries to recognize an outstanding biology educator (grades 7-12) in each of the 50 states; Washington, D.C.; Canada; Puerto Rico; and overseas territories. Candidates for this award do not have to be NABT members, but they must have at least three years public, private, or parochial school teaching experience. A major portion of the nominee's career must have been devoted to the teaching of biology/life science.

Candidates are judged on their teaching ability and experience, cooperativeness in the school and community, inventiveness, initiative, and student-teacher relationships. OBTA recipients are honored at a special event during the NABT Professional Development Conference sponsored by BIOZONE and receive microscopes from Leica Microsystems, Inc., and certificates and a complimentary one-year membership from the NABT.

To nominate a colleague or yourself, follow the nomination instructions found in the Awards and Opportunities section of the NABT website at www.nabt.org. The deadline for 2012 nominations is March 15, 2012. For more information, contact Iowa's OBTA Awards Directors Doug Herman herman.doug@iccsd.k12.ia.us, or Mike Zeller, mzeller@iastate.edu.

NASA Websites

The Space Place Talk Show (spaceplace.nasa.gov), NASA’s award-winning web site for kids, presents the Space Place kids hosting their talk show live from the Space Place Clubhouse. Their guest for this, the 10th episode, is Merav Opher, an astrophysicist now working on the Voyager Mission. The goal of “Space Place Live!” is to introduce kids to the human, down-to-Earth side of real scientists and engineers working in the space program. Each guest is presented as a passionate and accomplished role model for every child interested in science or engineering. This episode includes several short videos that Merav narrates explaining the heliosphere, solar wind, and the Voyager Mission. Merav also talks about her career and her other passions.

SciLinks

A sea of critical real-time weather data floods into the satellite’s memory grid! A storm full of tornadoes is brewing! The Sun is about to blast out a huge solar flare that could destroy satellites! To save lives and protect expensive instruments, the GOES-R weather satellite must not lose any of the data it is collecting. You can help! The new Satellite Insight game on SciJinks challenges you to keep GOES-R’s incoming data “buffer” from overflowing. Keep it going as long as you can and try to beat your best time! Check it out at http://scijinks.gov/satellite-insight.

Climate Kids

With frogs leaping and butterflies fluttering, kids will race to the Finish in the new “Leaps and Flutters” game at Climate Kids. Along the way, this game (modeled after Chutes and Ladders) presents opportunities to help the environment by such acts as recycling an aluminum can, or to not help the environment by, oh, say, leaving the refrigerator door open too long. Good deeds leap the player up a row or two, not-so-good deeds send the player a-fluttering back down. All the actions—helpful and not—are explained in the accompanying article. And why should we care about frogs and butterflies anyway? That, too, becomes clear. Visit http://climate.nasa.gov/kids/games/leapsandflutters.
Urban astronomers are always wishing for darker skies. But that complaint is due to light from Earth. What about the light coming from the night sky itself? When you think about it, why is the sky dark at all?

Of course, space appears dark at night because that is when our side of Earth faces away from the Sun. But what about all those other suns? Our own Milky Way galaxy contains over 200 billion stars, and the entire universe probably contains over 100 billion galaxies. You might suppose that that many stars would light up the night like daytime!

Until the 20th century, astronomers didn't think it was even possible to count all the stars in the universe. They thought the universe was infinite and unchanging. Besides being very hard to imagine, the trouble with an infinite universe is that no matter where you look in the night sky, you should see a star. Stars should overlap each other in the sky like tree trunks in the middle of a very thick forest. But, if this were the case, the sky would be blazing with light. This problem greatly troubled astronomers and became known as “Olbers’ Paradox” after the 19th century astronomer Heinrich Olbers who wrote about it, although he was not the first to raise this astronomical mystery.

To try to explain the paradox, some 19th century scientists thought that dust clouds between the stars must be absorbing a lot of the starlight so it wouldn’t shine through to us. But later scientists realized that the dust itself would absorb so much energy from the starlight that eventually it would glow as hot and bright as the stars themselves.

Astronomers now realize that the universe is not infinite. A finite universe—that is, a universe of limited size—even one with trillions of stars, just wouldn’t have enough stars to light up all of space.

Although the idea of a finite universe explains why Earth's sky is dark at night, other factors work to make it even darker.

The universe is expanding. As a result, the light that leaves a distant galaxy today will have much farther to travel to our eyes than the light that left it a million years ago or even one year ago. That means the amount of light energy reaching us from distant stars dwindles all the time. And the farther away the star, the less bright it will look to us.

So, because space is expanding, the wavelengths of the light passing through it are expanding. Thus, the farther the light has traveled, the more red-shifted (and lower in energy) it becomes, perhaps red-shifting right out of the visible range. So, even darker skies prevail.

The universe, both finite in size and finite in age, is full of wonderful sights. See some bright, beautiful images of faraway galaxies against the blackness of space at the Space Place image galleries. Visit http://spaceplace.nasa.gov/search/?q=gallery.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the NASA. This Hubble Space Telescope image of Galaxy NGC 4414 was used to help calculate the expansion rate of the universe. The galaxy is about 60 million light-years away. Credit: NASA and The Hubble Heritage Team (STScI/AURA)