

Informally SPEAKING

The Newsletter of the Informal Science Education Association of Texas

September 2004

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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.

Learning happens in Port A!

When you think Port Aransas, you think “Spring Break,” right? Well, not this year, not for me. But, I do still think fun! This was my first time to attend an Informal Science Education Association conference. Not only did I attend the conference, I also had the opportunity to present a session. I have been to many conferences and I have presented at a few, but this was definitely a unique experience. This is my third year working with an informal science center, the McGovern Museum of Health & Medical Science. My tenure at the Museum has been one of growth and fulfillment. Attending the ISEA Conference made that very clear to me.

The ISEA is a very dedicated, compassionate group of educators. I was impressed with the eagerness of the attendees to extend their learning and to share with others. The intimate size of the

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Dr. Tommy Darwin, Director of the Professional Development and Community Engagement Program at UT-Austin, spoke at ISEA’s Annual Conference.

FOCUS ON Collaboration has its benefits

By now we have all been told the importance of collaborating within the science education community, specifically between formal and informal education. The National Science Teacher Association’s position statement on informal science education (1998) “recognizes and encourages the development of sustained links between the informal institutions and schools.” The National Science Education Standards (National Research Council, 1996) also suggest creating collaborations that link “the best sources of expertise” with “the experiences and current needs of the teachers.”

Collaborations can come in many forms, but are most effective (and produce the most benefits) when the participants have a long-term relationship based on communication, trust, and a shared vision. Collaborations between informal sites and schools can have various purposes such as designing an exhibit, developing software, or creating curriculum. To improve science education in both the school and the informal site, collaboration is particularly important when developing field trip programs and the curricular materials to be used in classrooms before and after field trips.

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Visit ISEA online:

www.statweb.org/isea

Conference commentary

My three days at the conference were a thrill and a lesson for all the senses. Not in recent memory have I met so many committed, passionate people-of-action in one place in a setting and mode of interaction both intimate and all encompassing. (Plus fun. Can I just say I really dug everything about the conference, especially the people and forward-thinking projects, methods and discussion? Yes, and the ocean does a body good as well.) I took home a lot more than practical knowledge and ideas to apply to both work and community. I was galvanized and inspired to break new ground and continue to tackle surrounding issues that clearly seemed near to the hearts of many besides my own.

I have to say it was tough to decide which sessions to attend and which had to be missed. (I even abandoned the enticing excursion on the Katy in order to fit one more session in.) Dr. Ted Kahn of DesignWorlds and the Science Collaboratory captured my imagination and offered a promising model for expanding delivery of informal science which seems applicable to almost any discipline and academic level. I think the collaborative process and interface he presented is an exciting step into a future that holds dynamic linkages between classroom and learning venues that break free from the limitations of distance, time, and funding. I'm glad that technology came into play at the conference and that it promises a possible revolution in the ways content is determined in the classroom. There seems to be great potential not only for exchange within the state but eventually national and international exchange as well. I look forward to how this project comes together and contributing in some way.

Dr. Tommy Darwin provided much food for thought in the essential tools of communication and motivation. This directly applies to the exhibits and content we present in state parks. His insights into storytelling create a complementary map to the interpretive methods we use in our planning and design process.

I especially enjoyed the hands-on activity and discussion in the smaller sessions of the Blue Room. Kathy Ward gave a wonderful presentation of the GLOBE program with lots of goodies to take home. I plan to explore adapting this in-

novative program into the Austin Nature and Science Center Discovery Lab. I and another master naturalist are working to improve ways kids and adults can interact with and be enriched by the lab. The session with Brent Lyles on Intelligent Design and Creationism not only educated me but brought out candid discussion on a difficult topic. I think it's important (and bold) that this touchy subject is addressed and give credit to the people in attendance for the productive conversations that were started if not fully carried out. We definitely could have talked for hours, and the video excellently portrayed the different sides of the issue.

It's difficult to capture in one paragraph how Texas Parks and Wildlife can benefit from what was presented at the conference. In broad terms, a lot has to do with adopting the spirit of the conference itself – open exchange of ideas and viewpoints across disciplines plus collaboration and receptivity to new ways of doing things – a challenge, suffice to say, in the framework of a state agency. What stands out from the sessions and people I got to know is the importance of partnerships and pooling resources. Dr. Kahn and Dr. Darwin brought this idea into focus with their shared metaphor of a community garden. I see this concept very much at work in the network of relationships grown and nurtured within the ISEA community and also in how the EE certification process appears to have been established. Similar opportunities exist to leverage the resources and venues within TPWD as well as in mutual benefit with that of other institutions and organizations. I've already had an opportunity through the conference to introduce one such potential partnership to TPWD leadership. In my immediate sphere, I'd like to identify ways that my branch of Interpretation and Exhibits in the division of State Parks can work more closely with the Education Branch residing within the Communications Division. Currently there are no formal protocols or established cultural expectations of working together. The conference made more transparent the many areas we can learn from and support each other, namely through the recognition of our overlapping aims and audiences. The next step will be laying the groundwork to incorporate the practical

Focus on: Collaboration has its benefits, *cont. from p. 1*

However, these types of long-term partnerships do not happen often enough. Collaboration takes a lot of time and energy. Also, differences in organizational culture can hinder communication. Despite whatever barriers may be preventing you from participating in more collaborations, it is important to realize the multitude of benefits you and your institution will likely receive from close partnerships with teachers and their schools.

