

INFORMALLY SPEAKING

The Newsletter of the Informal Science Education Association of Texas

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The mission of the Informal Science Education Association (ISEA) is to improve science education in Texas by supporting partnerships among informal and formal educators.

ISEA - 10 YEARS LATER

As we celebrate the 10 year anniversary of ISEA, a word from one of the original members..

I just returned from Portland where I was asked to give a keynote address to a budding statewide group of informal educators. This gave me the opportunity to reflect on the last ten years of ISEA. What quickly occurred to me was ISEA's mission, *to support partnerships among informal and formal science educators to improve science education in Texas*. This statement has allowed us to stay focused in our work, the important role of systemically supporting educational improvement in Texas.

Mark St. John and Deborah Perry wrote, "Science museums and other informal science education institutions are places where people can meet science – informally, directly and on their own terms. In contrast, in schools, people encounter science formally, indirectly and on the school's terms." ISEA has helped us to create a bigger, broader learning community in Texas. Through ISEA we now have a Board seat on

the Science Teachers Association of Texas. At every point along my personal journey representing ISEA, I have been met with collegial respect by teachers, administrators, university faculty, and community advocates all looking to improve our education system in Texas.

Some of the lessons I have learned along the way include:

- Informal educators in the state feel isolated – ISEA has helped form a community where informal educators are part of the larger education landscape and have helped build a network of supportive colleagues across the state.
- The formal education community has embraced us – As mentioned above, we are not outsiders to the system, but part of it.
- Stay with your pedagogy – ISEA has taught us that as informal education institutions we should stay true to our missions and not try to program outside our expertise.
- Bring a national perspective – ISEA has allowed us to think globally by bringing in national leaders every year to our conference.

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MESSAGE FROM THE PRESIDENT

First I must say how pleased I am to be a member of ISEA. This is the most interesting, dedicated and intelligent group of people I have ever encountered in one organization. That makes it all the more amazing that I am serving as president! As most wonderful things are, the timing of this role is better than anyone could have planned. My graduate studies have sequestered me in academia away from the delightful and challenging work we call informal science education.

However, they are not nearly as time consuming as working in the field. So at this moment in my career, I have the time to give to ISEA and the desire stay connected with the profession.

Besides my personal good timing, this is an important time for informal education as a whole. Exciting things are happening in science education that are drawing attention to the importance of the informal educators' resources. For instance, the

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- Your statewide context is unique – Having great partners like the Texas Education Agency and the Charles A. Dana Center at UT – Austin has helped us understand the complex and shifting formal education landscape.
- Grassroots is okay – As an Association, we've survived on a shoe-string budget, but the value we bring to our members is evident by the attendance at our annual meeting each year.
- Participating institutions receive benefits – Members of ISEA have taken what they have learned and improved and added new programs back home, which gives informal science institutions a great reason to stay involved.

So what does the next 10 years hold for ISEA? Great new projects, like Out of the

Classroom, will grow to link more and more informal sites to support the work of schools. New statewide networks are developing in Oregon, Arkansas, and Oklahoma to join existing networks in Texas, North Carolina, and Massachusetts. In years to come, these networks will connect and begin to learn from each other. And finally, ISEA will always offer that quiet, reflective time and place through its Annual Conference for informal educators from across Texas to meet and think and dream together. And we will continue to make Texas a better and better place for children to learn about science, mathematics, engineering and technology.

*by Charlie Walter
Fort Worth Museum of Science and History*

REFLECTIONS ON 2006

It is an exciting time for ISEA! We started 2006 with a wonderful annual conference at Texas Tech University at Junction. From the inspiring keynote address by Dr. Bonnie Sachatello-Sawyer, to the quality of the sessions, to the great cuisine prepared by the kitchen staff, it was a memorable experience. The beautiful scenery and secluded location gave us all time to slow down, reflect, and reconnect with friends and our passion for our jobs. We will return to Junction in the coming years!

ISEA has a new look! We adopted a logo this summer after much input from the membership and Board. We all wanted a logo that reflects the diversity of ISEA—type of facilities, disciplines, regions of Texas. But we quickly found that was an unrealistic task! We decided on one icon—a magnifying glass—that suggests science and can be used in a multitude of disciplines, even outside science.

