

Colleen F. Craig, Ph.D.

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EDUCATION

Ph.D., Computational Physical Chemistry (advisor: Prof. Oleg Prezhdo), University of Washington, Dec 2006.

Thesis: "Non-adiabatic molecular dynamics in time-dependent density functional theory with applications to nanoscale materials."

Additional coursework: 9 credits in science writing

B.S., Applied Math; Minor: Chemistry, University of Colorado Denver, Jun 2001.

ACADEMIC APPOINTMENTS

Associate Teaching Professor, Department of Chemistry, University of Washington; Sept 2020 – Present.

Senior Lecturer, Department of Chemistry, University of Washington; Sept 2016 – Sept 2020.

Lecturer, Department of Chemistry, University of Washington; Sept 2012 – Sept 2016.

Adjunct Lecturer, Department of Chemistry, University of Washington; Jun 2009 – Sept 2012.

Adjunct Lecturer, Department of Interdisciplinary Arts and Sciences, University of Washington Tacoma; Jan – Mar 2012.

Adjunct Lecturer, Division of Science and Math, Seattle Central Community College; Jan 2008 – Mar 2011.

Adjunct Lecturer, Center for University Studies and Programs (CUSP), University of Washington Bothell; Mar – Jul 2010.

Adjunct Lecturer, Department of Chemistry, Western Washington University; Jan – Jun 2007.

Teaching Assistant, Department of Chemistry, University of Washington; 2001 – 2006.

Teaching Assistant, College of Arts & Sciences, University of Washington; Aug – Sept 2005.

INSTRUCTIONAL LEADERSHIP

All UW Seattle, except where noted.

Chemistry Department COVID-19 Response

Developer, Committee for Remote Teaching & Learning website, Aug 2020 – Present.

Developed a website containing best practices in pedagogy and technology use to aid Chemistry faculty members' shift to remote instruction during the 2020-21 academic year. (co-developers: Matt Bush, Paul Isaac, Samantha Robinson, Josh Vaughan).

Coordinator and Developer, Lecture Video Series for CHEM 152, Dec 2020 – Mar 2021.

Coordinated an effort to create lecture videos employed to deliver course content asynchronously in CHEM 152. Although developed for the acute needs of remote teaching during the COVID-19 pandemic, these videos can be reused in future courses to implement a "flipped" instructional model (co-coordinators/-developers: Charles Barrows, Daniel Chiu, Sarah Keller, Anne McCoy).

Coordinator, Emergency Online Final Exam for CHEM 152/153, Mar 2020.

Coordinated with the winter 2020 CHEM 152/153 faculty (Charles Barrows, Daniel Chiu, and Anne McCoy) to develop a remote version of the final exam via ALEKS due to the suspension of in-person course events at UW.

Fellowships

Teaching Fellow, Academic and Student Affairs, Mar 2018 – Present.

Building campus-wide network around teaching and learning issues, with the Center for Teaching and Learning as the hub. Developing programs to build knowledge of and expertise with evidence-based teaching practices.

Senior Fellow, Faculty Fellows Program, Center for Teaching & Learning Sept 2018.

Developed programming themes for the 2018 teaching orientation program. Delivered a workshop on large-lecture instruction.

Fellow, Teaching with Technology Fellows Institute, Aug 2013.

Participated in intensive, competitive-entry workshop to develop an online/hybrid version of a Preparatory Chemistry course, previously taught in a lecture-only format. (Director: Brigid Nulty)

Workshop Development and Delivery

Developer, Teaching Data Science Skills Program, Center for Teaching & Learning, Oct 2020 – Present.

Developing a workshop series for faculty who are interested in teaching data science methods to undergraduates; pilot expected Summer 2021. This project is affiliated with the UW Data Science Minor, launched in Autumn 2020 (co-developer: Ben Marwick).

Developer and Organizer, Remote Teaching Pop-Up Series, Center for Teaching & Learning, Apr – Jun 2020.

