EDUCATION

Doctor of Philosophy, University of Minnesota (UMN), October 2007
Major: Chemistry (emphasis on physical inorganic chemistry and spectroscopy)
Advisor: Dr. Doreen Leopold
Thesis: Photoelectron Spectroscopy of Small Transition Metal Clusters

Master of Science, University of Minnesota Duluth (UMD), August 2002
Major: Chemistry (emphasis on computational/physical chemistry)
Minor: Minor in Applied and Computational Mathematics
Advisor: Dr. Paul Kiprof
Thesis: Stabilizing Effects of Oxygen in Carbocations

Bachelor of Science, University of Minnesota Duluth, May 2000
Majors: Chemistry and Biochemistry/Molecular Biology
Minor: Mathematics

RESEARCH EXPERIENCE

Postdoctoral Research, Institute for Shock Physics, Washington State University, 2007-2008
Examined anisotropic initiation in the chemical decomposition mechanisms of shocked high explosive materials using time-resolved UV/Vis emission spectroscopy

Ph.D. Research, UMN, 2003-2008
Studied bonding in metallic systems through the use of gas-phase anion photoelectron spectroscopy and density functional theory/*ab initio* calculations

M.S. Research, UMD, 2000-2002
Used computational methods to study resonance-based oxygen stabilization of carbocations

Undergraduate Research Assistant, UMD/Large Lakes Observatory, 1999-2000
Advisor: Dr. James McManus
Performed geochemical trace metal analysis of oceanic sediment cores using inductively-coupled plasma mass spectrometry (ICP-MS)

Undergraduate Research Assistant, UMD, 1998-2000
Advisor: Dr. Paul Kiprof
Explained the photochemical [2+2] cycloaddition reaction between acetylene (C_2H_2) and silene (SiH_2=CH_2) using theoretical modeling

TEACHING EXPERIENCE

Visiting Assistant Professor of Chemistry, Gustavus Adolphus College, 2008-2010

Courses Taught

Taught lecture and laboratory sections of

- -General Chemistry (a one semester version of a traditional two semester general chemistry sequence)
- -Physical Chemistry I (Thermodynamics and Kinetics)
- -Physical Chemistry II (Quantum Chemistry and Dynamics)
- -Organic Chemistry I (laboratory only)
- - Science and Public Policy, a January term course concerning scientific ideas relevant in the modern public policy arena (lecture only)

Adjunct Instructor, North Hennepin Community College, 2004-2009

Courses Taught

Introduction to Chemistry (general chemistry for non-science majors)
General Chemistry I (first semester of general chemistry for science majors)
Organic Chemistry I

Adjunct Instructor, FOCUS degree completion program, Northwestern College, 2004-2007

Taught Essentials of Science, an adult education course concerning the development, history and philosophy of scientific thought in Western culture

Graduate Teaching Assistant, UMN, 2002-2007

Laboratory Teaching Assistant for General Chemistry I and II
Lecture Teaching Assistant for Physical Chemistry I (Thermodynamics and Kinetics) and II (Quantum Chemistry and Spectroscopy)

Graduate Teaching Assistant, UMD, 2000-2002

Laboratory Teaching Assistant for General Chemistry, Physical Chemistry, Quantitative Analysis, and Instrumental Analysis

Undergraduate Teaching Assistant, UMD, 1997-2000

Laboratory Teaching Assistant for General Chemistry and Quantitative Analysis

Undergraduate Tutor, UMD, 1997-2000

Chemistry, math, and physics tutor at the UMD Tutoring Center

- -Training included completion "Tutor Training: Individual Instruction" course
- -Received Level II Tutor Certification from the College Reading and Learning Association