

# Teaching Micro- & Macroethics in STEM Education

## Research Topics

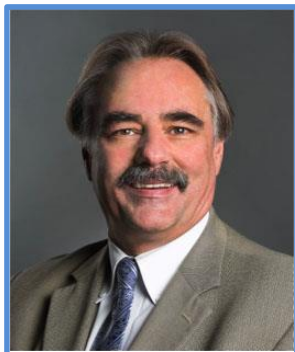
- **STEM Education (source of CSTS interest)**
  - Scientific Writing: Curricula for US & China
  - Macroethics: Key Driver of STEM Curriculum Reform
- **Chemistry Research**
  - Synergy of experimentation & theory/computation
  - Ferroelectric materials for nonlinear optics
  - Peptide materials for CO<sub>2</sub> capture from air
  - Oscillating chemical reactions
  - Layer models of enzyme activity

## Key Words re/ STEM Education

Scientific Literacy, Media Literacy, Learning Theory, Constructivism, Scientific Writing, Publication Ethics, Responsible Conduct of Research (RCR), Science Communication, Peer Review, International Education, Philosophy of Science, Assessment, Collaboration, Group Dynamics.

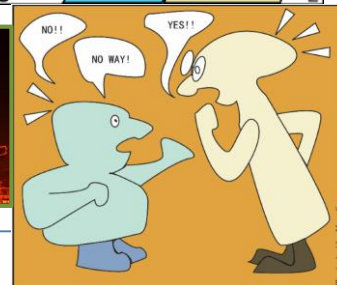
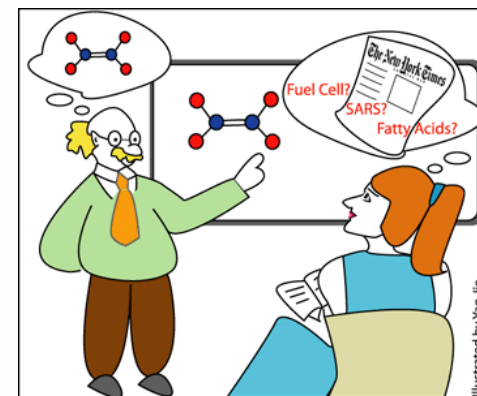
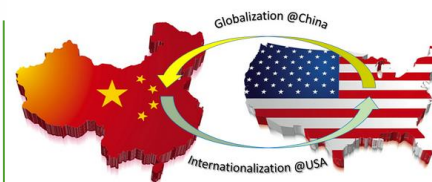
## Contact Information

- **Rainer E. Glaser**, Dipl.-Chem., M.S., Ph.D.
- Professor and Chair
- Department of Chemistry
- 104B Schrenk Hall
- Email: [glaserr@mst.edu](mailto:glaserr@mst.edu)



## Funding (after 2013)

- NSF, CHE: Biomimetic CO<sub>2</sub> Capture from Air
- NSF, MRI: Nonlinear Optical Materials
- ACS, PRF (ND): Polymerization Catalysts
- NSF, PRISM: Mathematics & Life Sciences



## Selected STEM Publications

*Challenges of Globalization and Successful Adaptation Strategies in Implementing a 'Scientific Writing and Authoring' Course in China.* Kaidi Yang, Cun-Yue Guo, and Rainer Glaser, *J. Chem. Educ.* **2018**, in press. [10.1021/acs.jchemed.8b00384](https://doi.org/10.1021/acs.jchemed.8b00384).

*Learning to Read Spectra: Teaching Decomposition with Excel in a Scientific Writing Course.* Andrew Muelleman and Rainer Glaser, *J. Chem. Educ.* **2018**, 95, 476-481. <http://dx.doi.org/10.1021/acs.jchemed.7b00772>.

*Chemistry Is in the News: Assessing Intra-Group Peer Review.* Kathleen M. Carson and Rainer E. Glaser, *Assessment and Evaluation in Higher Education* **2010**, 35, 381-402. <https://doi.org/10.1080/02602930902862826>