Curriculum Vitae
Steven Michael Drew

Present Address

Carleton College
Department of Chemistry
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Education

1985-1989 University of Colorado, Boulder, Colorado
Ph.D. in Chemistry, Advisor: Carl A. Koval

1983-1985 St. John's University, Collegeville, Minnesota
B.A. in Chemistry, *summa cum laude*

1981-1983 North Dakota State University, Fargo, North Dakota
Transferred to St. John's University

Professional Experience

2004-present Professor of Chemistry
Carleton College, Northfield, Minnesota

2016-2022 Charles "Jim" and Marjorie Kade Professor of the Sciences and Chemistry
Carleton College, Northfield, Minnesota

2014-2015 Sabbatical Research Appointment
University of Wyoming, Laramie, Wyoming
Research Group of Professor Bruce A. Parkinson

2002-2005 Chemistry Department Chair
Carleton College, Northfield, Minnesota

1997-2004 Associate Professor of Chemistry
Carleton College, Northfield, Minnesota

2000-2001 Sabbatical Research Appointments
2007-2008 University of Minnesota, Minneapolis, Minnesota
Research Group of Professor Kent R. Mann

1997, 1999 Acting Associate Dean of the College
Carleton College, Northfield, Minnesota

1991-1997 Assistant Professor of Chemistry
Carleton College, Northfield, Minnesota

1989-1991 Postdoctoral Research Associate
University of North Carolina, Chapel Hill, North Carolina
Mentor: R. Mark Wightman

Professional Societies

Project Kaleidoscope Faculty for the 21st Century Class of 1998
American Chemical Society
Division of Analytical Chemistry, Inorganic Chemistry, Chemical Education
Sigma Xi
Council on Undergraduate Research

Invited Seminars

- Macalester College, Department of Chemistry, October 6, 2021, “Renewable Energy Storage: Applications of Electrochemistry.” Undergraduate co-authors: all research students since 2015.
- Grinnell College, Department of Chemistry, October 31, 2019, “Renewable Energy Storage: Applications of Electrochemistry.” Undergraduate co-authors: all research students since 2015.
- Gustavus Adolphus College, Department of Chemistry, March 15, 2019, “Renewable Energy Storage: Applications of Electrochemistry.” Undergraduate co-authors: all research students since 2015.
- St. Catherine University, Department of Chemistry, October 30, 2015, “Vapochromic Platinum(II) Extended Linear Chain Materials: Properties and Analytical Applications.” Undergraduate co-authors: all research students since 2001.
- CCI-Solar Cybermeeting Seminar Series, Laramie, WY, November 13, 2014, “The SHArK II Scanner and New Sample Preparation Techniques.” Copresenters: Lauren A. King and Michael L. Grossett.
- University of Texas, Austin, Eric Ansyln Research Group, December 6, 2013, "Vapochromic Platinum(II) Extended Linear Chain Materials: Properties and Analytical Applications." Undergraduate co-authors: all research students since 2001.
- University of Wyoming Department of Chemistry, September 3, 2013, "Vapochromic Platinum(II) Extended Linear Chain Materials: Properties and Analytical Applications." Undergraduate co-authors: all research students since 2001.
- Illinois State University, Department of Chemistry, Normal, IL, 2004, “Cross-Reactive Array Sensing Based on Vapochromic Platinum Double Salt Materials.” Undergraduate co-authors: Anthony Wong and Travis Ruthenburg.
- University of Illinois, Division of Analytical Chemistry, Champaign-Urbana, IL, 2003, “Cross-Reactive Array Sensing Based on Vapochromic Platinum Double Salt Materials,” Undergraduate co-authors: Anthony Wong and Travis Ruthenburg.
- University of Minnesota, Division of Analytical Chemistry, Minneapolis, MN, 2003, “Cross-Reactive Array Sensing Based on Vapochromic Platinum Double Salt Materials,” Undergraduate co-author: Anthony Wong
- College of St. Benedict/St. John's University, Department of Chemistry, St. Joseph, MN, 2001, “Potential Gas Sensing Applications of Vapoluminescent Materials Based on Square Planar Platinum Complexes.”
- Grinnell College, Department of Chemistry, Grinnell, IA, 1999, “Iron Porphyrin Polymer Films: Materials for the Modification of Electrode Surfaces and the Detection of Nitric Oxide,” Undergraduate co-authors: Molly McGuire, E. Joseph Nemanick, Sonia Kuester.
- University of Minnesota, Division of Analytical Chemistry, Minneapolis, MN, 1995, “Iron Porphyrin Polymer Films: Materials for the Modification of Electrode Surfaces and the Detection of Nitric Oxide,” Undergraduate co-authors: Molly McGuire and Angela Dickens.
- University of Florida, Department of Chemistry, Gainesville, FL, 1995, “An Investigative Approach to Teaching Analytical Chemistry Using a Research Group Setting.”
- Keynote speaker for senior banquet, College of St. Benedict/St. John's University, Department of Chemistry, St. Joseph, MN, 1993, "Electrochemical Investigations at Electrode Microstructures."

