Katherine M. Van Heuvelen
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ACADEMIC APPOINTMENTS

R. Michael Shanahan Professor of Chemistry 2023 – Present
Associate Professor of Chemistry, Harvey Mudd College 2018 – 2023
Assistant Professor of Chemistry, Harvey Mudd College 2012 – 2018

EDUCATION

University of Minnesota 2009 – 2012
NIH NRSA Postdoctoral Fellow
Laboratory of Professor Lawrence Que, Jr.

Ph.D. in Inorganic Chemistry, University of Wisconsin-Madison 2004 – 2009
NSF Graduate Research Fellow
Research Advisor: Professor Thomas C. Brunold

B.A. in Chemistry and Religion, summa cum laude, St. Olaf College 2000 – 2004
Research Advisors: Professors Gary L. Miessler (Chemistry) & Ed Santurri (Religion)

RESEARCH AREAS

Experimental Expertise: Air-free synthesis/standard Schlenk techniques, GC-MS, HPLC, MS
Spectroscopic Expertise: UV-visible Absorption, Infrared, Nuclear Magnetic Resonance, Magnetic Circular Dichroism, Electron Paramagnetic Resonance, X-ray Absorption, X-ray Emission
Computational Expertise: Density Functional Theory (DFT), Time-Dependent DFT, QM/MM, XSEDE & ACCESS Supercomputing Systems
Chemical Education

ACADEMIC LEADERSHIP POSITIONS

Senior Associate Dean of the Faculty and Strategic Initiatives 2026 – Present

- Partner with the Office of College Advancement in the Campaign for Harvey Mudd College
- Provide professional development and leadership training for current and emerging faculty leaders as well as Academic Affairs staff in supervisory roles
- Supervise the HMC Makerspace Director
- Primary backup and high-level representative for the Dean of the Faculty

Associate Dean of Faculty, Harvey Mudd College 2021 – 2026

- Continued all responsibilities and activities listed under Associate Dean for Faculty Development & Diversity
- Chair, Research, Presentation Days, and IRB Committee.
- Manage and administer internal grants (approx. $500,000)
- Oversee the HMC Summer Research Program (170-200 students, 45-55 faculty)
- Oversee the Shanahan Fund to support student-directed projects
- Train students and faculty in the Responsible and Ethical Conduct of Research
- Partner with Advancement to raise funds in support of experiential learning
- Serve on multiple working groups and committees across The Claremont Colleges

ACADEMIC LEADERSHIP POSITIONS (continued)

Associate Dean for Faculty Development & Diversity, Harvey Mudd College 2020 – 2021

- Co-chair of Inclusion, Diversity, Equity, and Access (IDEA) committee. Worked with faculty governance to launch a Mentoring Service Fellowship to honor invisible faculty labor in support of underrepresented students
- Train search committees in equitable hiring practices and support departments throughout the hiring process
- Train tenure committees in equitable evaluation of teaching
- Collaborate with Office of Institutional Research and Effectiveness to assess programs across the college
- Plan and run a two-day New Faculty Orientation
- Run a weekly workshop for early career faculty (visitors, adjuncts, postdocs, and tenure-track faculty) offering "just in time" professional development
- Offer professional development opportunities for faculty, including support for mid-career faculty and support for inclusive teaching
- Serve on Department Chairs Committee
- Serve on multiple committees and working groups across The Claremont Colleges, including the 7C DEI Working Group; lead AD for the Professional Development Networks
- Serve on Academic Contingency Planning Committee to respond to emergency remote instruction throughout the COVID-19 pandemic

