

JENNIFER B. SORENSEN, Ph. D.

Department of Chemistry

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APPOINTMENTS

Seattle University | Seattle WA

Director, General Science Program 2005-2017

Director, Environmental Science Program 2005-2014

Assistant Professor of Chemistry 2005-present

Visiting Assistant Professor of Chemistry 2000-2005

Current Research and Scholarship: Science in community organizations | Science facilitation training | Clinical practice in science teacher education

University of Georgia | Athens GA

Instructor, Chemistry Department 1999

Graduate Research & Teaching Assistant 1995-1999

Research: Molecular mechanics of charged nitrogen species

Technical University of Budapest | Budapest, Hungary 1994-1995

Fulbright Student Scholar

Research: *Ab initio* modeling of phosphinoboranes**EDUCATION**

Ph.D. Physical Chemistry | University of Georgia | Athens GA 2000

Advisor: J. Phillip Bowen

Dissertation: *Computational Studies and Molecular Mechanics Parameterization of Protonated Amines and Diamines*

Science Education (MA coursework complete) | University of Georgia | Athens GA

B.S. Chemistry (ACS certified, minor in mathematics) | Fairfield University | Fairfield CT 1994

TEACHING AND MENTORING EXPERIENCE*Seattle University Courses**General Chemistry and University Core (General Education)*

General Chemistry I-III

General Chemistry Lab I-III

Preparatory Chemistry Tutorial

Introductory General Chemistry (incl. laboratory)

Introduction to Environmental Chemistry (incl. laboratory)

The Human Response to Science & Technology

Global Carbon Impacts

Fire, Fission, and Photons: The Chemistry of Energy (incl. laboratory)

Senior Synthesis (Undergraduate Research)

Senior Synthesis I: Research - for environmental science & general science majors

Senior Synthesis II: Seminar - for environmental science & general science majors

Special Topics

Campus Environmental Resource Project (fluorescent bulbs, summer 2000)
 Special Topics in Environmental Chemistry (DDT, summer 2004)
 Chemistry of Alternative Fuels (summer 2005)
 Special Topics in Environmental Chemistry (UV radiation, summer 2006)
 Introduction to Environmental Science
 Peer Mentor Training Seminar

University of Georgia Courses

Freshman Chemistry I
 Chemistry TA Training Seminar

Undergraduate Research Students

Katie Stick Washington Middle School Composting Program Development – Seattle University
 Daniel Tadesse Youth Initiative | 2013-2014
 Taylor Fannin Effective Use of Inquiry-Based Activities for After-School Science Programs | 2010-12
 Kristina Smith Antibiotic Activity of Pacific Northwest Plants: Ethnobotany Curriculum Development
 Nicholas Oen 2006-2012
 Erin Martin
 Maria Dougherty Soil Chemistry: Analysis of Soil Composition and Procedural Development for an
 Introduction to Environmental Chemistry Laboratory Experiment | 2006-2008
 Martina Tam Marketing Plan for Potters for Peace ceramic water filter – community education and
 Sarah Bell* distribution in Nicaragua; group project co-mentored with Peter Raven, Marketing dept.;
 Frank Colich* *denotes graduate business students | 2006-2007
 Steven Sack*
 Jason Nguyen On-site Composting: Process Monitoring and Community Education | 2004-2006
 Dustin Huard Force Field-Driven Conformational and Structural Analysis of Substituted Aldehydes
 Using Computational Chemistry Techniques | 2003-2005
 T. Tsuchikawa Conformational Studies of Phosphinoboranes | 2002-2004
 Patrick Kaehuaea *Ab Initio* Quantum Mechanical Calculations on Alpha-Substituted Ketones | 2001-2004
 Various students Over 170 literature-based senior projects mentored | 2006-2017

PUBLICATIONS

(a) Refereed Journal Publications

Paper Copters and Potential: Leveraging Afterschool and Youth Development Trainers to Extend the Reach of STEM Programs, S. A. Lingwood, J. B. Sorensen, *Afterschool Matters*, Fall 2014.