Developed and organized a weekly online panel-discussion series exploring timely topics related to remote teaching due to the COVID-19 pandemic. Sessions included best-practices and essential aspects of effective remote instruction along with opportunities to share ideas and resources. (Co-developers/-organizers: Robyn Foshee, Milan Vidakovic, Beth Kalikoff)

Organizer, Western States Chemistry Education Group Meeting, Apr 13-14, 2019.

Organized the 6th annual meeting of the Western State Chemistry Education Group, an affiliation of faculty with a shared interest in best practices in chemistry education and the development and training of graduate students. (Co-organizers: Andrea Carroll, Larry Goldman, Samantha Robinson, Debbie Wiegand, Tam'ra-Kay Francis, Michael Mack, Abbie Pickering, Cynthia Stanich)

Developer and Facilitator, Evidence-Based Teaching Reading Group, Center for Teaching & Learning, Jan – Jun 2019.

Facilitator for journal club focusing on literature from the scholarship of teaching and learning (SoTL) and discipline-based education research (DBER). Met biweekly.

Faculty Coach, Evidence-Based Teaching Program, Center for Teaching & Learning, Sept 2016 – May 2017.

Facilitated discussions among a group of ~6 faculty on evidence-based practices in teaching: what they are and how to incorporate them into the classroom. Met biweekly for three quarters.

Session Facilitator, “Technology in Practice”, Faculty Fellows Program, Center for Teaching & Learning, Aug 2015.

Presented best practices for incorporating technology into a class in ways that support pedagogical improvements, and ease the instructor's burden. (Co-facilitators: Jasmine Bryant and Stefan Stoll).

Organizer and Session Facilitator, Large Lecture Collegium, Center for Teaching & Learning, Aug 2014.

Developed program for the day-long collegium in cooperation with Center for Teaching and Learning staff (Co-organizers: Karen Freisem, Christine Sugatan). Facilitated session on methods to engage students in large classes (Co-facilitator: Peter Wallis).

Session Facilitator, First-Year Programs' Parent Orientation, Center for Teaching & Learning, UW, Aug 5 & 7, 2014

Presented tips for success in college to parents of in-coming freshmen. (Coordinator: Christine Sugatan)

Session Facilitator, "Flipping a Large Classroom: How-To's and Better-Not's", UW Bothell Large Lecture Collegium, Mar 2014.

Lead discussion on techniques for "flipping" a large-lecture course. (Organizer: Erin Hill)

Organizer and Facilitator, "Engaging Students in Large Classes" Learning Community, Center for Teaching & Learning, Jan – Mar 2014.

Met weekly with group of ~10 UW faculty and graduate students to discuss issues specific to lecture classes of 100-600 students. (Co-organizer: Peter Wallis)

Program Development

Developer and Organizer, Advances in Higher Education Research Seminar Series, Center for Teaching & Learning, Sept 2018 – Present

Organizer of a seminar series that highlights original research in college-level learning and instruction. The series addresses the broad themes of the work of instructors, including the cognitive processes by which students learn, and the classroom context in which they do so.

Faculty Facilitator, Waseda University/University of Washington Joint Center for Teaching, Learning & Technology (J-CTLT), Jan 2015 – Jan 2018.

Member of a new joint center for teaching and learning at Waseda University in Tokyo and University of Washington. The goals of the center are to share best practices, promote the use of evidence-based teaching methods, and develop pedagogical research collaborations. (UW Lead: Beth Kalikoff)

Developer, Large-Lecture Instruction Resources, Center for Teaching & Learning Website, Mar – Aug 2014.

Developed extensive set of online teaching resources focused on the unique challenges of large-lecture instruction (100+ students). (Co-developers: Peter Wallis, Monica Huerta)

GRANT ACTIVITY

HHMI Inclusive Excellence 3 (PI) Pre-proposal, Jan 2020 Was not advanced to 2nd round
Renovate introductory chemistry curriculum to improve outcomes and increase diversity, equity, and inclusion

RESEARCH MENTORING

All UW Chemistry, except where noted.