Other initiatives included new revenue efforts, our inaugural strand at CAST (hugely successful!), “Out of the Classroom” implementation, proposed bylaw changes, a draft of a policies and procedures manual, interaction with the Texas High School Project and T-STEM....it was a great year!

We have some changes in Board membership, and I really want to thank the outgoing members for their hard work: Christy Youker, Dorian Reynolds, Janice Sturrock, Martha Griffin, and Amelia Valdez. I hope you will continue to be involved, because you all are so committed and are part of what makes ISEA great. Welcome our new Board members: Jan Wrede-Cibolo Nature Center, Sigrid Clift-UT Bureau of Economic Geology, and Johnnie Smith-Texas State Aquarium. Congratulations to the new members of the Executive committee: Charlie Walter-Fort Worth Museum of Science and History and Debbie Junk-UT Austin. Charlie and Debbie were both members of the Informal Science Action Team, from which ISEA was born. We are in good hands with people who helped make this all happen!

I want to say a special thanks to Sue Shore. She has been our webmaster for a number of years and has done a fabulous job. She has resigned her position as webmaster, but has assured us that she will stay active in ISEA. We will hold you to that, Sue! Thank you so much for all you have done for ISEA.

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PRESIDENT'S MESSAGE, CONT. FROM P.1

Science, Technology, Engineering and Math (STEM) initiative requires an informal, community-based component. ISEA is ideally qualified to facilitate those connections. The ISEA board is staying in close contact with the STEM activities in Texas (T-STEM) so that we can play our part when the opportunity arises. Out of the Classroom, ISEA's collaborative project has teachers and informal sites working together in new and wonderful ways. Last year's successful phase 1 of the project has yielded new insight and inspiration to expand. Funding is being investigated for the next phase;

reaching more teachers and including more sites.

What a wonderful place and time we are in! There is important work to do. And there are important connections to make. As we each march (or scramble) along on our own tasks, let's always remember that we are part of a larger body. The most interesting, dedicated and intelligent people we know are all pulling along with us. We are so fortunate to belong to ISEA.

*by Kiki Corry
Texas State University*

Our new logo!



REFLECTIONS, CONT. FROM P. 2

Roger Stryker has graciously accepted the webmaster position. If you don't know Roger, let me tell you something. This is a MAJOR score for ISEA! Roger, we love you and appreciate your support.

Thanks to Margaret Russell for continued effort in maintaining our listserve and consistently sending out monthly (and more!) information. Thanks to Linda Kunze for maintaining our membership files, providing Margaret current information, and offering some creative marketing tools for ISEA which I

hope someday we will be able to implement. Your commitment is very much appreciated. And finally, thanks to Vanessa Westbrook for your continued leadership.

2006 was a very rewarding year, and thank you all for your awesome support. I'm very proud to be a part of ISEA. Good luck, Kiki—2007 is going to be great!!

*by Tara Schultz, Past President
Texas State Aquarium*

Visit ISEA online

www.
texasinformalscience
.org

MATH AND MUSEUMS IN THE NEWS!

ARTICLE REVIEW

Measuring Growth on a Museum Field Trip: Dinosaur Bones and Tree Cross Sections by Maija Sedzielarz and Christopher Robinson, 2007 Teaching Children Mathematics, NCTM. Pp 292-298.

This article captures efforts by The Science Museum of Minnesota to infuse mathematics into their educational programs. They were supported in part by the Math Momentum in Science Centers project. A National Science Foundation grant supported this three-year long project designed to support math in science centers. ASTC and TERC (a math research institution) co-led the project.

Incidentally, two ISEA members, the Houston Children's Museum and the Fort Worth Museum of Science and History were also a part of the Math Momentum project.

In the article, authors tell us that they used a natural connection between what their museum has on hand and math. Since the museum has somewhat of a focus on paleontology and a curator of paleontology on site, the mathematics of calculating size and growth patterns of both plants and animals seemed like a good fit.

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(A PDF of the article can be ordered through www.nctm.org.)

OUT OF THE CLASSROOM UPDATE

During Summer/Fall of 2006, the first phase of ISEA's Out of the Classroom Project was begun in Austin. The mission of the project is to create and support communities of learning between secondary level teachers and informal educators through the development of a web-based resource designed by teachers for teachers. Participating institutions included the Austin Nature and Science Center, TPWD McKinney Falls State Park and LCRA McKinney Rough Nature Park. This first phase focused on 8th grade.