As part of a yearlong qualitative case study of a collaboration between school teachers, informal educators, scientists, and an educational researcher (see the full report for the methods used), I examined the benefits gained during the collaborative experience. These positive outcomes included:

- The informal site was used more effectively because of the combination of the informal educator's knowledge of the site and the formal educators' input of their goals and their students' needs.
- The field trip was more effectively integrated into the school curriculum because the classroom teachers had a better understanding of the field trip content.
- The students gained cognitively, emotionally, and socially from a better planned field trip experience, which was fully integrated into the school curriculum.

In essence, what resulted was a truly effective field trip that was fully integrated into the school curriculum and led to successful learning experiences for the students. These benefits were the intentional outcomes of the collaboration--they were the goals of the collaboration in the first place. However, there are many more rewards to reap from collaboration besides just a successful, educational field trip experience. In addition to benefiting

the participating institutions as a whole, the individuals that were most closely collaborating also received many unanticipated personal and professional benefits. These included:

- Increased knowledge: This consisted of increased science content knowledge, knowledge about collaborations, knowledge about other practices and cultures in education, and knowledge about how to provide more effective field trip experiences.
- Improved teaching capabilities: Each of the educators was better able to adapt their instruction to different learning styles through the use of varied teaching methods because of a deeper insight and understanding of their own teaching and the teaching of others in science education.
- Enjoyment from the social and creative work of collaboration and the relationships created during the process.

General research on educational collaborations has also demonstrated similar benefits in other partnerships. Clearly there is much more to gain from collaborations between formal and informal education than just an enhanced science education program. The experience may even turn out to be a fun, creative, and social means of professional development for everyone involved. So go out there, make some connections in the schools, collaborate, and enjoy the benefits!

by Amy Robertson, Ph.D.

For a full description of this study and its methods, please see Robertson's complete dissertation, entitled: *A Case Study of Collaboration in Science Education: Integrating Informal Learning Experiences into the School Curriculum*, University of Texas at Austin, 2003.

Conference commentary, *cont. from p. 2*

ideas and thought processes presented at the conference, independently and in collaboration. Lastly, the connections and contact with other informal science providers was particularly rewarding and an integral part of the experience.

I have to express my sincere gratitude

and enthusiasm for the awesome work of the board and volunteers in putting this conference together, and the support and opportunity to participate.

*by Florence Wong
Texas Parks & Wildlife*

WEIRD SCIENCE FACT

In 1996, scientists used the JT-60 reactor at the Naka Fusion Research Establishment in Nakamachi, Japan to achieve the highest temperature ever in a lab: 520 million degrees Celsius.

(From Guinness World Records)

Don't miss the ISEA reception at CAST!

*Wednesday, Nov. 3, 2004
6-9 p.m. at the
Corpus Christi Museum
of Science and History
1900 N. Chaparral Street*

Learning, cont. from p. 1

group and the conference really made a positive difference. We were able to get to know each other better and exchange ideas on a more in-depth level. That, to me, made this a quality experience. I especially enjoyed presenting the session “Engaging Teen Audiences with Drama.” The group in my session was very responsive and gave great feedback. It was one of the better experiences I have had as a presenter.

The most valuable sessions I attended were Tommy Darwin’s session, “Effectively Understanding and Engaging Your Public,” and Vanessa Westbrook’s session on “TEKS/TAKS 101.” Though each presented in different styles, the information shared will definitely provide a guide for me when planning programming at our Museum. I also enjoyed the trip on the Katy research boat. That was a welcome diversion from your general conference activities and a great way to spice up the day.

Overall, the ISEA conference proved to be a unique and valuable experience for me—a small conference with big ideas! It was nice to be a part of such a committed group of educators willing to share and learn together in order to make informal science education a true asset to the community. I look forward to being a part of it and only hope that my contributions to ISEA can be as valuable to others as theirs have been to me.

*by Norelia Reed
John P. McGovern Museum of
Health & Medical Science*

ISEA is a proud affiliate of:



ISEA 8th Annual Meeting

March 30-31, 2005

In conjunction with the
National Science Teacher Association
conference in Dallas, Texas

Wednesday, March 30, 6 - 9 p.m.
at The Science Place

“Conversations with Inquiry”

Keynote: Linda Shore, from
the Exploratorium, San Francisco
and

Thursday, March 31, 8 a.m. - 4:30 p.m.
at the Adams Mark Hotel

“Connecting Through First-Hand
Learning Experiences”

www.statweb.org/isea
for more information

Austin Area Science Education Collaboratory (Update)

The Austin Area Science Education Collaboratory is a science learning and professional development resource that will be co-developed with Austin middle school science teachers and education staff from local museums and nature centers. The purpose of the project is to build a bridge between Austin middle school teachers and the informal science community so that students learn about and maintain an active interest in science through teachers’ use of a web-based aggregate of the best of local informal science centers. The Collaboratory is being modeled after the Bay Area Science Education Collaboratory in the San Francisco Bay area, developed by DesignWorlds for Learning in collaboration with local informal science sites and teachers.

ISEA has partnered with SEDL (Southwest Educational Development Lab) in Austin and has received a starter grant of \$15,000 from the

Austin Community Foundation. Haidee Williams, Science Education Specialist at SEDL, will join Christy Youker in leading the project. ISEA is excited to join forces with SEDL on this venture.

Christy Youker will speak at the ASTC meeting this year (Association of Science-Technology Centers) on a panel presentation about the Collaboratory project in Texas. Participating informal science sites include: The Austin Nature and Science Center, The Lady Bird Johnson Wildflower Center, Wild Basin Wilderness Preserve, The Texas Memorial Museum, the Lower Colorado River Authority, and Texas Parks and Wildlife. The Austin Area Science Education Collaboratory will officially begin professional development workshops in the Summer of 2005.

by Christy Youker, Ph.D.