Calculating Interaction Energies Using First Principle Theories – Consideration of Basis Set Superposition Error and Fragment Relaxation, K.N. Kirschner, J.B. Sorensen, J.P. Bowen, *J. Chem. Educ.*, **84**, 1225 (2007).

An *Ab Initio* Study of the Electrostatics of Protonated Amines: Application to the Molecular Mechanics (MM3) Force Field, J. B. Sorensen, A. H. Lewin, J. P. Bowen, *THEOCHEM: J. Mol. Struct.*, **623**, 145 (2003).

Ab Initio Calculations and Molecular Mechanics (MM3) Parameterization of Protonated-Neutral Amine Hydrogen Bonds, J. B. Sorensen, A. H. Lewin, J. P. Bowen, *J. Org. Chem.*, **66**, 4105 (2001).

Molecular Mechanics (MM3) Parameterization for Oxocarbenium Ions, G. Liang, J. B. Sorensen, D. Whitmire, J. P. Bowen, *J. Comput. Chem.*, **21**, 329 (2000).

Computational Methods for Conformational Analysis of Unsymmetrical 1,3-Diamines: 3-Aminotropanes, A. H. Lewin, J. B. Sorensen, J. A. Dustman, J. P. Bowen, *J. Comput. Chem.*, **20**, 1371 (1999).

(b) Edited Book Chapters

Hanley, D., Miller, M., Sorensen, J., Rogan-Klyve, A. Preparing University Faculty for Clinically-oriented, Practice-based Teacher Education. In *Preparing Quality Teachers: Advances in Clinical Practice*; Polly, D., Ed.; Information Age Publishing: Charlotte, NC, in press 2022, pp-pp.

(c) Other Refereed Publications

Teaching Science Facilitation in a Community Organization, J. Sorensen, *Proceedings of the 2013 Western Region Research Conference on the Education of Adults*, Seattle Washington (2013).

(d) Curriculum and Professional Development Resources

Rogan-Klyve, A., Sorensen, J., Miller, M., Hanley, D., Hanuscin, D. (2021). "Core Practice Pedagogy: Coached Rehearsals." <https://serc.carleton.edu/stemteacherprep/resources/245280.html>

Sorensen, J., Hanuscin, D., Rogan-Klyve, A., Miller, M., Hanley, D. (2021). "Core Practice Pedagogy: Instructional Rounds." <https://serc.carleton.edu/stemteacherprep/resources/245277.html>

Hanuscin, D., Miller, M., Sorensen, J., Rogan-Klyve, A., Hanley, D. (2021). "Core Practice Pedagogy: Repeated Teaching Experiences." <https://serc.carleton.edu/stemteacherprep/resources/245274.html>

Miller, M., Sorensen, J., Hanley, D., Rogan-Klyve, A., Hanuscin, D. (2021). "Core Practice Pedagogy: Video Extensions." <https://serc.carleton.edu/stemteacherprep/resources/245267.html>

Hanley, D., Miller, M., Rogan-Klyve, A., Sorensen, J. (2021). Rubrics for Clinically-Oriented, Practice-Based Teacher Preparation. *Innovations in STEM Teacher Preparation*. <https://serc.carleton.edu/stemteacherprep/resources/245272.html>

Hanley, D., Miller, M., Rogan-Klyve, A., Sorensen, J. (2021). A Framework for Practice-Based Teacher Education. *Innovations in STEM Teacher Preparation*. <https://serc.carleton.edu/stemteacherprep/resources/245284.html>

PRESENTATIONS

Invited Workshops Led or Co-Led

"Teach Your Staff and Volunteers to Facilitate Science Inquiry" S. Lingwood, J. Sorensen, The Bridge from School to Afterschool and Back, Seattle WA, October 2013.