Peer-Reviewed Publications

20. Steven M. Drew, Tristan Belzer, "An Amperometric Glucose Biosensor Composed of Prussian Blue, Nafion, and Glucose Oxidase Studied by Flow Injection Analysis," *Journal of Chemical Education*, **2023**, *100*, 760-766.
19. Steven M. Drew, Deborah S. Gross, William E. Hollingsworth, Thomas Baraniak, Christopher M. Zall, Kent R. Mann, "Overdriven Pulsed Light Emitting Diodes: An Inexpensive Excitation Source for Time-Resolved Luminescence Lifetime Measurements," *Journal of Chemical Education*, **2019**, *96*, 1046-1050.
18. Elijah Mae Christensen, SaeRam Oh, Devin Oliver, Daron E. Janzen, Steven M. Drew, "Solution and Solid-State Structure of *cis*-Dichloro-(N,N'-dimethylethylenediamine) platinum(II)," *Journal of Chemical Crystallography* **2014**, *44*, 236-242.
17. Matthew J. Cich, Ian M. Hill, Aaron D. Lackner, Ryan J. Martinez, Travis C. Ruthenburg, Yuichiro Takeshita, Andrew J. Young, Steven M. Drew, Carrie E. Buss, Kent R. Mann, "Enantiomerically Selective Vapochromic Sensing," *Sensors and Actuators B* **2010**, *149*, 199-204.
16. Steven M. Drew, Lisa I. Smith, Kari A. McGee, Kent R. Mann, "A Platinum(II) Extended Linear Chain Material that Selectively Uptakes Benzene," *Chemistry of Materials* **2009**, *21*, 3117-3124.
15. Ted M. Pappenfus, Bethany J. Hermanson, Tyler J. Helland, Garett G. W. Lee, Steven M. Drew, Kent R. Mann, Kari A. McGee, Seth C. Rasmussen, "Reduced Band Gap Dithieno[3,2-b:2',3'-d]pyrroles: New n-Type Organic Materials via Unexpected Reactivity" *Organic Letters* **2008**, *10*, 1553-1556.
14. Steven M. Drew, Jennifer E. Mann, Brian J. Marquardt, Kent R. Mann, "A Humidity Sensor Based on Vapoluminescent Platinum(II) Double Salt Materials," *Sensors and Actuators B* **2004**, *97*, 307-312.
13. Ted M. Pappenfus, Jonathan D. Raff, Eric J. Hukkanen, Jason R. Burney, Juan Casado, Steven M. Drew, Larry L. Miller, Kent R. Mann, "Dinitro and Quinodimethane Derivatives of Terthiophene That Can Be Both Oxidized and Reduced. Crystal Structures, Spectra and a Method for Analyzing Quinoid Contributions to Structure" *Journal of Organic Chemistry* **2002**, *67*, 6015-6024.
12. Steven M. Drew, Daron E. Janzen, Kent R. Mann, "Characterization of a Cross-Reactive Electronic Nose with Vapoluminescent Array Elements" *Analytical Chemistry* **2002**, *74*, 2547-2555.
11. Jay W. Grate, Leslie K. Moore, Daron E. Janzen, David J. Veltkamp, Steve Kaganove, Steven M. Drew, Kent R. Mann, "Step-like Response Behavior of a New Vapochromic Platinum Complex Observed with Simultaneous Acoustic Wave Sensor and Optical Reflectance Measurements" *Chemistry of Materials* **2002**, *14*, 1058-1066
10. Steven M. Drew, Daron E. Janzen, Carrie E. Buss, Daniel I. MacEwan, Kimberly M. Dublin, Kent R. Mann, "An Electronic Nose Transducer Array of Vapoluminescent Platinum (II) Double Salts" *Journal of the American Chemical Society* **2001**, *123*, 8414-8415.
9. Sonia N. Kuester, Molly M. McGuire, Steven M. Drew, "Electrochemically-Initiated Polymerization of Zinc(II)5-vinyl-10,15,20-triphenylporphyrin" *Journal of Electroanalytical Chemistry* **1998**, *452*, 13.
8. Steven M. Drew, "Integration of National Instruments' LabVIEW Software into the Chemistry Curriculum" *Journal of Chemical Education* **1996**, *73*, 1107.
7. N. Jemma, J. Yu, Richard D. Noble, Steven M. Drew, Doug E. Wedmen, C. A. Koval, "Two Methods to Study Aggregation of Complexing Agents Used to Alter Solute Partitioning Between Phases" *Separation Science and Tecnology* **1992**, *27*, 901.

6. Joan E. Bartelt, Steven M. Drew, and R. Mark Wightman, "Electrochemiluminescence at Band Array Electrodes" *Journal of the Electrochemical Society* **1992**, *139*, 70.
5. Steven M. Drew, R. Mark Wightman, Christian A. Amatore, "Voltammetry of Ferrocene in Low Electrolyte Solutions" *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry* **1991**, *317*, 117.
4. Carl A. Koval, Steven M. Drew, Richard D. Nobel, and J. Yu, "Electrochemistry of a Water-Soluble Iron Porphyrin and Its Exploitation for Selective Removal and Concentration of Environmentally Hazardous Materials via Electrochemically Modulated Complexation" *Inorganic Chemistry* **1990**, *29*, 4708.
3. Carl A. Koval and Steven M. Drew, "Catalytic Effect of Sulfur Dioxide on the Electrode Kinetics of the Triiodide/Iodide Couple" *Inorganic Chemistry* **1988**, *27*, 4323.
2. Carl A. Koval, Steven M. Drew, Terry Spontarelli, and Richard D. Noble, "Separations of olefins and heterocyclic organic compounds based on reversible complexation reactions" *Preprints of Papers - American Chemical Society, Division of Fuel Chemistry* **1988**, *33*, 289-291.
1. Carl A. Koval, Steven M. Drew, Terry Spontarelli, and Richard D. Noble, "Concentration and Removal of Nitrogen and Sulfur Compounds from Organic Liquids Using Electrochemically Modulated Chemical Complexation" *Separation Science and Technology* **1988**, *23*, 1389.