Current Undergraduate Researchers

Jackson Hughes	Nov 2020 – Present
Ganling Zhang	Oct 2020 – Present
Madilyn Avila	Jan 2020 – Present
Rhonda Osman	Jan 2020 – Present
Garvit Mittal	Jun 2019 – Present

Former Post-doctoral Researcher

Michael Mack 2017 – 2020

Former Post-Baccalaureate Researchers

Abbie Pickering 2018 – 2020
Samantha Gunnerson Jun – Aug 2019

Former Undergraduate Researchers

Rayne Anderson 2018 – 2019
Shuyi Tan 2018 – 2019
Jacob Parikh 2012 – 2013
Ross Phimister 2012 – 2013
Bonnie Mattson Jan – Aug 2010 Division of Science & Math, Seattle Central College

K-12 OUTREACH

Departmental Coordinator: UW in the High School, May 2011 – May 2017.

Developed a version of UW's CHEM 110 (Introduction to General Chemistry) for delivery at Washington State high schools. Coordinate with several area high school chemistry teachers to develop the course. This program gives high school students the opportunity to take a college level course in the familiar environment of their high school.

Event Supervisor: West Central Washington Regional Science Olympiad, May 2009.

Developed and supervised an acid-base chemistry lab event for high school students and a forensic-chemistry event for middle school students during the 2009 tournament.

Judge, Mentor: Student Biotechnology Expo, sponsored by the Northwest Association for Biomedical Research, Apr 2008 and Apr 2009.

Served as a Mentor for the 2009 Expo, and as a Judge for the 2008 Expo. The Expo is an opportunity for Seattle-area high school students to present projects in biotechnology and molecular biology.

CURRICULUM AND TEXTBOOK DEVELOPMENT

Morton Publishing, Oct 2014 – Present.

Developed college-level general chemistry laboratory manual that focuses on conceptual understanding. First edition published Spring 2017. (Co-author: Kim Gunnerson, UW Bothell)

ALEKS Corporation, Jun – Jul 2014.

Reviewed general chemistry content for online tutorial system ALEKS (Assessment and LEarning in Knowledge Spaces). Conducted deep reading of 400+ chemistry topics comprising 4-6 conceptual or computational problems each. Suggested edits, updates, or additions for ~200 topics, and suggested ~200 new topics.

Seattle Central Community College Chemistry Department, May 2011 – May 2012.

Adapted existing paper-based CHEM 161 pre- and post-lab exercises for delivery online using the course-management system ANGEL. (Co-developer: Marie Villarba)

W.H. Freeman, Apr 2008 – Mar 2010.

Developed materials for web-based concept tutorials to supplement an introductory chemistry textbook aimed at allied-health majors. Developed list of 64 essential tutorial topics for the sixteen-chapter book and wrote 32 tutorials. Created detailed rubric for a comparison report of competing materials in various introductory chemistry markets. Adapted eighteen molecular model kit exercises from the text as online tutorials for distribution with the electronic version of the textbook. (Editor: Anthony Palmiotto)

Seattle BioMed, Aug 2009.

Developed a one-hour in-class chemistry activity and a three-hour chemistry laboratory activity for high school students, as part of an overall project to enhance science education in Washington State high schools serving at-risk students. The activities explored chemical concepts within the context of folk medicines that are used in the developing world to treat diarrhea. (Project Supervisor: Theresa Britschgi)

SCIENCE WRITING AND EDITING

Editor, Univ. of Washington Department of Genome Sciences Education Outreach; Jul – Nov 2010.

Edited, formatted, and assisted in publishing a 400-page high-school science curriculum that teaches students about the process of scientific research. (Project Supervisor: Maureen Munn)

Contributor, Sea Star, Washington Sea Grant Program newsletter; 2006 – 2009.

Wrote news articles on current research projects funded by Washington Sea Grant for its internal newsletter. (Editor: David Gordon)

Contributor, Northwest Science & Technology (www.nwst.org); 2005 – 2006.

Wrote news articles highlighting research performed by northwest scientists. (Editor: Deborah Illman)

Associate Editor, Chem Letter, University of Washington Department of Chemistry newsletter; 2006.