"Teach Your Staff and Volunteers to Facilitate Science Inquiry" S. Lingwood, J. Sorensen, Pacific Northwest Girls Collaborative Project Spring Forum - Increasing Impact: Engage Girls in STEM by Building Capacity, Seattle WA, May 2013.

"Embedding Inquiry Science in Girl Scouts" J. Sorensen, S. Lingwood, over 300 Girl Scout staff and volunteer facilitators trained through 1-3 day workshops, multiple locations in Washington, Oregon, California, and Maine, February-October 2012.

"Service Learning as a Campus-Based Endeavor" Seattle University Center for Excellence in Teaching and Learning workshop for faculty, March 2004.

Contributed Workshops Led or Co-Led

“Core Practices and Practice-Based Pedagogies in Science Teacher Preparation” D. Hanley, M. Miller, A. Rogan-Klyve, J. Sorensen, an offering of the NextGen-WA statewide consortium, April 2019.

“Teach Your Outreach Volunteers Effective Inquiry Facilitation Skills” J. Sorensen, S. Lingwood, Biennial Conference on Chemical Education, State College PA, July 2012.

“Building Inquiry Science Capacity in Youth Programs” J. Sorensen, S. Lingwood, National Girls Collaborative Project Collaboration Conference, Washington DC, April 2012.

“Building Inquiry Science Capacity in Youth Programs” J. Sorensen, S. Lingwood, 22nd Annual WEPAN National Conference in conjunction with Northwest Girls Collaborative Project, Bellevue WA, June 2011.

Contributed Research Presentations at Scholarly Meetings

“Preparing University Faculty for Clinically-Oriented, Practice-Based Teacher Education” D. Hanley, M. Miller, A. Rogan-Klyve, J. Sorensen, American Association of Colleges for Teacher Education 73rd Annual Meeting, Online, <https://videos.aacte.org/124-preparing-university-faculty-for-clinically-2>, February 2021.

“Pedagogies of Practice-Based Teacher Education” A. Rogan-Klyve, J. Sorensen, M. Miller, D. Hanley, The Association for Science Teacher Education International Conference, San Antonio, TX, January 2020.

“Evaluating and Enhancing Teacher Education Programs and School-University Partnerships for Practice-Based STEM Teacher Preparation” J. Sorensen, D. Hanley, A. Rogan-Klyve, M. Miller, National Science Teaching Association Area Conference, Seattle, WA, December 2019.

“Creating a culture of science: Embedding inquiry science in a youth organization” S. Lingwood, J. Sorensen, National Girls Collaborative Project Collaboration Conference, Washington DC, October 2010. (poster)

“Creating a culture of science inquiry in a volunteer-driven youth organization” J. Sorensen, S. Lingwood, 2010 National Conference on Science and Technology in Out of School Time, Universal City, CA, September 2010. (poster)

“Creating a culture of science inquiry in a volunteer-driven youth organization” J. Sorensen, S. Lingwood, 239th Meeting of the American Chemical Society, San Francisco, CA, March 2010.

“What does it mean to be ‘college ready’?” J. Sorensen, T. Hancock, 239th Meeting of the American Chemical Society, San Francisco, CA, March 2010.

“Demonstrating ‘Numeracy’ in Non-Major Chemistry Courses” J. Sorensen, 18th Biennial Conference on Chemical Education, Ames, IA, July 2004.

“Evaluating the Outcomes of Academic Service Learning” J. B. Sorensen, 226th Meeting of the American Chemical Society, New York, NY, September 2003.

“Service Learning Across the Chemistry Curriculum: Collaborative and complimentary projects” J. Sorensen, S. C. Jackels, 17th Biennial Conference on Chemical Education, Bellingham, WA, July 2002.

“Chemistry Service Learning at Seattle University” J. Sorensen, 2001 Northwest Regional Meeting of the American Chemical Society, Seattle, WA, June 2001.

