Austin Science and Engineering Festival invites you to discover YOUR world

Interested in creating your own science experiment or engineering project? Participate in the Austin Energy Regional Science Festival, a science competition for Central Texas students in grades 1-12. The Austin Energy Regional Science Festival encourages and rewards innovative student research. It also provides scientists, engineers, and other professionals a chance to volunteer in the community.

The USA Science & Engineering Festival is gearing up to answer this call to action by establishing the Nifty Fifty, a group of noted professionals who will fan out across the Central Texas area in October to speak about their work and careers at various middle schools and high schools. The Nifty Fifty will feature individuals who have made a major impact on the field of science and engineering either through research or through other fields such as law, business, government and public service.

For more information, Contact: Natalia Leos (407) 435-1747, natalia-denise@aol.com.

From the HUN-STEM Calendar:

- Register for CAST!
- Museum District Free Day!
- Space Center Houston Educator Open House!
- HMNS Distinguished Lectures
- HMNS Sugar Land Exhibit: Robots!
- Go to HUNCal to learn more!

Inside this issue:

- Biomimicry Institute
- A+ Middle School
- EEE Updates
- STAT CAST
- Another example of the Best of HUNBlog
- About HUNSTEM
Biomimicry Institute

The Biomimicry Institute is looking for ways to get involved in Houston’s STEM community.

Biomimicry is an emerging discipline that explores the materials, processes and functions of nature for clues to solving human problems. The approach is being used by companies around the world as a strategy to guide the sustainable design of a wide range of products, from energy efficient buildings and self-cleaning paints to brighter electronic displays and powersipping impellers and fans.

The mission of The Biomimicry Institute is to nurture and grow a global community of people who are learning from, emulating, and conserving life’s genius to create a healthier, more sustainable planet.

Keep your eyes open to HUNSTEM Twitter updates and future HUNLetters to keep track of the Biomimicry Institute’s plans.

Check out Jenine Benyus talk about biomimicry on TED.

Houston A+ Challenge Assembles Team to Assist Middle Schools in the Challenge Network

Houston A+ Challenge is pleased to welcome six experienced educators to the A+ team, to work with students, families, teachers and school leaders in the Challenge Network. This ambitious and innovative new initiative, which will launch this fall in five Houston-area middle schools, aims to significantly increase the numbers of economically disadvantaged students in the Houston area who are prepared for postsecondary success.

The Challenge Network is a multi-year partnership between Houston A+ Challenge and five local school districts – Aldine, Alief, Goose Creek, Humble and YES Prep Public Schools. The program is rooted in research indicating that current levels of academic proficiency are insufficient and that higher levels of achievement are needed to prepare students for post-secondary success.

If the pilot cohort of Challenge Network schools achieve their goals, A+ plans to expand the program to many more schools and local districts in the coming years – to reach up to 50,000 children in 70 schools within six years – thus transforming the lives of economically disadvantaged students and of our community as a whole.

For the 2010-11 school year, each Performance Coach will be based on-site at one of the five Challenge Network middle schools. The entire team will report to the A+ Director of School Performance, who will also work with the A+ Director of Leadership to provide leadership development to administrative teams in the Challenge Network. The new members of the A+ team are:

Tom Monaghan, Director of School Performance

Torrey Conerly, Performance Coach

Jennifer Fowler, Performance Coach

Cicely Greene, Performance Coach

Jennifer Mascheck, Performance Coach

Michael Webster, Performance Coach

For more information, go to houstonaplus.org
The Texas Commission on Environmental Quality's Non-point Source Program (NPS) is currently accepting grant applications for projects that will assist the state in implementing its NPS program. For more information about the grant, please visit: [http://www.tceq.state.tx.us/compliance/monitoring/nps/grants/grant-rfga](http://www.tceq.state.tx.us/compliance/monitoring/nps/grants/grant-rfga). Please direct inquiries about the RFGA by e-mail to Arlene Youngblood (ayoungbl@tceq.state.tx.us) and put “Attn: Arlene Youngblood” in the subject line, or phone Ms. Youngblood at 512-239-0383.

Eligible projects will assist the state in implementing its Texas Nonpoint Source (NPS) Management Program. Top priority will be given to projects that have a high probability of:

- restoring NPS-impaired water bodies; or
- achieving significant pollutant load reductions towards protection or restoration.

All projects should address NPS pollution from sources other than agriculture or forestry. Applications must be received by the TCEQ no later than 3:00 p.m. CST on Friday, October 1, 2010.