Conference Presentations

- 2020 Biennial Conference on Chemical Education, Corvallis, OR "Concepts of Chemistry: A Chemistry Course for Non-Science Majors at Carleton College." Abstract accepted March 31, 2020. Because of the global COVID-19 pandemic, the 2020 Biennial Conference on Chemical Education was terminated on April 2, 2020, by the Executive Committee of the Division of Chemical Education, American Chemical Society; and, therefore, this presentation could not be given as intended.
- 233rd National American Chemical Society Meeting, Chicago, IL, 2007, "Modern Chemical Instrumentation in the Introductory Chemistry Laboratory: Examples of Multi-Week Inquiry-Based Projects that Illustrate the Power of Advanced Instrumentation."
- 53rd Annual Midwestern Universities Analytical Chemistry Conference, Normal, IL, 1999, "Electrocatalytic Detection of Nitric Oxide at a Carbon Fiber Microelectrode Modified with an Iron Porphyrin Polymer Film: The Basis for a New NO Microsensor?."
- 29th American Chemical Society Great Lakes Regional Meeting, Normal, IL, 1996, "Iron Porphyrin Polymer Films: Materials for the Modification of Electrode Surfaces and the Detection of Nitric Oxide," Undergraduate co-authors: Molly McGuire and Angela Dickens.
- 208th National American Chemical Society Meeting, Washington, DC, 1994, "Recent Developments in the Laboratory Curriculum at Carleton That Take Advantage of Analytical Instrumentation Controlled by Computer Workstations."
- 208th National American Chemical Society Meeting, Washington, DC, 1994, "Enhancement of an Investigative Laboratory Curriculum with Analytical Instrumentation Controlled by Computer Workstations."
- 200th National American Chemical Society Meeting, Washington, DC, 1990, "Separation Processes Utilizing Electrochemically Modulated Complexation."

- 31st Rocky Mountain Conference, Denver, CO, 1989, "The Electrochemistry of a Water-Soluble Iron Porphyrin and Its Exploitation in a Novel Separation Process."
- 196th National American Chemical Society Meeting, Los Angeles, CA, 1988, "Use of Electrochemically Modulated Metalloporphyrin Binding Sites for Selective Separations."

Conference Posters

- CCI Solar Fuels Annual Meeting, Newport Beach, CA, February 6, 2016, "Solar Hydrogen Activity research Kit (SHArK)," Presented by Lauren A. King, Coauthors: John G. Rowley, Michael L. Grossett, Steven M. Drew, Bruce A. Parkinson.
- SUNCAT Summer Institute Poster Session, Stanford, CA, August 24, 2015, "Solar Hydrogen Activity research Kit (SHArK)," Presented by Lauren A. King, Coauthors: John G. Rowley, Michael L. Grossett, Steven M. Drew, Bruce A. Parkinson.
- CCI-Solar NSF Site Visit Meeting, Pasadena, CA, May 15, 2015, "Solar Hydrogen Activity research Kit (SHArK)," Presented by Lauren A. King, Coauthors: John G. Rowley, Michael L. Grossett, Victoria A. Kong, Steven M. Drew, Bruce A. Parkinson.
- 239th National American Chemical Society Meeting, San Francisco, CA, 2010, "Evidence for Enantiomerically Selective Vapochromic Sensing," Undergraduate co-authors: Matthew J. Cich, Ian M. Hill, Ryan J. Martinez and Yuichiro Takeshita.
- 236th National American Chemical Society Meeting, Philadelphia, PA, 2008, "A Platinum(II) Extended Linear Chain Material that Selectively Uptakes Benzene."
- Council on Undergraduate Research National Meeting, College of St. Benedict, St. Joseph, MN, 2008, "Evidence for Enantiometric Selectivity in a Luminescent Extended Linear Chain Vapochromic Material that Responds to Volatile Organic Compounds." Undergraduate co-authors: Ryan Martinez, Matthew Cich, Ian Hill, Yuichiro Takeshita, Aaron Lackner, and Andrew Young.
- 227th National American Chemical Society Meeting, Anaheim, CA, 2004, "Vapoluminescent Platinum(II) Extended Linear Chain Materials Capable of Sensing Humidity." Undergraduate co-authors: Anthony Wong and Travis Ruthenburg.
- 222nd National American Chemical Society Meeting, Chicago, IL, 2001, "Potential Gas Sensing Applications of Vapochromic Materials Comprised of Square Planar Platinum Complexes." Undergraduate co-authors: Anthony Wong and Travis Ruthenburg.
- Pittsburgh Conference, New Orleans, LA, 2000, "Amperometric Detection of Nitric Oxide at Carbon Fiber Microelectrodes Modified with Iron Porphyrin Films," Undergraduate co-authors: E. Joseph Nemanick and Daniel J. Harris
- Winter Gordon Conference on Electrochemistry, Ventura, CA, 1996, "Iron Porphyrin Polymer Films: Materials for the Electrocatalytic Detection of Nitric Oxide," Undergraduate co-authors: Molly McGuire and Angela Dickens.
- Winter Gordon Conference on Electrochemistry, Ventura, CA, 1992, "Electrochemistry of Ferrocene in Low Ionic Strength Solutions."

Grants and Awards

Summer 2022	Aines Climate Solutions Fund grant for a summer student stipend and research supplies: $5,000.
Summer 2021	Towsley Endowment grant for a summer student stipend and research supplies: $5,300.
2018-2021	National Science Foundation Major Research Instrumentation (MRI) grant for the proposal "MRI: Acquisition of a Variable Pressure Scanning Electron Microscope at