“Computational Methods for Conformational Analysis of Unsymmetrical 1,3-Diamines: 3-Aminotropane” J. B. Sorensen, A. H. Lewin, J. P. Bowen, 217th Meeting of the American Chemical Society, Anaheim, CA, March 1999. (poster)

“Molecular Mechanics (MM3) Development of a Polyamine Force Field” J. B. Sorensen, A. H. Lewin, J. P. Bowen, 216th Meeting of the American Chemical Society, Boston, MA, August 1998. (poster)

“Conformational Preferences of α - and β -Substituted Cyclohexanones and Application to Molecular Mechanics (MM3)” J. B. Sorensen, J. P. Bowen, 216th Meeting of the American Chemical Society, Boston, MA, August 1998. (poster)

“Defining the Future of Distance Learning: Tomorrow’s Classroom” J. B. Sorensen, 8th Annual Conference on New Directions in Critical Theory, Tucson, AZ, March 1998.

Invited Lectures and Presentations

“Preparing Next Generation STEM Teachers” E. Geary, J. Antilla, K. Baldwin, J. DeChaine, D. Hanley, T. Holmlund, J. Pasley, J. Rios, R. Ronca, J. Sorensen, A. Wright-Mockler, NSF STEM For All Video Showcase, May 2019.

“Facilitating Potential: Lessons Learned from Engaging Women in STEM” Seattle University Advantage Alumni Networking Event, May 2015.

“Seattle University at the Frontiers of Environmental Justice and Sustainability” Seattle University Mission Day, April 2013.

“Building Inquiry Science Capacity in Youth Programs” (with S. Lingwood) National Science Foundation, Washington DC, April 2012.

“200 Words” Seattle University ‘Time Out’ Sophomore Retreat, January 2011, April 2013.

“Jesuit Education at Seattle University” Seattle University Fall Preview Day, November 2009.

“Sustainability at Seattle University” Seattle University Board of Regents, December 2008.

“Sustainability as an Academic Endeavor” Seattle University Faculty-Staff Convocation, September 2008.

“A Faculty Perspective on Jesuit Education at Seattle University” Seattle University Summer Orientation keynote speech to parents, July 2008, July 2009.

“Majors and Careers in the Chemical Sciences” American Chemical Society/American Association of Clinical Chemistry workshop for high school teachers, Bellevue WA, October 2005.

“Encouraging the Next Generation of Female Scientists and Engineers” University of Washington Women in Science and Engineering Conference, Seattle WA, April 2003.

EXTERNAL FUNDING

National Science Foundation | DRL-0813455 | 2008-2013 | SU award \$205,045 | total award \$920,458
Inquiry in the Community: Building Science Capacity in Volunteer Leaders
Collaborative grant with Girl Scouts of Western Washington (DRL-0813464)

SELECTED INTERNAL FUNDING AND AWARDS

Outstanding Faculty Advisor, College of Science and Engineering, Seattle University	2012-2013
Scholarship of Teaching and Learning Writing Retreat, Seattle University	2011
Assessment Grant, Provost's Office, Seattle University	2009-2010
Endowed Mission Fund, Division of Mission and Ministry, Seattle University	2007-2008
Provost's Colloquium, Seattle University	2005, 2008
Academic Service-Learning Faculty Fellow, Seattle University	2001-2002
Graduate School Teaching Seminar Assistantship, University of Georgia	1997-1998
Outstanding Teaching Assistant, Department of Chemistry, University of Georgia	1995-1996