AWARDS

HMC Outstanding Faculty Member Award	2022
Fellow, Claremont Faculty Leadership Program	2018 – 2019
National Institute of Health NRSA Postdoctoral Fellowship	2010 – 2012
National Science Foundation Graduate Research Fellowship	2005 – 2008
Vilas Travel Grant (University of WI-Madison)	2008
McElvain Travel Grant (University of WI-Madison)	2008
McElvain Fellowship (University of WI-Madison)	2004
Distinction in Chemistry (St. Olaf College)	2004
Distinction in Religion (St. Olaf College)	2004
Courtland and Ellen Agre Award in Chemistry (St. Olaf College)	2004
Junia Award in Religion (St. Olaf College)	2004
Dow Chemical Scholarship (St. Olaf College)	2004
Regents Scholar (50% tuition, St. Olaf College)	2000 – 2004
National Merit Scholar	2000

STUDENT SUCCESS INITIATIVES

Member of the Thriving in STEM Laboratory, which provides a holistic support system by combining skills development, cohort-based community activities and customized one-on-one tutoring. (https://www.hmc.edu/thriving/)

SELECTED PROFESSIONAL DEVELOPMENT

HERS (Higher Education Resource Services) Leadership Institute, July 18-27, 2023, University of Denver

Women in STEM Leadership Program (WiSLP), Alan Alda Center for Communicating Science, January 21-February 11, 2023

HEDS (Higher Education Data Sharing) Consortium Workshop on Race, Equity, Inclusion, and Student Success, Oct 13-2022, Wabash College

Virtual Inorganic Pedagogical Electronic Resource (VIPEr) Workshop, June 26-29, 2022, Cal Poly Pomona

Inclusive STEM Teaching Project Facilitator Training, Summer 2022

NSF STEM Mentoring Ecosystems Workshops, Fall 2021

Inclusive STEM Teaching Project, edX course, Fall 2021

National Conference on Race and Ethnicity (NCORE), June 7-11, 2021, virtual

HMC Dialogue Across Differences Facilitator Training, Fall 2020

5C Mid-Career Women in Leadership Professional Development Network, 2019-2021, Claremont

Claremont Faculty Leadership Program (CFLP) inaugural class of fellows, 2018-2019

Faculty Learning Community – The Scholarship of Teaching and Learning, The Claremont Colleges Center for Teaching and Learning, Fall 2018

5C Inorganic Professional Development Network, 2017-2018, Claremont, CA

Virtual Inorganic Pedagogical Electronic Resource (VIPEr) Workshop on Solid State Materials for Alternative Energy Needs, June 23-28, 2013, PennState

MEDIA AND PUBLICATIONS OUTSIDE OF PEER REVIEW

Team Teaching 101. Times Higher Education https://www.timeshighereducation.com/campus/team-teaching-101, 8 Dec 2025
Also featured in *Inside Higher Education*, Oct 9, 2025 https://www.insidehighered.com/news/student-success/academic-life/2025/10/09/team-teaching-benefits-faculty-and-students

Building an In-House Faculty Leadership Development Program: A Case Study at The Claremont Colleges. Armstrong, J.; Bizuneh, M.; Levin, S.; Ketels, E.; Van Heuvelen, K.M. The ACAD Leader, October 2023. https://acad.org/resource/building-an-in-house-faculty-leadership-development-program-a-case-study-at-the-claremont-colleges/

Transforming Today's College Students into Future Leaders. *Forbes,* Sept 8, 2014. https://www.forbes.com/sites/mariaklawe/2014/09/08/transforming-todays-college-students-into-future-leaders/#4e9663a05e4e

SERVICE (Harvey Mudd College)

Imagining HMC Working Group, Strategic Planning, Co-chair, Spring 2024
Faculty Executive Committee, 2018-2020
Core Review Committee, Spring 2018 – Spring 2020
    Co-chair 2019-2020
Core Implementation Committee, 2020-2021
Inclusion, Diversity, Equity, and Access (IDEA) Working Group, co-chair, 2021-present
Academic Contingency Planning Committee, 2020 (COVID pandemic)
Research Committee, 2013-2014, 2021-present
    Chair 2021-2022, 2023-2026
Assessment and Accreditation Committee, 2016-2018
WSCUC Reaccreditation Steering Committee, 2018-2022
Academic Affairs Committee
Curriculum Committee, 2022-present
Chemistry department seminar coordinator, 2014-2018
Equity and Inclusion Working Group, 2017-2019
Hixon-Riggs Steering Committee, Fall 2017-Spring 2019
Chemistry Search Committee, Fall 2021 and 2023