EEE Updates

The Texas Commission on Environmental Quality's Non-point Source Program (NPS) is currently accepting grant applications for projects that will assist the state in implementing its NPS program. For more information about the grant, please visit: [http://www.tceq.state.tx.us/compliance/monitoring/nps/grants/grant-rfga](http://www.tceq.state.tx.us/compliance/monitoring/nps/grants/grant-rfga). Please direct inquiries about the RFGA by e-mail to Arlene Youngblood (ayoungbl@tceq.state.tx.us) and put “Attn: Arlene Youngblood” in the subject line, or phone Ms. Youngblood at 512-239-0383.

Eligible projects will assist the state in implementing its Texas Nonpoint Source (NPS) Management Program. Top priority will be given to projects that have a high probability of:

- restoring NPS-impaired water bodies; or
- achieving significant pollutant load reductions towards protection or restoration.

All projects should address NPS pollution from sources other than agriculture or forestry. Applications must be received by the TCEQ no later than 3:00 p.m. CST on Friday, October 1, 2010.

Eligible projects will assist the state in implementing its Texas Nonpoint Source (NPS) Management Program. Top priority will be given to projects that have a high probability of:

- restoring NPS-impaired water bodies; or
- achieving significant pollutant load reductions towards protection or restoration.

All projects should address NPS pollution from sources other than agriculture or forestry. Applications must be received by the TCEQ no later than 3:00 p.m. CST on Friday, October 1, 2010.

Announcing........
The 4th Annual 2011 Houston Environmental Education Summit!

Are you interested to participate, present, exhibit or volunteer? If so, plan to attend the next EEE meeting where we will discuss dates, themes, the agenda, tasks, etc.

The quarterly summer meeting of the Environmental Educators' Exchange (EEE) will take place on:

Wednesday, August 4th, 2010
5:30 PM to 7:30 PM

Our host will be EEE member organization, Houston Tomorrow.

Also, Marya Fowler, the returning Education Director for the Austin office of National Wildlife Federation will join us to discuss her new role in NWF education programs in the Houston-area including the upcoming Summit.

Meeting Agenda:
5:30 PM Networking and Refreshments
5:50 PM Presentation by Host: Houston Tomorrow
6:10 PM EEE Business, Announcements
6:40 PM Planning for Houston Environmental Education Summit 2011
7:30 PM Meeting wrap-up

All are welcome to attend, refreshments are provided. Come meet Marya as we welcome her to EEE and the Summit planning team.

Please RSVP Edith Smith at smithedith@aol.com.

Keep your eyes open for updates about the conference and plans on the EEE website:

[EEEHouston.org](http://EEEHouston.org)
Get inside the best science education that Texas has to offer at the Conference for the Advancement of Science Teaching (CAST) 2010 when we bring science to the city in Houston, Texas November 11-13. Whether you're a science teacher, an administrator, or even a business executive, you can find an exciting opportunity to grow at CAST. We are also pleased to announce that Sponsorship, Advertising, and Exhibitor opportunities are still available for this year’s conference.

Do you want new teaching strategies, learning activities and engaging labs aligned to the TEKS for your grade level? CAST will help you help your students. We’ve got over 550 options (and 100 more sessions than 2009!), each one counting for your continuing education credits.

Do you just want a break from your daily routine and a chance to enjoy science in another city? We’re offering field trips to the coast, the Houston Museum of Natural Science and even the zoo!

Have you ever wished you could see famed oceanographer and explorer Dr. Robert Ballard, live, in person? You will in one of the largest opening ceremonies in CAST history.

It’s now easier than ever to access the workshops you want. Fill up your entire day with learning by attending our new “Science JAM Sessions,” top sessions for larger audiences including Kenn Heydrick of the Texas Education Agency.

The conference will begin Thursday, November 11th, and we’re going to kick it off with a grand “Science in the City” reception, sponsored by our partners at Chevron. Our 400+ exhibitors will also keep their booths open during the reception for you to enjoy.

Registration for the conference begins August 15! The Early Bird Discount is only available until September 24, at the low cost of $115.

CAST, now in its 53rd year, is hosted by the 7,000 member non-profit association, The Science Teachers Association of Texas. CAST is still planned and primarily run by volunteers and is the largest state science conference in the nation. We invite you to be part of our network as a member, a conference attendee, a sponsor or just a friend on Facebook. It is the combined work of all science educators and suppliers in the state of Texas to provide resources for the future science leaders of tomorrow.
The Best of HUNBlog

May 8, 2006
I have a bone of contention. Why is every word chosen to represent an idea automatically treated as a label? Why do we argue semantics over different perspectives on certain words? Particularly when we agree more than we disagree, why do we spend so much time arguing over minor details?