SELECTED PROFESSIONAL SERVICE AT SEATTLE UNIVERSITY

Interim Director, Sullivan Leadership Program	2021-2022
College Faculty Liaison to Center for Digital Learning & Innovation	2020-2021
Cohort Mentor, Sullivan Leadership Program	2018-2021
Center for Community Engagement – College of S&E Strategic Planning Committee	2017-present
Conduct Review Board and Organizations Review Board	2017-present
Search Committee: Senior Administrative Assistant, Chemistry Department	2016, 2018
Search Committee: Instructor, Chemistry Department	2018
Search Committee: Tenure Track Assistant Professor, Chemistry Department	2017
University Student Award Selection Committee	2017
Core Curriculum Committee	2017-present
Indigenous Peoples' Institute Partnership Council	2016-present
Environmental Science Program Advisory Board	2015-present
Program Development Team: Undergraduate STEM Teacher Certification	2015-present
General Chemistry Committee, Chemistry Department	2015-present
Consortium to Promote Reflection in Engineering Education (CPREE) Project Team	2015-2016
Search Committee: Environmental Science Instructor	2014
Search Committee: Academic Advisor, College of Science and Engineering	2013
Health Professions Evaluation Committee co-chair, 2014	2014
Fund for Engagement Selection Committee, SU Youth Initiative chair, 2013	2012-2013
Center for Environmental Justice and Sustainability Steering Committee	2011-2015
Center for Environmental Justice and Sustainability Co-Founder	2011-2013
Pre-Health Advisory Committee	2011-2013
Leadership Development Advisory Board	2010-2012
University Core Revision Committee	2010-2011
Search Committee: Director of Housing and Residence Life	2010
Vocational Discernment Working Group; Faculty Outreach Committee	2009-2012
National Teach-In for Global Warming Solutions Campus Coordinator	2008-2009
Academic Assembly, College of Science and Engineering Faculty Representative	2007-2010
Housing and Residence Life Advisory Board	2007-2010

Core Advancement Portfolio Exam (CAPE) Reader	2007-2009
Udall Scholarship Campus Nominating Committee	2006-2010
Fall Preview Day and Accepted Student Open House Faculty Representative	2006-2014
Department Assessment Coordinator	2005-2014
College of Science and Engineering Curriculum Committee chair, 2014-2016	2005-2016
A.A. Lemieux Library Faculty Representative	2005-2014
College of Science and Engineering Dean's Executive Committee	2005-2014
Search Committee: Campus Sustainability Manager	2005
Environmental Advisory Council web administrator, 2004-2005 co-chair, 2006-2009	2004-2009
Calibrated Peer Review Campus Administrator	2001-present

PROFESSIONAL SERVICE WITH EXTERNAL AGENCIES

WA NextGen STEM Project Website Editor, clinical practice resources	2021
WA NextGen STEM Project Clinical Practice Working Group core team	2016-present
WA NextGen STEM Project workshop host	2015, 2017, 2019, 2020
National Science Foundation Panel Reviewer (2) and <i>ad hoc</i> review (3)	2015, 2018
State of the Girl(s) Summit Advisory Committee	2012-2013
Curriculum for the Bioregion Advisory Board	2010-2015
Seattle City Light Integrated Resource Plan Stakeholders Group	2007-2015
Science Content Team and Phase II Science Pilot Team, College Readiness Project, Washington State Higher Education Coordinating Board	2006-2010
Master Recycler Composter, King County, Washington	2006-2014
Second Term General Chemistry Exam Committee, American Chemical Society Exams Institute 2006 Exam 2009 Exam 2014 Exam, chair	2004-2014
Symposium Organizer (with Trace Jordan, New York University), 226 th Meeting of the American Chemical Society: "Science and Society: Linking Chemistry with Service Learning and Public Policy Issues"	2003
Reviewer, <i>Journal of Chemical Education</i>	2000-present
Seattle Expanding Your Horizons Conference Planning Committee	2000-2016
Refreshments Chair Volunteer Coordinator Conference Chair Adult Program Coordinator Outreach and Publicity Coordinator Workshop Presenter External Affairs Liaison	
Academic Honesty Hearings Panelist, University of Georgia	1998-1999
Georgia State Science Fair Judge	1998-1999
Clarke County School District Science Fair Judge	1997-1999

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

American Chemical Society	1998-present
Association for Science Teacher Education	2019-present
National Science Teaching Association	2019-present

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Association for Environmental Studies and Sciences

2010-2014

National Girls Collaborative Project

2007-2013

National Academic Advising Association

2005-2014