SERVICE (The Claremont Colleges Consortium)

7C DEI Working Group, 2020-present, co-chair 2020-2024
7C Professional Development Networks Committee, 2020-present, lead
7C Claremont Faculty Leadership Program Steering Committee, 2020-present
7C Mentoring and Collaborative Research Working Group, Spring 2021-spring 2022
Pomona College Search Committee, Fall 2022

SERVICE (External)

External Review, St. Olaf College Chemistry Department, April 2024

PUBLICATIONS (Undergraduate co-authors are underlined)

In Preparation: Chapter on bioinorganic chemistry to be included in the forthcoming new edition of the undergraduate textbook Inorganic Chemistry by Gary Miessler. Published by Oxford University Press.

23. Emergency Remote Instruction during the COVID-19 Pandemic Reshapes Collaborative Learning in General Chemistry.
Van Heuvelen, K.M.*, Daub, G.W.; Van Ryswyk, H.
Journal of Chemical Education, **2020**, *97* (9), 2884 – 2888.http://dx.doi.org/10.1021/acs.jchemed.0c00691

22. How do I design a reaction to do useful work? Reinvigorating general chemistry by connecting chemistry and society.
Van Heuvelen, K.M.*; Daub, G.W.; Johnson, A.R.; Hawkins, L.N.; Van Ryswyk, H.; Vosburg, D.A.
Journal of Chemical Education, **2020**, *97*, 925-933. http://dx.doi.org/10.1021/acs.jchemed.9b00281

21. Emphasizing Learning: The Impact of Student Surveys in the Reform of an Introductory Chemistry Course
Van Heuvelen, K.M.*; Palucki Blake, L; Daub, G.W.; Johnson, A.R.; Hawkins, L.N.; Van Ryswyk, H.; Vosburg, D.A.
Journal of Assessment and Institutional Effectiveness, **2019**, *9*, 1-28.
https://www.jstor.org/stable/10.5325/jasseinsteffe.9.1-2.0001

20. Crystal Structure and Spectroscopic Characterization of a Cobalt(II) Tetraazamacrocycle: Completing a Series of First-Row Transition Metal Complexes
Van Heuvelen, K.M.*; Lee, I.; Arriola, K.; Griffin, R.; Ye, C.; Takase, M.
Acta Crystallographica Section C, **2017**, *C73*, 620-624 http://dx.doi.org/10.1107/S2053229617010397

19. Mononuclear Nickel(II) and Copper(II) Coordination Complexes Supported by Bispicen Ligand Derivatives: Experimental and Computational Studies
Singh, N.; Niklas, J.; Poluektov, O.; **Van Heuvelen, K.M.***; Mukherjee, A.*
Inorganica Chimica Acta, **2017**, *455*, 221 – 230 http://dx.doi.org/10.1016/j.ica.2016.09.001

18. Cobalt Kβ Valence-to-Core X-ray Emission Spectroscopy: A Study of Low-Spin Octahedral Cobalt(III) Complexes
Schwalenstocker, K.; Paudel, J.; Kohn, A.W.; Dong, C.; **Van Heuvelen, K.M.***; Farquhar, E.R.*; Li, F.*
Dalton Transactions, **2016**, *45*, 14191-14202. http://dx.doi.org/10.1039/C6DT02413K

17. Characterization of a Heterobimetallic Nonheme Fe(III)-O-Cr(III) Species Formed by O_2 Activation
Zhou, A.; Kleespies, S.T.; **Van Heuvelen, K.M.**; Que, L.
Chemical Communications, **2015**, *51*, 14326 – 14329. http://dx.doi.org/10.1039/C5CC05931C

