Third Annual UGA STEM Institute on Teaching and Learning

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Why are we here on Saturday morning?

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Grand Marnier and Chemistry?

- Cryptic Notes
- Molecular models
- A Challenge?

Grand Marnier, slightly less mysterious than chemistry.
A closer look...balancing equations

NaCl  +  H₂O  +  CO₂  +  Ca  +  Xe  +  Mg  =  ?
National Research Council report:
“…research is a process for obtaining information, and scholarship is a process for converting information into knowledge.”


National Research Council, Board on Science Education:
Discipline-based Education Research: Understanding and Improving Learning in Undergraduate Science and Engineering

http://sites.nationalacademies.org/DBASSE/BOSE/DBASSE_072106
Editorials (2012-14)

- Science Scores, Measures of Success, and National Competitiveness
- Energy in the Age of Sustainability
- Making the 2013 National Chemistry Week Theme a Personal Matter
- New Guidelines for Chemistry Education Research Manuscripts and Future Directions of the Field
- Defining a Playing Field: Where Does “Pre-Med” Fit?
- Online Courses in Chemistry: Salvation or Downfall?
- Innocents Abroad: A Journal’s Outreach to India
- Cutting-Edge and Cross-Cutting: Connecting the Dots between Nanotechnology and High School Chemistry
- Navigating the Landscape of Assessment
- Cherry Picking: Why We Must Not Let Negativity Dominance Affect Our Interactions with Students
- Science Education for Global Sustainability: What Is Necessary for Teaching, Learning, and Assessment Strategies?
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- Testing and assessment
- Sustainability: next gen students
- Research and evidence
- MCAT and pre-meds
- Online and MOOCs
- Global issues / questions
- Student diversity
Which components helped you learn?

“General chemistry student surveys: Longitudinal data about which factors helped them learn” in Investigating Classroom Myths through Research on Teaching and Learning, D. Bunce, ed., ACS Symposium Series, 2011
More things to fight about…

Delivery of content
• Traditional vs e-books [What do they read?]
• Flipping classrooms

Optimal use of time / space
• Laboratories: simulation vs wet chemistry?
• SCALE-UP / Studio classrooms / labs

Management of expectations
• DFW [It’s not just an airport in Texas.]
• student, parent, department, organization