This is Your Brain on Civically-Engaged Chemistry

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This Freshman Seminar course for Chemistry majors is designed to introduce students to the college experience as well as to foster an interest in chemistry. The science of learning chemistry is the integrating theme. In Fall 2013, Professor Sevian customized the curriculum by linking her undergraduates with students at the Dever-McCormack School. Undergraduates apply basic chemistry concepts they learn in class to content-focused outreach activities in K-8 science classrooms. This course is part of the Civic Engagement Scholars Initiative (CESI), a three-semester UMass Boston program designed to support faculty with integrating community engagement into undergraduate courses.

Summary

If I Was an Atom: A participatory musical and riddle explores how solids move through the application of the Kinetic Molecular Theory.

Slime Design: Audience participants make predictions and engage in guided physical dramatizations to investigate which of three substances will make slime when added to the mix.

Bouncemania: A pair of balls contest each other in this lighthearted investigation of “bounceability” and molecular structure.

Enhanced student learning:
- Development of visualization skills needed for representing chemical structures;
- Knowledge of effective vs. ineffective methods of teaching chemistry;
- Deepened understanding of how they (individually) learn chemistry.

Additional Outcomes:
- The experience motivated freshman students to serve as lunch buddies for 7th and 8th graders.
- Seven students continued as volunteers in spring semester to mentor and coach 8th graders to perform skits for 3rd-5th graders.
- Exposes 8th graders to role models pursuing science education.
- CESI funds leveraged additional $500 for 8th grade teacher through American Chemical Society’s Science Coaches Program.

UMass Boston Student Reflections:
"As the eighth grade class oohed and awed at the magic…I answered each question that those little minds stormed up with ease.” - Student
"I know the feeling of uncertainty quite well. All throughout high school I wondered whether or not I would make it to college…I hope to in the future encourage and guide other students on a path to college.” - Susana Ruiz

Partners and Resources

Partners and Resources
Plays are copyrighted by the Fusion Science Theater and were written by Holly Walter Kerby.

Kris Grymonpre, 8th Grade Science Teacher, Dever-McCormack School