16. Spectroscopic Identification of an Fe^{III} Center, not Fe^{IV}, in the Crystalline Sc-O-Fe Adduct Derived from $[Fe^{IV}(O)(TMC)]^{2+}$
Prakash, J.; Rohde, G.T.; Meier, K.K.; Jasniewski, A.J.; **Van Heuvelen, K.M.**; Münck, E.; Que, L.
Journal of the American Chemical Society. **2015**, *137*, 3478 – 3481.
http://dx.doi.org/10.1021/jacs.5b00535

15. An Ultra-Stable Oxoiron(IV) complex and its Blue Conjugate Base
England, J.; Bigelow, J.O.; **Van Heuvelen, K.M.**; Farquhar, E.R.; Martinho, M.; Meier, K.K.; Frisch, J.R.; Münck, E.; Que, L.
Chemical Science. **2014**, *5*, 1204 – 1215. http://dx.doi.org/10.1039/C3SC52755G

PUBLICATIONS (continued)

14. Sc^{3+} can trigger the formation of an oxoiron(IV) complex from O_2 and its nonheme iron(II) precursor via a Sc^{3+}-peroxo-Fe^{3+} intermediate
Li, F.; **Van Heuvelen, K.M.**; Meier, K.M.; England, J.; Münck, E.; Que, L.
Journal of the American Chemical Society. **2013**, *135*, 10198 – 10201.
http://dx.doi.org/10.1021/ja402645y

13. Isolation and Characterization of a Thiolato-Iron(III)-Peroxy Anion Complex
McDonald, A.R.; **Van Heuvelen, K.M.**; Guo, Y.; Münck, E.; Que, L.
Angewandte Chemie Int. Ed. **2012**, *51*, 9132 – 9136. http://dx.doi.org/10.1002/anie.201203602

12. One-Electron Oxidation of an Oxoiron(IV) Complex to Form an $[O=Fe^{V}=NR]^{+}$ Center
Van Heuvelen, K.M.; Fieder, A.T.; Shan, X.; DeHont, R.; Meier, K.K.; Münck, E.; Que, L. *Proceedings of the National Academy of Sciences.* **2012***, 109*, 11933 – 11938.
http://dx.doi.org/10.1073/pnas.1206457109

11. A More Reactive Trigonal-Bipyramidal High-Spin Oxoiron(IV) Complex with a cis-Labile Site
England, J.; Guo, Y.; **Van Heuvelen, K.M.**; Cranswick, M.A.; Rohde, G.T.; Bominaar, E.L. Münck, E.; Que, L. *Journal of the American Chemical Society.* **2011**, *133*, 11880 – 11883.
http://dx.doi.org/10.1021/ja2040909

10. Characterization of a High-Spin Non-Heme Fe^{III}-OOH Intermediate and Its Quantitative Conversion to an Fe^{IV}=O Complex
Li, F; Meier, K.K.; Cranswick, M.A.; Chakrabrti, M.; **Van Heuvelen, K.M**.; Münck, E.; Que, L.
Journal of the American Chemical Society. **2011**, *133*, 7256 – 7259. http://dx.doi.org/10.1021/ja111742z

9. Spectroscopic and Computational Studies on High-Spin Ni(II) Thiolate Compounds
Van Heuvelen, K. M.; Cho, J.; Dingee, T.; Riordan, C. G.; Brunold, T. C.
Inorganic Chemistry. **2010**, *49*, 6535 – 6544. http://dx.doi.org/10.1021/ic100362q

8. Spectroscopic and Computational Studies of the μ–η^2:η^2–Disulfido–Bridged Dinickel(II) Species $[(PhTt^{tBu})_2Ni_2(\mu\text{–}\eta^2\text{:}\eta^2\text{–}S_2)]$
Van Heuvelen, K. M.; Cho, J.; Riordan, C. G.; Brunold, T. C.
Inorganic Chemistry. **2010**, *49*, 3113 – 3120. http://dx.doi.org/10.1021/ic901731b