Here are a few examples:

Science literacy - Is science literacy "basic facts" that the scientifically literate should know (Raymo 1998, Trefil 1996), a list of "behaviors that serve as guidelines for interpreting the functions of science/technology (DeHart Hurd 1998)", "successful information seeking behavior" (Sapp 1992), "scientific awareness" (Devlin 1998), or "scientific ways of knowing" (Maienschein 1999)?

Are you kidding me? Why is it this so hard? Science literacy is the ability to solve problems by comparing results against a known (controlled) scenario. That's what we do, as scientists. It's what anyone trying to figure out an allergy tries to do, or anyone trying to decipher public information on an issue before voting.

Go ahead, wiggle this definition all you want. You can't change the basic definition by citing variations of this process and claiming uniqueness. The strength of the definition is in its flexibility.

In education, we should encourage ANY teaching that promotes higher level thinking skills. The skills are what make literacy. You are not literate in English due to vocabulary. You are literate due to comprehension. The same is true for Computer programming. You can define parts of the computer all you want, but you aren't literate unless you can write code that works. You can know all of the definitions of science you want, but you are not literate unless you can apply your knowledge to solve NEW problems.

As a college professor, I would much rather have a student who can think over one who knows a lot. I can teach the content, if the student can understand the concepts that place the content into an explanatory framework. Without the ability to understand the concept, no amount of hammering away at content will ever succeed.

Is this so hard? Let's relax on the debate over semantics. We agree on most of this. Let's look for points of agreement that we can work on constructively rather than for how we differ.

Constructivism - Constructivism says that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences. It is a metacognitive strategy. We can debate the research. I can cite evidence of success, and others can cite evidence of failure. The application of constructivism runs the gamut from unguided field trips to strict PBL. The basic idea is pretty simple, and it doesn't have to be complicated.

Again, I would like to emphasize that ANY curriculum that allows a child to form their understanding of a topic from their own EXPERIENCE is constructivism. This is good. A lesson doesn't have to be completely hands-on. It doesn't have to be unguided, at all.

Children will NOT learn, however, if they don't formulate their own understanding.

You cannot have Science Literacy without Constructivism

Go ahead, challenge me on that one. I'd love to discuss this further. But first, one last nit to pick.

Inquiry - It's good to ask questions. Any time a student is asked a question they have to think. You can't guide constructivism without inquiry. You can't achieve science literacy without inquiry. Inquiry is asking questions. Let's keep it that simple.

Ask a question to start a lesson.
Ask a question to guide a lesson.
Ask a question to assess understanding. Ask a question to close a lesson. I don't care where you ask the question. Ask questions.

Inquiry emphasizes that we don't know everything. It emphasizes that we should be curious. It emphasizes our need to seek out answers. Inquiry is how we should live our lives. Every day. For the rest of our lives.

"Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius—and a lot of courage—to move in the opposite direction." - E. F. Schumacker

"Making the simple complicated is commonplace; making the complicated simple, awesomely simple, that's creativity." - Charles Mingus

"Everything should be made as simple as possible, but not simpler." - Albert Einstein

technorati tag: teaching-carnival
About HUNSTEM

We believe that inquiry-driven, problem-based STEM (science, technology, engineering and mathematics) lessons are the best teaching method to attain increased science literacy.

HUNSTEM promotes the use of inquiry-driven, problem-based science curricula in all classrooms in the Houston area.

HUNSTEM encourages problem-based curricula through collaboration between teachers, school administrators, curriculum directors and developers, and the ISE and professional resources of the Houston community.

HUNSTEM spreads the message of inquiry-driven, problem-based science throughout the Houston area by establishing a vanguard of effective teachers who will encourage and support beginning and science-shy teachers in their schools.

HUNSTEM provides the resources and training for all K-12 teachers of science to become more confident and effective.

HUNSTEM builds professional networks in each area of STEM in the Houston area. HUNSTEM connects these organizations to teachers and families more effectively than they can do through their own efforts.

To contact HUNSTEM,
E-mail Dr. Brad Hoge,
Director: hoge@uhd.edu
Call: (713) 221-8289
Or Write:
HUNSTEM
University of Houston—Downtown
One Main St., Houston, TX 77002-1001