(Editor: Shanon Radford)

Associate Editor, Light Works, Center on Materials and Devices for Information Technology Research newsletter; 2006.

(Editor: Margaret Harden)

DEPARTMENTAL SERVICE

All UW Chemistry.

Chair, Evaluative Committee for Asst. Teaching Professor Samantha Robinson, Mar 2021 – Present.

Member, CHEM 1x2/1x3 Education Committee, Sept 2020 – Present.

Chair, Committee for Remote Teaching & Learning, Jul 2020 – Present.

Organizer, Chemistry Education Group (CEG), Jul 2020 – Present.

Developer, General Chemistry Exam Question Bank, Mar 2020 – Present.

Member, Website Committee, Sept 2019 – Present.

Content Curator, ALEKS (Chemistry Tutorial System), Dec 2016 – Present.

Organizer and Presenter, Graduate Student Orientation, Sept 2012 – 2020.

Organizer, Chemistry Education Research Group, Sept 2015 – Jul 2020.

Member, Undergraduate Curriculum Committee, Sept 2012 – Jun 2020.

Administrator, ALEKS (Chemistry Tutorial System), Sept 2012 – Dec 2016.

Presenter, Women in Chemical Sciences Seminar Series, Mar 2013.

Presenter, Careers in Chemistry Seminar Series, May 2010.

UNIVERSITY SERVICE

All UW.

Organizer and Facilitator, Advisory Council for Technology-enhanced Teaching (ACTT) Oct 2020 – Present

Organizer and facilitator for a council of ~20 faculty and staff whose purpose is to identify and address emergent issues at the intersection of teaching and technology, and to disseminate methods for supporting technology-enhanced teaching and learning during the COVID-19 pandemic and beyond (co-organizers/-facilitators: Dave Coffey, Robyn Foshee, Katie Malcolm, El Schofield).

Chair, University Bookstore Digital Trends Committee, Oct 2018 – Present

Inform and advise the University Bookstore Board on industry trends and potential opportunities related to the use of technology on campus.

Member, University Bookstore Board of Trustees, Oct 2018 – Present

Represent and protect the interests of the beneficiaries of the University Trust (UW students, faculty, and staff); Ensure that the company's assets are managed judiciously.

Member, Campus-Wide Classroom Upgrades Committee, Capital Projects Office, UW, Oct 2015.

Advise on structural, cosmetic, and technological upgrades to Bagley 131 and Loew Hall classrooms. (Project Manager: Everett Spring)

Reviewer, Mary Gates Endowment for Students Research Scholarship, University of Washington, Feb 2013, Mar 2014, Mar 2015.

Reviewed applications for the Mary Gates Research Scholarship for undergraduates. (Director: Janice Decosmo)

Member, Research Scientist Search Committee, HHMI STEM-Dawgs Grant, Department of Biology, UW, Sept 2014 – Mar 2015.

Participated in the search for the developer of a companion course for CHEM 142, which is aimed at historically under-represented groups in science. (Principal Investigator: Scott Freeman)

PROFESSIONAL DEVELOPMENT

2021 Project TIER (Teaching Integrity in Empirical Research) Symposium, Online, Mar 5, 12, 19, 26; Apr 16, 23, 30; May 7, 14, 21 2021.

2020 GitHub Universe, Online, Dec 8-10, 2020.

2020 Society for the Advancement of Biology Education Research, Online, Jul 10 & 17, 2020.

2020 Network of STEM Education Centers National Conference, Online, Jun 10-11, 2020.

2019 Summer Institute in Statistics for Big Data session: Data Wrangling with R, UW Biostatistics Dept. Jul 15- 17, 2019.