7. Spectroscopic and Computational Studies of the Trans-μ-1,2-Disulfido-Bridged Dinickel(II) Species $[Ni_2(tmc)_2(S_2)](OTf)_2$: Comparison of End-on Disulfido and Peroxo Bonding in Ni(II) and Cu(II) Species
Van Heuvelen, K. M.; Kieber-Emmons, M. T.; Riordan, C. G.; Brunold, T. C.
Inorganic Chemistry. **2010**, *49*, 3104 – 3112. http://dx.doi.org/10.1021/ic901733h

6. Synthesis and Spectroscopic Characterization of a μ-1,2-Disulfidodinickel Complex
Kieber-Emmons, M. T.; **Van Heuvelen, K. M.**; Brunold, T. C.; Riordan, C. G.
Journal of the American Chemical Society. **2009**, *131*, 440 – 441. http://dx.doi.org/10.1021/ja807735a

5. Computational Studies of Bioorganometallic Enzymes and Cofactors
Liptak, M. D.; **Van Heuvelen, K. M.**; Brunold, T. C.
In *Metal Ions in Life Sciences Vol 6: Metal-Carbon Bonds in Enzymes and Cofactors*. Eds. Sigel, A.; Sigel, H.; Sigel, R. K. O. Cambridge: Royal Society of Chemistry, 2009.

4. New Synthetic Routes to a Disulfido Dinickel(II) Complex: Characterization and Reactivity of a $Ni_2(\mu\text{-}\eta^2\text{:}\eta^2\text{-}S_2)$ Core
Cho, J.**; Van Heuvelen, K. M.**; Yap, G. P. A.; Brunold, T. C.; Riordan, C. G.
Inorganic Chemistry. **2008**, *47*, 3931 – 3933. http://dx.doi.org/10.1021/ic800321x

PUBLICATIONS (continued)

3. Ferromagnetic Semiconducting EuO Nanorods
Bierman, M. J.; **Van Heuvelen, K. M.**; Schmeiβer, D.; Brunold, T. C.; Jin, S.
Adv. Mater. **2007**, *19*, 2677 – 2681. http://dx.doi.org/10.1002/adma.200602612

2. Identification of an "End-On" Nickel-Superoxo Adduct, Ni(tmc)$(O_2)^+$
Kieber-Emmons, M. T.; Annaraj, J.; Seo, M. S.; **Van Heuvelen, K. M.**; Tosha, T.; Kitagawa, T.; Brunold, T. C.; Nam, W.; Riordan, C. G.
Journal of the American Chemical Society. **2006**, *128*, 14230 – 14231.
http://dx.doi.org/10.1021/ja0644879

1. Spectroscopic and Computational Studies of Reduction of the Metal versus the Tetrapyrrole Ring of Coenzyme F-430 from Methyl-Coenzyme M Reductase
Dey, M.; Kunz, R. C.; **Van Heuvelen, K. M.**; Craft, J. L.; Horng, Y. C.; Tang, Q.; Bocian, D. F.; George, S. J.; Brunold, T. C.; Ragsdale, S. W.
Biochemistry **2006**, *45*, 11915 – 11933. http://dx.doi.org/10.1021/bi0613269

PRESENTATIONS

25. A Case Study in Reimagining General Chemistry after a College-wide Curricular Reform
Van Heuvelen, K.M.
Biennial Conference on Chemical Education (BCCE), Lexington, KY, July 2024

24. Integrating Climate Case Studies into a First-Year Chemistry Course
Van Heuvelen, K.M.*; Daub, G.W.; Haushalter, K.; Johnson, A.R.; Hawkins, L.N.; Van Ryswyk, H.; Vosburg, D.A.
SENCER West Coast Regional Meeting: Broadening Participation in Undergraduate Climate Education, Claremont, CA, September 2023