Teacher Site Visit at the Austin Nature and Science Center. Debbie and Janice facilitate.

Plans for Phase 2 in Austin include adding 3 additional sites and 7th grade by Fall 2007.

<http://www.statweb.org/outoftheclassroom/>

For more information contact:
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Thanks to the Austin Community Foundation for supporting Phase 1!



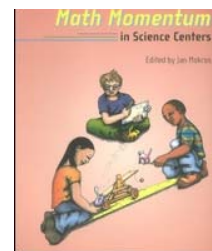
MATH AND MUSEUMS, CONT. FROM P. 3

When students arrive at the museum for their "Mathematics Field Trip", they are divided into groups of 3 or 4 and given a "MathPack." Students use the materials in the pack to complete several activities on site. What I liked about the description of the activities was that students had the freedom to choose what sort of measuring tool, with a variety of precision to complete the task as well as how to measure the objects. "As the students compare results within their group or with other groups, they see for themselves the needs for multiple measurements of the same object" (p.293). This kind of thinking on the part of teachers and curriculum designers about student thinking is key to an inquiry type lesson involving mathematics.

Authors also describe in the article different strategies for estimating measurement that they and the teachers observed during the activities. The museum curator talked to the students about her career as a scientist and the importance of mathematics. Finally teachers reported that they were able to assess their students' increase in knowledge about math and measurement in the context of the museum field trip. They noticed that the use of small groups and the museum setting itself motivated the students who would normally act timid or complacent in the classroom setting.

One product produced as a result of this work in Minnesota, is *Measuring Growth MathPacks*, which can be accessed through the web: www.smm.org/mathpacks. Here, teachers get suggested field trip plans as well as pre and post activities. In my experience with planning exhibits and activities for math at museums, this project and website rank high on my list! Also as a result of the Math Momentum project, be on the lookout for a book written by two of the project leaders,

Jan Mokros and Richard Nemirovsky titled, *Math Momentum in Science Centers*, available through the ASTC website.



In conclusion, authors advise ... "you could ask the educators at your local museum to help devise measurement challenges for your students" (p.298). So be ready to take on this challenge!

Review by Debbie Junk, PhD,
Math Education, UT Austin

CAST 2007

As an official affiliate of the Science Teachers Association of Texas (STAT), ISEA has great opportunities for a strong presence at STAT's annual conference, CAST (Conference for the Advancement of Science Teaching). CAST 2007 will be in Austin November 15-17 and is celebrating its 50th year.

Reception

ISEA and the Texas Science Education Leadership Association (TSELA) co-host a reception, typically at an informal education facility on the Wednesday evening prior to CAST. This year we have been invited to hold the event at the Austin Children's Museum. Members of TSELA include science coordinators, curriculum specialists, and administrators, so this is a great opportunity for ISEA members to interact with that audience.

Session Strand

Each affiliate hosts a "strand" of sessions on the Friday of CAST, which are advertised on a separate page in the CAST program. Last year, each ISEA session was filled to capacity—we even had to turn people away. Each session was hands-on and interactive, and we had great content diversity. Some teachers stayed for the entire day. If you are interested in presenting a

session as part of the ISEA strand, please email Tara Schultz at ttschultz@txstateaq.org before March 31st. If we have a lot of interest, we may be able to request two rooms. ISEA sessions will be submitted as a group by Tara to ensure they are identified as an ISEA strand session.

Activity Book

Have a great activity to share with teachers? Please consider submitting it for the second edition of "A Closer Look," which will be available at CAST 2007.

Exhibit Booth

ISEA participates in the exhibit hall each year. We offer information about our members and our organization, and have some items to sell for fundraising efforts. This year we plan to raffle a very large container full of very cool stuff from informal sites. Look for a call for "cool stuff" in late summer.

We need help for all of these activities! Please contact Kiki or Tara for details.



Kiki and Tara at CAST 2006

Go to
<http://www.statweb.org/CASTAustin/index.html>
for more information.

ISEA is a proud affiliate of:



Conference for the Advancement of Science Teaching,

"Celebrate the Past. Imagine the Future"

November 15-17, 2007

Austin, Texas

Join us in Austin to enhance your content knowledge and expand your understanding of effective science instruction while participating in the country's largest state science conference.