	Carleton College," PI: Cameron Davidson, co-PI's: Steven Drew and Anne Gothmann (St. Olaf College). $437,589.
2018	Curriculum Development Grant for the proposal "Development of 300-Level Chemistry Course on Materials," $1,200.
Summer 2017	Towsley Endowment grant for a summer student stipend and research supplies: $5,000.
Summer 2016	Towsley Endowment grant for a summer student stipend and research supplies: $5,000.
2016	Curriculum Development Grant for the proposal "Development of Principles of Chemistry II: A revision of the introductory chemistry curriculum," $1,200.
2014-2015	HHMI Curriculum Development Grant for the proposal "Construction and Characterization of Perovskite Thin Film Photovoltaic Devices: Development of a New Chemistry Lab Final Project," $3,000.
2014-2015	HHMI Curriculum Development Grant for the proposal "Development of Software and Instrumentation for Current-Voltage Characterization of Photovoltaic Devices," $3,000.
2014-2015	Faculty Development Grant for sabbatical support: one third salary
Summer 2014	HHMI/Towsley grant for a summer student stipend and research supplies: $4,900.
Summer 2013	HHMI grant for a summer student stipend and research supplies: $4,900.
2012-2015	National Science Foundation Major Research Instrumentation (MRI) grant for the proposal "MRI: Acquisition of a Mass Spectrometer for Research and Research Training in Chemistry and Biochemistry at Carleton College," PI: Deborah Gross, co-PI's: David Alberg, Joe Chihade, Gretchen Hofmeister. $351,622.
Summer 2012	HHMI grant for a summer student stipend and research supplies: $4,900.
2011-2014	National Science Foundation Major Research Instrumentation (MRI) grant for the proposal "MRI Consortium: Acquisition of a Single-Crystal X-ray Diffractometer for a Regional PUI Molecular Structure Facility," PI: Daron Janzen (St. Catherine University), co-PI's: Ted Pappenfus (University of Minnesota, Morris), James Wollack (St. Catherine University), Alicia Peterson (College of St. Benedict). $201,787.
Summer 2011	HHMI grant for a summer student stipend and research supplies: $4,900.
2010-2013	National Science Foundation Major Research Instrumentation (MRI) grant for the proposal "Acquisition of an X-ray Diffractometer for Powder and Thin Film Materials Characterization," PI: Melissa Eblen-Zayas, co-PI: Cameron Davidson. $305,000.
2010	HHMI Curriculum Development Grant for "Introduction of Green Synthetic Methods into a Materials Chemistry Themed Principles of Chemistry Course": $3,000.
2009	Carleton Curriculum Development Fund Grant for "Further Development of a Materials Chemistry Themed Principles of Chemistry Course": $3,000. HHMI Curriculum Development Grant for "Further Development of a Materials Chemistry Themed Principles of Chemistry Course": $1,000.
2008-2010	ACM FaCE Enhancing Scholarly Agendas Grant for the proposal "Acquiring Proficiency in the Technique of X-ray Crystallography": $2,759
2007-2008	Eugster Faculty Development Grant for sabbatical support: one third salary
2004-2007	Petroleum Research Fund of the American Chemical Society Type B grant for the proposal "The Synthesis and Characterization of Chiral Platinum(II) Extended Linear Chain Materials and Their Potential Application as Gas Sensing Transducers": $50,000

2002-2003	Research Site for Educators in Chemistry (RSEC) grant through the University of Minnesota and the National Science Foundation, “The Synthesis and Characterization of Chiral Platinum(II) Double Salt Materials and Their Application in the Detection of Chiral Gases”: $20,000.
2001-2002	National Science Foundation Course, Curriculum, and Laboratory Instrumentation (CCLI) grant, “Integration of Capillary Column Gas Chromatography into Project-Oriented Laboratories,” co-PI’s: Deborah Gross, Jerry Mohrig, Will Hollingsworth, David Alberg. $35,050.
2001-2003	National Science Foundation Chemical Research Instrumentation and Facilities (CRIF) grant, “Acquisition of an Electrospray/Atmospheric Pressure Chemical Ionization Ion Trap Mass Spectrometer to Support Student-Faculty Research at Carleton College,” co-PI’s: Deborah Gross, Marion Cass, David Alberg, Jerry Mohrig. $106,050.
2000-2001	Targeted Relief Grant for sabbatical support: one third salary
Summer 2000	Howard Hughes Medical Institute grant for summer research/faculty development at the University of Minnesota: $20,000.
Summer 1999	Howard Hughes Medical Institute grant for a summer student stipend and research supplies: $3,800.
1998-2003	National Institutes of Health Academic Research Enrichment Award grant for the proposal "Microsensors for Nitric Oxide--Design and Evaluation": $95,614
Summer 1998	Howard Hughes Medical Institute grant for a summer student stipend and research supplies: $3,800.
1997-1998	Howard Hughes Medical Institute grant for the development of a computer controlled modular fiber optics based spectrophotometer for use in sophomore Analytical Chemistry: $35,000
1995-1999	Petroleum Research Fund of the American Chemical Society Type B grant for the proposal “The Electrochemical Polymerization of a Novel Vinyl-Substituted Iron Porphyrin and the Electrochemistry of Nitric Oxide at the Resulting Polymer Film”: $25,000.
1995-1996	Curricular Computing Grant for the proposal “Exploration of Mobile Computing Applications in the Chemistry Laboratory.”
Summer 1995	Howard Hughes Medical Institute grant for a summer student stipend, research supplies, and student travel to a conference: $3,800.
Summer 1993	Howard Hughes Medical Institute grant for a summer student stipend and research supplies: $3,000.
Summer 1993	3M Foundation grant for summer research supplies: $250.
1992-1995	Instrumentation and Laboratory Improvement Program of the National Science Foundation grant for the proposal "Enhancement of an Investigative Curriculum with Analytical Instrumentation Controlled by Computer Workstations": $42,326.
1992-1995	3M Foundation grant of matching funds for the NSF funded proposal "Enhancement of an Investigative Curriculum with Analytical Instrumentation Controlled by Computer Workstations": $42,326.
1992-1995	Petroleum Research Fund of the American Chemical Society Type G grant for the proposal "Synthesis and Electrochemical Polymerization of Vinyl-Substituted Iron Porphyrins": $18,000.
Summer 1992	Howard Hughes Medical Institute grant for a summer student stipend and research supplies: $3,250.
1992-1994	The Research Corporation grant for the proposal "Synthesis and Electrochemical Polymerization of Vinyl-Substituted Iron Porphyrins": $28,500.

1991-1992 Howard Hughes Medical Institute grant for curriculum development: $1,200.
1991 Carleton College Research Start Up Funds: $38,000

Other Professional Activities

2022-2023 Instructor in the Carleton Connection in STEM Summer Liberal Arts Institute (SLAI)
Reviewed a faculty member for tenure at another institution.
Reviewed an American Chemical Society Petroleum Research Fund proposal.
Reviewed two manuscripts submitted for publication in *Journal of Chemical Education*.