23. Building an in-house faculty leadership development program: A case study at The Claremont Colleges
Armstrong, J.; Bizuneh, M.; Levin, S.; Rentz, E.K.; Van Heuvelen, K.M.
Annual Meeting of the American Conference of Academic Deans (ACAD), Tampa, FL, February 2023

22. Nickel(II) borohydride converts perchloroethylene to trichloroethylene
Van Heuvelen, K.M.
American Chemical Society National Meeting, Virtual, April 2021 DIV: Inorg, Paper ID 3553173

21. Magnetic Circular Dichroism
Invited speaker for the Penn State Bioinorganic Workshop
May 29 – June 5, 2020; cancelled due to COVID-19 pandemic

20. How do I design a chemical reaction to do useful work, and how does my reaction impact society? A case study in reimaging general chemistry
Van Heuvelen, K.M.
American Chemical Society National Meeting, San Diego, CA, August 2019

19. Assessing Introductory Courses: Creating Conversations about Learning through Student Surveys
Van Heuvelen, K.M. and Palucki Blake, L
HEDS conference, Spokane, WA, June 2018

PRESENTATIONS (continued)

18. Bio-inspired dehalogenation: Developing first-row transition metal complexes to treat priority pollutants perchloroethylene and trichloroethylene
255th American Chemical Society National Meeting, New Orleans, LA, March 2018, Volume 255, Meeting Abstract 95, Invited speaker, "Women in Inorganic Chemistry: Synthetic Chemistry Addressing Challenges in Energy and the Environment" symposium

17. Designing Bio-Inspired Nickel and Cobalt Complexes to Treat Priority Pollutants – Invited Talk
Van Heuvelen, K.M.
University of Wisconsin-Madison, Madison, WI, November 2017

16. Crafting Your Career – Invited Talk
Van Heuvelen, K.M.
University of Wisconsin-Madison, Madison, WI, November 2017

15. Designing Bio-Inspired Nickel and Cobalt Complexes to Treat Priority Pollutants – Invited Talk
Van Heuvelen, K.M.
University of La Verne, La Verne, CA, November 2017

14. Bio-Inspired Dehalogenation: Developing First-Row Transition Metal Complexes to Treat Priority Pollutants – Invited Talk
Van Heuvelen, K.M.
University of La Verne, La Verne, CA April 2017

13. Development of Bio-Inspired Catalysts for Dechlorination Reactions
Poster presented at the Gordon Research Conference: Metals in Biology
January 2015, Ventura, CA

12. Investigation of the Electronic Structure of Cobaloximes
Van Heuvelen, K. M.
Poster presented at the Gordon Research Conference: Metals in Biology,
January 26 – 31, 2014, Ventura, CA

11. One-Electron Oxidation of an Oxoiron(IV) Complex
Van Heuvelen, K. M.; Fiedler, A.T.; Meier, K.K.; DeHont, R.; Shan. X.; Münck, E.; Que, L..
Poster presented at the International Conference of Bioinorganic Chemistry
August 7-12, 2011, Vancouver, British Columbia

10. One-Electron Oxidation of an Oxoiron(IV) Complex
Van Heuvelen, K. M.; Fiedler, A.T.; Meier, K.K.; DeHont, R.; Shan. X.; Münck, E.; Que, L..
Poster presented at the Gordon Research Conference: Metals in Biology,
January 30 – February 3, 2011, Ventura, CA

9. Graduate School in Chemistry
Van Heuvelen, K. M.
Invited seminar presented at St. Olaf College
October 14, 2010, Northfield, MN

