CHEMISTRY EDUCATION SEMINAR

Wednesday, September 29, 2021 at 3:30pm (CT)
Social Sciences, Room 5106
1180 Observatory Dr.
Host: Prof. Sam Pazicni

Department of Chemistry
UNIVERSITY OF WISCONSIN-MADISON

PROFESSOR JOI WALKER
DEPARTMENT OF CHEMISTRY
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Cracking the Mold – The Broader Impact of Introductory Laboratory Transformation

THIS PRESENTATION WILL DESCRIBE TWO CURRICULAR REFORM PROJECTS THAT SUCCESSFULLY TRANSFORMED THE FOUNDATIONAL UNDERGRADUATE LABORATORY COURSES ACROSS MULTIPLE DISCIPLINES, USING COMMON LABORATORY STRUCTURE, LANGUAGE, AND EMPHASIS FOR INSTRUCTION. THE FIRST PROJECT TRANSFORMED THE INTRODUCTORY LABORATORY COURSES INTENDING TO IDENTIFY WHAT SCIENCEPRACTICE MEANS AT THIS LEVEL AND WHAT STUDENTS AT THE INTRODUCTORY LEVEL NEED TO PARTICIPATE IN SCIENCE PRACTICES. THE CHEMISTRY DEPARTMENT LED THIS PROCESS THROUGH THE IMPLEMENTATION OF ARGUMENT-DRIVEN INQUIRY (ADI), AN INSTRUCTIONAL MODEL DESIGNED TO PROVIDE STUDENTS THE OPPORTUNITY TO ENGAGE IN INVESTIGATION DESIGN, DATA COLLECTION AND ANALYSIS, AND SCIENTIFIC ARGUMENTATION. THE SECOND PROJECT INCORPORATED AUTHENTIC UNDERGRADUATE RESEARCH INTO THE CHEMISTRY CURRICULUM WITH AN ORGANIC TO ANALYTICAL CHEMISTRY SEQUENCE BASED ON A COLLABORATIVE RESEARCH PROJECT. EVIDENCE ON STUDENT LEARNING FROM MULTIPLE METRICS DESIGNED TO EXPLICITLY ASSESS SCIENCE PRACTICES AND RESEARCH SKILLS WILL BE PRESENTED. AS A RESULT OF THESE REFORM PROJECTS, LABS HAVE BEEN TRANSFORMED TO EITHER ADI OR RESEARCH-BASED EXPERIENCES AT SUCH A PACE THAT IT SEEMS THAT INDEED "CRACKING THE MOLD" ON LABORATORY INSTRUCTION MAY OPEN THE DOOR FOR PEDAGOGICAL CHANGES THROUGHOUT THE SCIENCE CURRICULUM.

FOR MORE INFORMATION, CONTACT: ALISA GRADNEY AT AGRADNEY@WISC.EDU