



The Orange County Local Section of the American Chemical Society
Fall Technical Meeting

Argument Driven Inquiry in General Chemistry Laboratory

Kimberly D. Edwards

Professor of Chemical Education, UC Irvine, Irvine

Waters Corp. Facility, 3540 Howard Way, Suite 100/125, Costa Mesa, CA 92626

Friday November 17, 2023

Social: 5:30 PM

Dinner: 6:00 PM

Program:

Presentation: 7:15 PM

We congratulate members of the Orange County Section who have reached milestones of 50, 60, and 70 years of membership and service to the American Chemical Society.

50 Year Members: Dr. Gary Alan Braden, Dr. Ya-Sun Lee, Dr. Christophe A. Reed, and Mr. Calvin Francis Walker.

60 Year Members: Dr. Edward James Faeder, Mr. Edward K. Francis, Jr., Mr. Timothy Hemming, Dr. Wo Kong Kwok, Mr. Harold P. Madsen, Dr. George E. Miller, and Dr. Harold Mukamal

70 Year Members: Mr. John Duffy, and Mr. James Robert Thornton

Program

Abstract:

Argument Driven Inquiry in General Chemistry Laboratory

Argument Driven Inquiry (ADI) has been adopted to the 1000+ student nonmajors general chemistry laboratory courses at UC Irvine. The ADI process provides student teams procedural instruction and then challenges them to develop their own procedure and data analysis on a similar system. Students then engage in a poster session with their peers where they have an opportunity to refine their understanding before writing their own individual lab report. This ADI process will be discussed as well as course content, grading and student perception.

Speaker Biography

Dr. Kimberly D. Edwards, Professor of Chemical Education, UC Irvine

Education: Ph.D., Chemistry, University of California, Irvine, 2000 B.S., Chemistry, University of California, Irvine, 1994 B.S., Biological Science, University of California, Irvine, 1994

Biography: Dr. Edwards is the General Chemistry Laboratory Instructor. She instructs over 35% of each incoming freshman class to UC Irvine in lab. She creates curriculum and manages numerous teaching assistants and stockroom staff. Over the past 20 years as the General Chemistry Laboratory Instructor, Dr. Edwards has created 9 lab courses in general and analytical chemistry to serve the diverse needs of UC Irvine's undergraduate population. She uses technology in her courses to expose, communicate, and instruct students in the laboratory. This technology has grown from a simple website containing the lab manual to a wide array of hand-held instrumentation, electronic pre-lab homework, computational molecular modeling assignments, an extensive number of instructor videos, and electronic lab notebooks (ELNs). Dr. Edwards has developed experiments on clathrates, photon tunneling, surface enhanced Raman spectroscopy, and self-assembled monolayers, all derived from research in the Department of Chemistry. She has also created and taught an undergraduate hands-on safety training to fulfill degree learning outcomes. Her most current work is the creation of Argument Driven Inquiry (ADI) specifications graded laboratory curriculum to replace traditional experiments. Upon earning her Ph.D., Dr. Edwards taught at Mt. San Antonio College. She accepted the Lecturer position at UC Irvine In 2001. She has received recognition as Lecturer of the Year and for Contributions to Undergraduate Education from the School of Physical Sciences and has served on numerous departmental and campus-wide committees. Since 2015, she has worked closely with the Orange County Department of Education to organize the Regional Science Olympiad at UC Irvine.

Reservations:

All Reservations: Please contact us as soon as possible, but no later than 12 noon on Tuesday November 14, 2023 at OCACS@sbcglobal.net. Please indicate if you will be attending the dinner and program or the program only. Also, please list all the names of attendees and special food requests like vegetarian or gluten free. There is a limit on the number of attendees so make your reservation early.

Note: OCACS pays the caterer on the basis of the number of dinner reservations made. Your RSVP for dinner is a commitment to pay for the meeting cost. Dinner cost is \$25 for members and members' significant others; \$35 for non-members or those without reservations The section's address is OCACS, P.O. Box 211, Placentia CA 90871. **Teachers and students who register for a meeting will receive a \$10 discount on their dinner. Since we are not at this time set up to accept credit cards, please plan on using a check or cash.**