2021-2022 Reviewed a manuscript submitted for publication in *Environmental Progress and Sustainable Energy*.
Reviewed an American Chemical Society Petroleum Research Fund proposal.

2020-2021 Reviewed a manuscript submitted for publication in *Environmental Progress and Sustainable Energy*.
Reviewed two manuscripts submitted for publication in *Journal of Chemical Education*.

2019-2020 Reviewed a manuscript submitted for publication in *Journal of Chemical Education*.
Presented an on-campus talk on my research titled "Renewable Energy Storage: Is hydrogen the new gasoline?" as part of the Faculty Retreat.

2018-2019 Reviewed a faculty member for tenure at another institution.
Presented an on-campus public talk on my research titled "Renewable Energy Storage: Applications of Electrochemistry" as part of my appointment as the Charles and Marjorie Kade Professor of Chemistry.
Ph.D. Thesis Evaluator, Pondicherry University Center for Green Energy Technology, Sudhakar. S, "Graphene-Based Electrocatalytic Materials for Oxygen Reduction Reaction (OOR) in Fuel Cell Application," Research Supervisor: Prof. Arun Prasath.

2017-2018 Instructor in the Carleton Summer Science Institute (CSSI)
Reviewed colleague for promotion at another institution.
Reviewed a manuscript submitted for publication in the *Journal of Materials Science*

2016-2017 Instructor in the Carleton Summer Teaching Institute
Co-Director of the Carleton Summer Science Institute (CSSI)
Reviewed two proposals for the Puerto Rico Science, Technology and Research Trust
Presented Science Show for student assembly at St. Dominic School, Northfield, MN

2015-2016 Carleton College Energy Symposium Talk "Renewable Solar Fuels"
Instructor in the Carleton Summer Teaching Institute
Contributed to a faculty evaluation for tenure at Indiana University, Bloomington, IN
Reviewed a manuscript submitted for publication in *Organometallics*
Reviewed a manuscript submitted for publication in *Journal of Chemical Education*

2014-2015 Co-Director of the Carleton Summer Science Institute (CSSI)
Instructor in the Carleton Summer Teaching Institute
Carleton Summer Tea Talk "The Chemistry of 'Breaking Bad.' What's real and what's fake"

2013-2014 Co-Director of the Carleton Summer Science Institute (CSSI)
Instructor in the Carleton Summer Teaching Institute.
Reviewed a faculty member for promotion at another institution.
Reviewed two faculty members for tenure at two different institutions.

2012-2013 Co-Director of the Carleton Summer Science Institute (CSSI)
Hosted the Minnesota Analytical Professors Society Meeting

2011-2012	Reviewed a faculty member for promotion at another institution.
	Taught a short course and did research with high school students on the chemistry of materials in the Carleton Summer Science Institute (CSSI)
	Reviewed a National Science Foundation Division of Chemistry research proposal
2010-2011	Reviewed a manuscript submitted for publication in the *Sensors and Actuators, B.*
	Reviewed a faculty member at another institution as part of a third-year review.
	Participated in a College Board AP chemistry research study that provided input for the new AP Chemistry curriculum
	Reviewed an American Chemical Society Petroleum Research Fund proposal
	Reviewed a manuscript submitted for publication in *Organometallics*
2009-2010	Reviewed several chapters and a prospectus for *Chemistry: Atoms First* by Engel, Heinekey, and Reid
	Reviewed an American Chemical Society Petroleum Research Fund proposal
	Reviewed *Principles of Modern Chemistry* 6th ed. by Oxtoby, Gillis, and Campion and a proposed Table of Contents for the 7th ed.
	Reviewed a faculty member for promotion at another institution.
	Reviewed a manuscript submitted for publication in the *Journal of Chemical Education*
2008-2009	Reviewed a faculty member for tenure at another institution.
	Reviewed a manuscript submitted for publication in the *Journal of Chemical Education*
2007-2008	Reviewed a manuscript submitted for publication in the Journal *Sensors*
	Reviewed a National Science Foundation Division of Chemistry research proposal
	Reviewed a manuscript submitted for publication in the *Journal of Chemical Education*
2006-2007	Reviewed a manuscript submitted for publication in the *Journal of Chemical Education*
2005-2006	Reviewed two American Chemical Society Petroleum Research Fund proposals
	Reviewed a manuscript submitted for publication in the *Journal of Chemical Education*
	Reviewed proposed Table of Contents for *Principles of Modern Chemistry* 6th ed. by Oxtoby, Gillis, and Campion
2004-2005	Attended "NSF Workshop on Implementation of Undergraduate Research Centers," National Science Foundation, Arlington, VA
	Reviewed an American Chemical Society Petroleum Research Fund proposal
2003-2004	Reviewed two American Chemical Society Petroleum Research Fund proposals
2002-2003	Reviewed two National Science Foundation Division of Chemistry research proposals
	Panel member "Preparing Future Faculty," University of Minnesota, Minneapolis
	Judge for "Student Research Day," University of Wisconsin, Eau Claire.
	Reviewed a faculty member for tenure at another institution.
	Attended an NSF Chautauqua workshop to prepare to teach a chemistry for non-science majors course titled "Chemistry for Non-Science Majors: The Chemistry in Context Curriculum," Harvard University, Boston, MA
	Presented an RSEC Summer Group Meeting, University of Minnesota, Minneapolis
2001-2002	Reviewed a faculty member for tenure at another institution.
	Reviewed a National Science Foundation Division of Chemistry research proposal
2000-2001	Reviewed a faculty member for tenure at another institution.
1999-2000	Reviewed a faculty member for tenure at another institution.