2019 Summer Institute in Statistical Genetics session: Regression Methods, UW Biostatistics Dept. Jul 10- 12, 2019.

2019 American Chemical Society Northwest Regional Meeting, Portland, OR, Jun 16-19, 2020.

2019 Network of STEM Education Centers National Conference, Omaha, NE, May 31 – Jun 2, 2019.

2018 Biennial Conference on Chemistry Education, Notre Dame University, South Bend, IN, Jul 29 – Aug 2, 2018.

2018 Network of STEM Education Centers National Conference, Columbus, OH, Jun 6-8 2018.

2018 Western States Chemistry Education Group Meeting, University of Oregon, Eugene, OR, Apr 2018.

2017 Gordon Research Conference on Chemistry Education Research, Bates College, Lewiston, ME, Jun 18-23, 2017.

2017 Western States Chemistry Education Group Meeting, Univ. of Colorado, Boulder, CO, Apr 2017.

2016 Biennial Conference on Chemistry Education, University of Northern Colorado, Greeley, CO, Jul 31 – Aug 4, 2016.

2014 Conference on Case Study Teaching in Science, National Center for Case Study Teaching in Science, University at Buffalo, Buffalo NY, Sept 19-20, 2014.

Faculty and Professional Learning Communities, Center for Teaching and Learning, University of Washington.

“**Instructional Design**” Summer quarter, 2014.

“**Critical Pedagogies**” Spring quarter, 2014.

“**Creative Assignments**” Spring quarter, 2014.

“**Engaging Students in Larger Classes**” Spring quarter, 2012.

National Teaching Assistant Workshop, Cottrell Scholars Collaborative, Georgia Institute of Technology, Atlanta, GA, May 28-30, 2014.

“**Creating an Active, ‘Flipped’ Classroom (Without Flipping Out)**” Workshop, Center for Teaching and Learning, University of Washington, Mar 14, 2013.

Faculty Fellows Program, University of Washington Teaching Academy, Sept 10-14, 2012.

Large Lecture Collegium, University of Washington Center for Teaching and Learning, Aug 29, 2012.

HONORS AND FELLOWSHIPS

Awardee, Distinguished Teaching Award for Innovation with Technology, University of Washington. Team nomination (with Dr. Jasmine Bryant, Prof. Andrew Boydston, and Prof. Stefan Stoll), 2015

Awardee, Outstanding Faculty Award, University of Washington Interfraternity Council and Panhellenic Association, 2015

Nominee, Distinguished Teaching Award for Innovation with Technology, University of Washington. Individual nomination, 2014

Center on Materials and Devices for Information Technology Research (CMDITR) Graduate Fellow, University of Washington, 2005-2006

Alvin Kwiram Graduate Fellow, Department of Chemistry, University of Washington, 2004-2005

Seaborg Institute Fellow, Los Alamos National Laboratory, Summer 2004

Mindlin Brothers Graduate Fellow, Department of Chemistry, University of Washington, 2001-2002

Outstanding Analytical and Instrumental Chemistry Student, Department of Chemistry, University of Colorado Denver, 2000-2001

PUBLICATIONS

Academic

Michael R. Mack, Cynthia A. Stanich, Elli J. Theobald, Abbie Pickering, Samuel Barlow, Charles J. Barrows, Trevor Johnston, **Colleen F. Craig**, “Increasing Course Structure Improves Exam Performance in General Chemistry”, in preparation (submission goal: Jun 2021).

Craig, C. F., Gunnerson, K. "Exploring General Chemistry in the Laboratory," Morton Publishing: Englewood, CO, 2017.

Walter R. Duncan, **Colleen F. Craig**, Oleg V. Prezhdo, "Time-Domain Ab Initio Study of Charge Relaxation and Recombination in Dye-Sensitized TiO₂," J. Am. Chem. Soc., 129, 8528 (2007).

Oleg V. Prezhdo, **Colleen F. Craig**, Yuriy Fialkov, Victor V. Prezhdo, "Control of Chemical Equilibrium by Solvent: A Basis for Teaching Physical Chemistry of Solutions," J. Chem. Ed., 84, 1348 (2007).

S. V. Kilina, **C. F. Craig**, D. S. Kilin, O. V. Prezhdo, "Ab initio time-domain study of phonon-assisted relaxation of charge carriers in a PbSe quantum dot," J. Phys. Chem. C, 111, 4871 (2007).

