

## Plenary Speaker

Wednesday, August 6, 2014

8:15 am – 9:15 am

Fieldhouse

### Holly Walter Kerby



**Founder**  
Fusion Science Theater

Holly Walter Kerby turned “water into wine” with her Chemcraft Chemistry Set at the age of seven, an experience that inspired careers in chemistry, education, and theater. Since then she’s worked as an analyst and manager in industry, a research specialist and supervisor in science education research, a teacher in high school and community college, and a playwright with credits in regional theaters and Off-off Broadway. Kerby holds degrees in Chemistry and Soil Biochemistry from the College of Wooster and the University of Wisconsin-Madison, and studied playwriting at Western Michigan University and University of Wisconsin-Madison. Her publications include essays and plays in anthologies and literary magazines and academic articles in *Journal of Chemical Education* and the *Journal of Research in Science Teaching*.

To increase understanding, interest, and confidence in those who feel science is “not for them,” Kerby borrowed tools from drama to develop engaging and effective methods to teach science. In 2006 she founded Fusion Science Theater (FST), a National Science shows that promote learning and assessment of key science concepts. The success of Kerby’s methods and shows in museums and universities have made her a sought-after speaker and consultant in informal chemical education, STEAM (Science Technology Engineering Arts and Mathematics), and the use of assessment to motivate learning. Kerby currently teaches chemistry and playwriting at Madison Area Technical College where she received the NISOD Excellence in Teaching award in 2007. In 2012 she was named the Community College Faculty of the Year for the nation by the Association of Community College Trustees (ACCT).

### Plenary Abstract:

#### **Using the secrets of theater to bring learning and evaluation to the Chemical Demonstration Show**

Chemical demonstration shows are a staple of chemical education outreach and for good reason— they are exciting, engaging, intriguing and entertaining. Until recently, it was presumed that these shows were educational as well, but mounting evidence indicates that demonstrations are not successful at teaching the concepts demonstrated. Does this doom the demo show to be the fluff in the world of evidence-based learning? Or can this form be re-tooled to fulfill its educational potential? Enter Fusion Science Theater, a cross-disciplinary, NSF-funded project that combines the secrets of theater and pedagogies supported by research to focus, support, guide and reward learning. This talk will reveal these secrets and model the creation of demonstration shows that use prediction, participation, kinesthetic modeling and embedded assessment to teach basic chemical concepts. Show excerpts and learning gain data will also be shared, along with audience responses to this new, drama-based design.