	Reviewed a manuscript submitted for publication in the *Journal of Chemical Education*
1998-1999	Reviewed a manuscript submitted for publication in the *Journal of Chemical Education*
	Organized the 42nd Annual Minnesota Undergraduate Research Symposium in Chemistry sponsored by the Minnesota Section of the American Chemical Society, Carleton College, Northfield, MN
1997-1998	Reviewed two American Chemical Society Petroleum Research Fund proposals
	Hosted the Minnesota Analytical Professors Society Meeting
1996-1997	Reviewed three American Chemical Society Petroleum Research Fund proposals
	Worked with a Carleton student to evaluate the level of arsenic present on taxidermy mounts used by the River Bend Nature Center
1995-1996	Analytical Chemistry Division Chair for the 29th American Chemical Society Great Lakes Regional Meeting, Normal, IL
1994-1995	Supervised two Carleton students who worked for Malt-O-Meal to help their R & D team better understand the dye content of a new cereal under development at the company
	Reviewed a faculty member for tenure at another institution.
	Reviewed a Research Corporation Cottrell College Science proposal
1993-1994	Reviewed an American Chemical Society Petroleum Research Fund Type G proposal
1992- 1993	Attended a three-day LabVIEW instructional seminar sponsored by National Instruments to help bring LabVIEW into my courses

Other Professional Meetings Attended

- National American Chemical Society Meeting, San Diego, CA, March 20-22, 2022
- Minnesota Analytical Professors Society Meeting, St. Olaf College, Northfield, MN, April 19, 2019
- Minnesota Analytical Professors Society Meeting, Macalester College, Minneapolis, MN, April 13, 2018
- Chemistry in Context Workshop, Claremont McKenna, Pitzer and Scripps Colleges, November 10 & 11, 2017
- Minnesota Analytical Professors Society Meeting, Augsburg University, Minneapolis, MN, 2012
- Minnesota Academy of Science Meeting, St. Olaf College, Northfield, MN 2012
- Minnesota Analytical Professors Society Meeting, University of St. Thomas, St. Paul, MN, 2010
- Minnesota Analytical Professors Society Meeting, College of St. Benedict, St. Joseph, MN, 2008.
- Minnesota Analytical Professors Society Meeting, College of St. Benedict, St. Joseph, MN, 2002.
- 49th Midwestern Association of Chemistry Teachers at Liberal Arts Colleges Meeting, St. Thomas University, St. Paul, MN, 2001.
- 55th Annual Midwestern Universities Analytical Chemistry Conference, Minneapolis, MN, 2001.
- Minnesota Analytical Professors Society Meeting, University of Minnesota, Minneapolis, MN, 2001.
- Minnesota Analytical Professors Society Meeting, St. Thomas University, St. Paul, MN, 1999.

- Project Kaleidoscope Faculty for the 21st Century National Assembly, Chicago, IL, 1998.
- Pfizer Undergraduate Research Symposium, Groton, CT, 1998
- Minnesota Analytical Professors Society Meeting, Carleton College, Northfield, MN, 1998.
- Pittsburgh Conference, New Orleans, LA, 1998.
- Minnesota Analytical Professors Society Meeting, University of Minnesota, Minneapolis, MN, 1997.
- Minnesota Section American Chemical Society 39th Annual Undergraduate Research Symposium in Chemistry, University of Wisconsin, River Falls, WI, 1996.
- Minnesota Analytical Professors Society Meeting, College of St. Benedict, St. Joseph, MN, 1996.
- Pew Midstates Consortium Undergraduate Research Symposium in the Physical Sciences and Mathematics, University of Chicago, Chicago, IL, 1995.
- Midwestern Association of Chemistry Teachers at Liberal Arts Colleges Meeting, Hamline University, St. Paul, MN, 1995.
- Minnesota Analytical Professors Society Meeting, Bethel College, Arden Hill, MN, 1995.
- Project Kaleidoscope Regional Colloquium: Revitalizing Introductory Science and Mathematics Courses, Beloit College, Beloit, WI, 1994.
- Winter Gordon Conference on Electrochemistry, Ventura, CA, 1994.
- Midwestern Association of Chemistry Teachers at Liberal Arts Colleges Meeting, Grinnell College, Grinnell, IA, 1992.
- Pew Midstates Consortium Conference: Integration of Chemical Information Searching into the Chemistry Curriculum, Earlham College, Richmond, IN, 1992.

Undergraduate Research Associates

2021-2022	Gavin Hazen: class of 2023
	Ethan Li: class of 2023
2020	Tristan Belzer: Adaptive Biotechnologies, Seattle, WA
2019-2020	Isabel Ledsky: Americorps, Boston, MA
	Ethan Ta: Dental student, University of Pennsylvania, Philadelphia, PA
2017-2019	Tristan Pitt: Graduate student, Cornell University, Ithaca, NY
	Cullen Irvine: Graduate student, Ohio State University, Columbus OH
2016-2017	Alex Battiste: Graduate student, University of Illinois, Urbana-Champaign, IL
	Keaton Mertz: Research Assistant, Monterey Bay Aquarium Research Institute, Graduate student, University of Wisconsin, Madison, WI
2014	Peter Downie: Medical student, University of Minnesota, Minneapolis
	Devin Oliver: Sift Science, San Francisco, CA
2013	Elijah Mae Christensen: Concur Technologies, Minneapolis, MN
	Tyler Cragg: J.D., Washington and Lee University, Lexington, VA, Associate Attorney, Richards, Layton and Finger, Wilmington, DE
2012	Meredith Borden: Ph.D., Princeton University, Princeton, NJ, Postdoctoral Research Associate, University of North Carolina, Chapel Hill
	Galen Gorski: Ph.D., University of California, Santa Cruz, Postdoctoral Research Associate, University of Californiz, Berkeley
2011	Peter Dunn: Ph.D., University of Minnesota, Postdoctoral Research Associate, Pacific Northwest National Laboratory, Process Engineer, Intel Corporation

Ryan Cammarota: Ph.D., University of Minnesota, Postdoctoral Research Associate, University of Utah, Robbins Fellow, Pomona College
Owen Demke: Country Support Manager, HIV Diagnostics at Clinton Health Access Initiative, Chicago, IL