O. V. Prezhdo, W. R. Duncan, **C. F. Craig**, S. V. Kilina, B. F. Habenicht, "Photoexcitation dynamics on the nanoscale," in Quantum Dynamics of Complex Molecular Systems, Springer Series in Chemical Physics, 83, pp. 5-30, D. A. Micha, I. Burghart (eds.) (Springer-Verlag, 2006).

Bradley F. Habenicht, **C. F. Craig**, Oleg V. Prezhdo, "Time-Domain ab initio simulation of electron and hole relaxation dynamics in a single-wall semiconducting carbon nanotube," Phys. Rev. Lett., 96, 187401 (2006).

Colleen F. Craig, Walter R. Duncan, Oleg V. Prezhdo, "Trajectory surface hopping in the time-dependent Kohn-Sham approach for electron-nuclear dynamics," Phys. Rev. Lett. 95, 163001 (2005)

R. Damrauer, A. J. Crowell, **C. F. Craig**, "Electron, hydride, and fluoride affinities of silicon-containing species: computational studies," J. Am. Chem. Soc., 125, 10760 (2003)

Non-academic

"F+RNA Coliphage Study Opens Window on Oakland Bay Water Quality," feature article; Sea Star, WA Sea Grant Program newsletter; Autumn 2009.

"WSG Funds a Second Look at Glass Sponge Reefs," feature article; Sea Star; Autumn 2008.

"Glass-Sponge Reefs: Deep-sea Habitats and Inhabitants Astound Scientists on WSG-funded Cruise," feature article (cover story); Sea Star; Autumn 2007.

"What's Missing? The Sound's Marine Riparian Areas," feature article; Sea Star; Summer 2006.

"Codes in Cod Genes," feature article (cover story); Sea Star; Spring 2006.

"Oceanic Bacterium Is Big For Its Size," news feature, Northwest Science & Technology (www.nwst.org); Winter 2006.

CHEMISTRY ADVISORY BOARDS AND REVIEWS

Reviewer, General Chemistry textbook, Open Stax, Sept 2013 – Aug 2014.

Reviewer, Preparatory Chemistry textbook, Oxford University Press, Aug 2013.

Reviewer, Atoms-First General Chemistry textbook, Norton, Nov – Dec 2011.

Participant, Chemistry Advisory Board, WebAssign, Raleigh, NC, Oct 25-28, 2011.

Participant, General Chemistry Focus Group, McGraw-Hill, Chicago, IL, Sept 29 – Oct 1, 2011.

Presenter, Chemistry Symposium, ALEKS Corporation, San Francisco, CA, Oct 22, 2010.

Participant, Chemistry Symposium, ALEKS Corporation, Austin, TX, Feb 26, 2010.

PRESENTATIONS

Talks

“Implementing and measuring the efficacy of high-structure and active learning in a large-lecture general chemistry course,” ACS Northwest Regional Meeting, Portland, OR, Jun 16-19, 2019.

“Development of a Multi-disciplinary Journal Club on Teaching and Learning,” Network of STEM Education Centers National Conference, Omaha, NE, May 31 – Jun 2, 2019.

“Neither Capricious Nor Arbitrary, But Then What? An Exploration of Grading Practices” Western States Chemistry Education Group, Eugene, OR, Apr 2018.

“Decreasing Performance Gaps in General Chemistry,” Western States Chemistry Education Group, Boulder, CO, Apr 2017 (Co-Presenter: Deborah Wiegand).

“Research-based Teaching, and the Center for Teaching, Learning and Technology,” Joint Center for Teaching, Learning, and Technology Kick-off Seminar, Waseda University (Tokyo), Jul 7, 2015.

“ALEKS (Assessment and LEarning in Knowledge Spaces) at UW Chemistry,” University of Washington Ignite! Event, Oct 25, 2012.

“A comparison of two online learning systems in general chemistry at the University of Washington,” Chemical Education division, ACS National Meeting, Philadelphia, PA, Aug 19-23, 2012.