8. Insights into the Mechanism of Methyl-Coenzyme M Reductase: Spectroscopic and Computational Studies of Ni-C Bonding in Cofactor F430
Van Heuvelen, K. M.; Dey, M.; Kunz, R.; Ragsdale, S. W.; Brunold, T. C.
Talk presented at the Gordon Research Seminar: Bioinorganic Chemistry,
January 29 – February 1, 2009, Ventura, CA

PRESENTATIONS (continued)

7. Spectroscopic and Computational Studies of Ni–Alkyl Bonding in the Active Site of Methyl-Coenzyme M Reductase
Van Heuvelen, K. M.; Dey, M.; Kunz, R.; Ragsdale, S. W.; Brunold, T. C.
Poster presented at the Gordon Research Seminar: Bioinorganic Chemistry,
January 29 – February 1, 2009, Ventura, CA

6. Spectroscopic and Computational Insights into Ni–S Bonding in Methyl–CoM Reductase and Synthetic $Ni_2(S_2)$ Complexes
Van Heuvelen, K. M.; Dey, M.; Kunz, R.; Kieber-Emmons, M. T.; Cho, J.; Riordan, C. G.; Ragsdale, S. W.; Brunold, T. C.
Poster presented at the Gordon Research Seminar: Bioinorganic Chemistry,
January 31 – February 3, 2008, Ventura, CA

5. So You Want to Go to Grad School
Van Heuvelen, K. M.
Invited seminar presented at St. Olaf College
September 2008, Northfield, MN

4. Spectroscopic and Computational Studies of Ni-Containing Enzymes: Application to Acetyl-CoA Synthase/Carbon Monoxide Dehydrogenase and Methyl-Coenzyme M Reductase
Van Heuvelen, K. M.; Dey, M.; Kunz, R.; Kieber-Emmons, M. T.; Riordan, C. G.; Ragsdale, S. W.; Brunold, T. C.
Poster presented at the International Conference of Biological Inorganic Chemistry
July 31 – August 5, 2005, Ann Arbor, MI

3. Modeling Enzyme Active Sites: Synthesis of Group VI Heterobimetallic Compounds
Van Heuvelen, K. M.; Miessler, G. L.
Talk presented at the St. Olaf Summer Research Symposium
August 2002/2003, Northfield, MN

2. Green Chemistry: Diels-Alder Reactions in Ionic Solutions
Patterson, M.; Van Heuvelen, K. M.; Spessard, G.
Poster presented at St. Olaf College
May 2003, Northfield, MN

1. Modeling Enzyme Active Sites: Synthesis of Group VI Heterobimetallic Compounds
Van Heuvelen, K. M.; Miessler, G. L.
Talk presented at the Pew Midstates Science and Mathematics Consortium
Fall 2003, Chicago, IL

COURSES TAUGHT AT HARVEY MUDD COLLEGE

Chem 23A and B: Chemistry in the Modern World
Chem 23S: Chemical Structure
Chem 19S: General Chemistry Intensive
Chem 24: Chemistry Laboratory
Chem 40: Introduction to Chemical Research
Chem 42: Chemistry in the Modern World
Chem 104: Advanced Inorganic Chemistry
Chem 110: Advanced Inorganic Laboratory
Chem 150: Chemical Research
Chem 151 and 152: Senior Thesis Research
Chem 190: Bio-Inorganic Chemistry
Chem 197: Special Readings in Chemistry: C-H Bond Activation
Chem 199: Chemistry Seminar
Core Laboratory 57: The Chemistry of Cooking
ID 48: Social Justice and Equity: STEM and Beyond
Writ 1: Introduction to Academic Writing

TEACHING EXPERIENCE PRIOR TO HARVEY MUDD COLLEGE

University of Minnesota, Guest Lecturer, Inorganic Chemistry (one week)

University of Wisconsin-Madison; Madison, WI
Teaching Assistant (Upper-level advanced inorganic chemistry, introductory inorganic chemistry, advanced general chemistry)
Undergraduate student research mentor