2007 Matthew Cich: Ph.D., SUNY, Stony Brook, Frequency Comb Scientist, TOPICA Photonics, Farmington, NY
Ryan Martinez: M.D./Ph.D, Emory University, Resident, University of Minnesota, Minneapolis
Yuichiro Takeshita: Ph.D., Scripps Institution of Oceanography, Research scientist Monterey Bay Aquarium Research Institute
Christopher Zall: Ph.D., University of Minnesota, Postdoctoral Research Associate, Pacific Northwest National Laboratory, Assistant Professor Sam Houston State University, TX

2006 Ian Hill: Ph.D., University of Minnesota; Postdoctoral Research Associate, University of Virginia; Visiting Assistant Professor, Gustavus Adolphus College, St. Peter, MN
Yuichiro Takeshita: Ph.D., Scripps Institute of Oceanography

2005 Andrew Young: Ph.D., University of Illinois; Chemist, Dow, Freeport, TX
Aaron Lackner: Ph.D., University of California, Berkeley; Postdoctoral Research Associate Max Planck Institute, Chemist, Merck Germany

2003 Elizabeth McEachron: J.D., University of Chicago; Attorney, Alexandria, VA
Adam Sunderland: M.S. Rosalind Franklin University of Medicine and Science, M.D., Chicago Medical School, Orthopedic Surgeon, Detroit, MI
Janel Uejio: Ph.D., University of California, Berkeley, Scientist at Intel
Travis Ruthenburg: Ph.D., University of California, Davis, Postdoctoral Research Associate, Crocker Nuclear Laboratory

2002 Peter Reed: M.D., Duke University; Resident, Burlington, VT
Sally Charles: M.D., Uniformed Services University of Health Sciences Medical School
Elizabeth McEachron: J.D., University of Chicago; Attorney, Alexandria, VA
Anthony Wong: Investment Banking Analyst, Morgan Stanley, Hong Kong, China

1999 E. Joseph Nemanick: Ph.D., California Institute of Technology; Aerospace Corporation, El Segundo, CA
Daniel Harris: Ph.D. Materials Science, University of Illinios; Engineer at Intel

1998 E. Joseph Nemanick (Pfizer Underganduate Research Fellowship)
Paul Regan: J.D., St. Thomas University Law School; Law Clerk, Minneapolis, MN

1996 Colin LoCascio: M.S., Northwestern University
Sonia Kuester: J.D., Stanford University; Attorney, Washington, DC

1995 Molly McGuire: Ph.D., University of Wisconsin, Madison; Associate Professor, Bucknell University
Angela Dickens: Ph.D., University of Washington, Seattle; Air Quality Analyst, Wisconsin Department of Natural Resources

1993 Lakshmi K. (Reddy) Duvvur: M.D. University of Iowa; Physician, Lawrence, KS
Nicholas Babicky: Chemist, Wacker Chemical Corp., Ann Arbor, MI

1992 Daniel TerLouw: Program Manager, United Health Care, Bloomington, MN
Linda Koch: Ph.D., University of Colorado, Boulder

1991 Nicole Dohm: M.D. University of Minnesota, Physician, Egan, MN
Craig Peterson: M.D. University of Minnesota, Physician, Duluth, MN

Conference Seminars/Posters Presented by Undergraduate Research Associates

- Poster presented by Gavin Hazen and Ethan Li, National American Chemical Society Meeting, Indianapolis, IN, March 27, 2023, "Electrodeposition of Fe-Cr-Al mixed metal oxide films for renewable hydrogen production."
- Poster presented by Gavin Hazen and Ethan Li, National American Chemical Society Meeting, San Diego, CA, March 21, 2022, "Creating cheaper mixed metal oxide films for photoelectrochemical production of renewable hydrogen."
- Poster presented by Keaton Mertz, 255th National American Chemical Society Meeting, New Orleans, LA, March 19, 2018, "Construction and Testing of an Inexpensive Spin Coater."
- Poster presented by Alex Battiste, 255th National American Chemical Society Meeting, New Orleans, LA, March 19, 2018, "Construction and Testing of a 2D Photocurrent Scanning Station for the Evaluation of Thin Film Ternary Metal Oxide Water-Splitting Photocatalysts."
- Poster presented by Mia Borden and Galen Gorski, 245th National American Chemical Society Meeting, New Orleans, LA, 2013, "The Synthesis and Characterization of Vapochromic Platinum-Based Materials for the Detection of Benzene."
- Poster presented by Ryan Cammarota, 24th Winchell Undergraduate Research Symposium, Minnesota Academy of Science Meeting, St. Olaf College, Northfield, MN, 2012, "Synthesis and Characterization of Vapochromic Platinum(II) Extended Linear Chain Materials."
- Poster presented by Ryan Martinez, 235th National American Chemical Society Meeting, New Orleans, LA, 2008, "Synthesis and Characterization of Chiral Platinum Double Salt Materials Containing Terpyridine Ligands: Part 1."
- Poster presented by Matthew Cich, 235th National American Chemical Society Meeting, New Orleans, LA, 2008, "Synthesis and Characterization of Chiral Platinum Double Salt Materials Containing Terpyridine Ligands: Part 2."
- Poster presented by Kit Zall, 235th National American Chemical Society Meeting, New Orleans, LA, 2008, "Development of an Undergraduate Experiment in Fluorescence Lifetime Quenching Using an Improved Pulsed LED Photon Source."
- Poster presented by Yuichiro Takeshita, 233rd National American Chemical Society Meeting, Chicago, IL, 2007, "Chiral Platinum (II) Extended Linear-Chain Materials: The Search for an Enantioselective Sensor (Part I)."
- Poster presented by Ian Hill, 233rd National American Chemical Society Meeting, Chicago, IL, 2007, "Chiral Platinum (II) Extended Linear-Chain Materials: The Search for an Enantioselective Sensor (Part II)."
- Poster presented by Aaron Lackner, 231st National American Chemical Society Meeting, Atlanta, GA, 2006, "[Pt(β-methylphenethylisonitrile)$_4$][Pt(CN)$_4$]: An enantiomerically selective vapochromic platinum(II) extended linear chain material."
- Poster presented by Andrew Young, 231st National American Chemical Society Meeting, Atlanta, GA, 2006, "Chiral platinum(II) extended linear chain materials: Synthesis, characterization and enantiomeric selectivity."
- Poster presented by Elizabeth McEachron, 227th National American Chemical Society Meeting, Anaheim, CA, 2004, "Synthesis of 5,10,15,20,-Tetra(benzylamine) Porphyrin and its Potential Application in the Modification of Glassy Carbon Electrodes."
- Poster presented by Adam Sunderland, 227th National American Chemical Society Meeting, Anaheim, CA, 2004, "Iron Protoporphyrin IX Dimethyl Ester Chloride Polymer Films: Potential Catalytic Surfaces for the Disproportionation of Nitric Oxide."