Posters

“Experimental design of a study to determine if two-stage exams can improve outcomes and reduce anxiety in general chemistry,” Gordon Research Conference: Chemistry Education Research and Practice, Lewiston, ME, Jun 18-23, 2017.

“Student reaction to a flipped introductory chemistry class,” University of Washington Symposium on Teaching and Learning, Apr 15, 2014.

“A statistical analysis of the efficacy of online learning in general chemistry at the University of Washington,” University of Washington Symposium on Teaching and Learning, Apr 16, 2013.

“A statistical analysis of the efficacy of online learning in general chemistry at the University of Washington,” Chemical Education poster session, ACS National Meeting, New Orleans, LA, April 7-11, 2013. (Selected for Sci-Mix poster session)

“Math preparation of undergraduates in general chemistry, a gatekeeper course required for biophysicists,” Chemical Education poster session, ACS National Meeting, Philadelphia, PA, Aug 19-23, 2012.

“Math preparation of undergraduates in general chemistry, a gatekeeper course required for biophysicists,” University of Washington Symposium on Teaching and Learning, Apr 17, 2012.

“Math preparation of undergraduates in general chemistry, a gatekeeper course required for biophysicists,” Biophysics Education poster session, 56th Annual Meeting of the Biophysical Society, San Diego, CA, Feb 25-29, 2012.

“Trajectory surface-hopping molecular dynamics: Back-transfer in a dye-sensitized semiconductor system,” Computers in Chemistry Division poster session, ACS National Meeting, San Francisco, CA, September 10-14, 2006.

“Electron relaxation dynamics in carbon nanotubes,” Computers in Chemistry Division poster session, ACS National Meeting, San Francisco, CA, Sept 10-14, 2006.

“Trajectory surface hopping in the time-dependent density functional theory for electron-nuclear dynamics,” American Conference on Theoretical Chemistry (ACTC05), poster session, Los Angeles, CA, Jul 16-21, 2005.

"Investigation of fluorescence quenching in the green fluorescent protein chromophore via quantum chemical methods and non-adiabatic molecular dynamics," 52nd Western Spectroscopy Association Conference, poster session, Monterey, CA, Jan 26-28, 2005.

"Computational study of fluorescence quenching of the green fluorescent protein chromophore," National Workshop on Quantum and Semiclassical Molecular Dynamics of Nanostructures, poster session, Los Alamos National Laboratory, NM, Jul 15-17, 2004.

"Comparative study of rotation barriers in the green fluorescent protein chromophore by several quantum-chemical approaches," Chemical Physics Section of the Northwest Regional Meeting of the American Physical Society, poster session, Portland, OR, May 29-31, 2003.

COMPUTER AND PROGRAMMING SKILLS

Course Management Systems: Catalyst, Canvas

Programming Languages: Fortran 90/95, Pascal, Perl, R

Scientific Packages: Vienna Ab-initio Simulation Package (VASP), Gaussian, General Atomic and Molecular Electronic Structure System (GAMESS), ChemOffice, Origin, LaTeX, Gnuplot

Operating Systems: Linux (Fedora 6.0, Red Hat 3.4), Windows 2000/XP/7/10, Cygwin

AFFILIATIONS

American Chemical Society

Washington College Chemistry Teachers Association

Western States Chemistry Education Group

Network of STEM Education Centers

TEACHING

UW Department of Chemistry. Quarterly course credit hours and number of students per class are indicated.

