Factors Influencing Students’ Conceptual Understanding of Chemistry

This presentation will outline active learning instructional activities implemented in general chemistry programs at Iowa State University, Oklahoma State University, the University of Arizona, and the University of Oregon. Results of our research over a fifteen year period indicate traditional lectures, traditional general chemistry laboratory experiences, course examinations and algorithmic end-of-chapter problems from general chemistry textbooks may not be the most effective vehicle to foster students’ problem solving skills and conceptual understanding of chemistry. The use of guided-inquiry tutorials coupled with high quality interactive computer simulations and animations in both the laboratory and the classroom can help students understand chemistry concepts and can help students improve problem-solving skills. The computer simulations developed and designed by Gelder, Abraham, and Greenbowe (GAG) enable students to collect and analyze data. A series of guided-inquiry tutorials designed to work with the computer simulations are necessary in order to promote learning. The combination of computer simulations and guided-inquiry tutorials fosters student decision-making skills, manipulation of experimental variables and the design of experiments. These are several factors for student success in chemistry.

Tuesday, February 24, 2015
4:00 P.M.
2033 Young Hall

If you would like to meet with the speaker or attend dinner with the speaker, please contact Carol Canedo at (310) 206-4956 or carol@chem.ucla.edu