- Poster presented by Janel Uejio, 227th National American Chemical Society Meeting, Anaheim, CA, 2004, “Characterization of Dendrimer Modified Glassy Carbon Electrodes,”
- Poster presented by Travis Ruthenburg, 227th National American Chemical Society Meeting, Anaheim, CA, 2004, “Synthesis and Characterization of [Pt(cycloheptyl-NC)$_4$][Pt(CN)$_4$]. A vapoluminescent Material.”
- Poster presented by Daniel J. Harris, 219th National American Chemical Society Meeting, San Francisco, CA, 2000, "Iron Porphyrin Chemically Modified Carbon Fiber Microelectrodes."
- Seminar presented by E. Joseph Nemanick, Minnesota Section American Chemical Society 42th Annual Undergraduate Research Symposium in Chemistry, Carleton College, Northfield, MN, 1999, "The Selective Detection of Nitric Oxide at Iron Porphyrin Electrodes."
- Poster presented by E. Joseph Nemanick, 217th National American Chemical Society Meeting, Anaheim, CA, 1999, "The Selective Detection of Nitric Oxide at Iron Porphyrin Electrodes."
- Poster presented by E. Joseph Nemanick, Pfizer Undergraduate Research Symposium, Groton, CN, 1998, "The Selective Amperometric Detection of Nitric Oxide at Chemically Modified Iron Porphyrin Electrodes at Mild Applied Potentials."
- Poster presented by Sonia Kuester, 213th National American Chemical Society Meeting, San Francisco, CA, 1997, “Synthesis and Electrochemistry of Zn(II)5,10,15-triphenyl-20-vinylporphyrin.”
- Poster presented by Colin LoCascio, 213th National American Chemical Society Meeting, San Francisco, CA, 1997, “A Feasible Electrochemical Sensor for Biologically Active Nitric Oxide.”
- Seminar presented by Molly McGuire, Minnesota Section American Chemical Society 39th Annual Undergraduate Research Symposium in Chemistry, University of Wisconsin, River Falls, WI, 1996, “Iron Porphyrin Polymer Films: Materials for the Catalytic Electrochemical Detection of Nitric Oxide.”
- Poster presented by Molly McGuire, 211th National American Chemical Society Meeting, New Orleans, LA, 1996, “Iron Porphyrin Polymer Films: Materials for the Catalytic Electrochemical Detection of Nitric Oxide.”
- Poster presented by Angela Dickens, Pew Midstates Consortium Undergraduate Research Symposium in the Physical Sciences and Mathematics, University of Chicago, Chicago, IL, 1995, “Synthesis of Monomer Porphyrins for a Dendritic Porphyrin Capable of Binding Nitric Oxide.”
- Poster presented by Linda Koch, Pew Midstates Consortium Undergraduate Research Symposium in the Physical Sciences and Mathematics, Grinnell College, Grinnell, IA, 1992, “Plating Microelectrodes with Porphyrin Polymers.”

Carleton Service

1995-present	Advisory Committee on Health Professions Programs member
2022-2023	Administrative Hiring Task Force (FAC)
2022-present	Safety Committee
2020-2021	Education and Curriculum Subcommittee reviewing Carleton’s institutional learning outcome “Analyzing Evidence”
2019-2020	Vice President and Treasurer Search Committee
2018-2019	Member of Reaccreditation Team
2018-2020	New Faculty Mentor

2016-2018, 2019	Member of College Council (elected, leave replacement)
2016-2018, 2019	Member of Budget Committee (elected, leave replacement)
2015-2017	Special Advising Project Participant
2015-2017	New Faculty Mentor
2014	Faculty Affairs Committee Designee
2013-2014	Faculty Grants Committee (elected)
2013	Chair of Internal Review Committee for Classical Languages
2011-2013	Community, Equity and Diversity Initiative (CEDI) Learning Outside the Classroom Task Force
2008-2011	Faculty Personnel Committee (elected)
2006-2007	Emergency Preparedness and Crisis Management Committee Member
2005-2006	Dean of the College Search Committee
2003	Campaign Priorities Committee Member
2001-2002	Member of Faculty Council (elected)
1999-2000, 2001-2003	Member of Education and Curriculum Committee, Co-Chair 2001-2002 (elected)
1999-2000, 2001-2003	Member of Faculty Curriculum Planning Committee (elected)
1998-1999	Faculty Compensation Committee
1997-2000	Faculty representative to the Colleague Users Group
1997-2000	SHARE Committee member
1998-2000	Workplace Consultant
1997	Budget Committee member (temporary assignment)
1995-1997	Building Security Implementation Committee member
2004-2007	Institutional Animal Care and Use Committee
1992-1994	Language Exemption Subcommittee member
1993-1994, 2004-2007	Chair of Academic Standing Committee
1991-1994, 1998, 2004-2007	Academic Standing Committee member