CHEM 110, Introduction to General Chemistry (3.0): Au 2011 (160), Au 2012 (160), Au 2013 (200); Au 2014 (200), Au 2015 (200)

CHEM 120, Principles of Chemistry (5.0): Su 2011 (25)

CHEM 142, General Chemistry (5.0; first course in a three-quarter sequence): Su 2012 (96); Au 2014 (576); Wi 2016 (A: 334, B: 284); Au 2016 (A: 467, B: 525); Au 2017 (A: 622, B: 621); Au 2018 (D: 548); Au 2019 (B: 570)

CHEM 152, General Chemistry (5.0; second course in a three-quarter sequence): Su 2009 (96), Su 2010 (96), Sp 2011 (600), Sp 2012 (648), Au 2012 (216), Wi 2013 (432), Sp 2013 (408), Wi 2014 (A: 480, B: 480), Wi 2015 (A: 480, B: 480); Sp 2016 (A: 412, B: 513); Wi 2017 (D: 288, E: 288); Wi 2018 (D: 288, E: 288); Wi 2019 (C: 288); Wi 2020 (C: 288); Wi 2021 (C: 277)

CHEM 162, General Chemistry (5.0; third course in a three-quarter sequence): Au 2010 (288), Wi 2011 (120), Sp 2014 (288); Sp 2015 (B: 288, C: 288); Au 2015 (321); Sp 2017 (B: 288, C: 264); Sp 2019 (C: 287); Sp 2020 (C: 288); Au 2020 (A: 221)

CHEM 461, Physical Chemistry Laboratory (3.0): Su 2013 (10)

Student Course Evaluations by Quarter (adjusted median scores on a 5.0 point scale)

CHEM 110	AU11	AU12	AU13	AU14	AU15
Enrollment	160	160	200	200	200
Course as a whole was:	4.0	4.2	4.2	4.2	4.6
Course content was:	4.0	4.2	4.1	4.1	4.5
Instructor's contribution to course:	4.4	4.7	4.5	4.7	4.9
Instructor's effectiveness at teaching:	4.2	4.5	4.4	4.5	4.8
Combined items above:	4.2	4.4	4.3	4.4	4.7

CHEM 120	SU11
Enrollment	24
Course as a whole was:	4.3
Course content was:	4.2
Instructor's contribution to course:	5.0
Instructor's effectiveness at teaching:	4.7
Combined items above:	4.5

CHEM 142	SU12	A14	W16	A16	A17	A19
Enrollment	96	576	288	600	609	559
Course as a whole was:	3.7	3.8	4.5	4.6	4.5	4.6
Course content was:	3.5	3.9	4.4	4.5	4.3	4.5
Instructor's contribution to course:	3.9	4.0	5.1	5.0	5.0	5.1
Instructor's effectiveness at teaching:	3.8	3.8	5.1	5.0	5.0	5.1
Combined items above:	3.7	3.9	4.8	4.8	4.7	4.8

CHEM 152	Sp12	Au12	W13	Sp13	W14	W15	Sp16	W17	W18	W19	W20
Enrollment	648	216	432	408	480	480	336	288	284	285	285
Course as a whole was:	4.3	4.3	4.3	4.2	4.2	4.3	4.7	4.6	4.4	4.6	4.7
Course content was:	4.2	4.4	4.1	4.2	4.1	4.1	4.5	4.5	4.4	4.4	4.5
Instructor's contribution to course:	4.8	5.0	4.6	4.6	4.6	4.8	5.2	5.2	5.0	5.2	5.1
Instructor's effectiveness at teaching:	4.6	4.8	4.6	4.5	4.5	4.6	5.3	5.2	5.0	5.2	5.0
Combined items above:	4.4	4.6	4.4	4.4	4.4	4.5	4.9	4.8	4.7	4.9	4.8

CHEM 162	Au10	WI11	Sp14	Sp15	A15	Sp17	Sp19	Sp20†	Au20†
Enrollment	288	120	288	288	336	263	281	285	221
Course as a whole was:	3.8	4.2	4.2	4.5	4.5	4.8	4.6	4.4	4.2
Course content was:	3.7	4.0	4.1	4.5	4.3	4.7	4.5	4.4	4.1
Instructor's contribution to course:	3.8	4.5	4.6	4.9	5.0	5.2	5.1	5.0	4.6
Instructor's effectiveness at teaching:	3.7	4.3	4.5	4.8	4.9	5.1	5.0	4.9	4.5
Combined items above:	3.7	4.2	4.3	4.7	4.7	5.0	4.8	4.7	4.3

† Taught remotely during the COVID-19 pandemic