St. Olaf College; Northfield, MN
Teaching Assistant (Analytical chemistry laboratory, organic chemistry laboratory)
General chemistry course tutor
Great Conversation (great books learning community) course tutor

RESEARCH STUDENTS

34. Griffin Stevens ‘25
33. Stephen Gross ‘22
32. Jada Thomas ‘22
31. Keo Chui ‘22
30. Mihira Sogal ‘23
29. Jacob Kelber ‘23
28. Ellie Kim ‘22
27. Jason Misleh ‘22
26. Thomas Fleming ‘22
25. Thelma (Toty) Calvo Polanco ‘21
24. Brandon Wada ’20. Senior Thesis: Kinetic Study of [Ni(II)(cyclam)(BH_4)](BH_4) mediated Dehalogenation of Tetrachloroethylene
23. Theo Hansel ‘19
22. Parnika Sharma ‘19
21. Micaela Homer ‘19
20. Ellie Gund ’17. Senior Thesis: Investigation of Dechlorination using Bio-Inspired Nickel Compounds
19. Christopher Ye ’19. Senior Thesis: Investigating Dechlorination Mechanisms Using Biomimetic Model Compounds
18. Rilke Griffin ‘18
17. Kate Arriola ’16. Senior Thesis: Developing a Biologically Inspired Catalyst for Dechlorination Reactions
16. Monica Mikkelsen
15. Jacob Knego ‘18
14. Sooyeol “Suzy” Kim ’16. Senior Thesis: Metallating Ligands in Catalyst Development for Carcinogens in Groundwater
13. Danielle Marquis ’15. Senior Thesis: Dechlorination through Model Compounds of Vitamin B12
12. Emma Klein ‘17
11. Allison Lim ‘16
10. Justin Lee ‘16
9. Naomi Epstein ‘16
8. Isabell Lee ‘16
7. E. Page Allen ’14. Senior Thesis: Dechlorination by Cobaloximes
6. Jennifer Rogers ‘16
5. Casey Cannon ‘16
4. Jessica Iwamoto ‘16
3. Philip Woods ‘17
2. Bram Carlson ’13. Senior Thesis: Oxidation of Methane by Cofactor F430 Model Compounds
1. Alex Kohn ’13. Senior Thesis: A Spectroscopically Validated Computational Study of the Reduction of Haloalkanes by Cobaloximes

SELECTED STUDENT CONFERENCE PRESENTATIONS

13. Electrochemical studies of transition metal compounds for the reduction of tetrachloroethylene, Poster #417
Stevens, G.; Van Heuvelen, K.M.; Van Ryswyk, H.
American Chemical Society National Meeting, Spring 2025

12. Reductive Dehalogenation of Chlorinated Ethylene by a Nickel(II) Borohydride Complex
Misleh, J.; Van Heuvelen, K.M.
American Chemical Society National Meeting, San Diego, CA; March 2022

SELECTED STUDENT CONFERENCE PRESENTATIONS (continued)

11. Computational Investigations of Dechlorination of Perchloroethylene and Trichloroethylene Via an Iron(II) Cyclam Borohydride Complex
Kelber, J.; Van Heuvelen, K.M.
American Chemical Society National Meeting, Virtual Meeting, April 2021

10. Investigating Dechlorination Mechanisms Using Biomimetic Model Compounds
Ye, C.; Van Heuvelen, K.M.
257th American Chemical Society National Meeting
Orlando FL; March 31-April 4, 2019, Volume 257, Meeting Abstract 294

9. Investigating Dechlorination Abilities of Bio-Inspired Nickel Compounds
Griffin-Hare, R.; Ye, C.; Wada, B.; Van Heuvelen, K.M.
255th American Chemical Society National Meeting
New Orleans, LA; March 18-22, 2018, Volume 255, Meeting Abstract 185

8. Investigating Dechlorination Using Bio-Inspired Nickel Compounds
Gund, E.; Griffin, R.; Ye, C.; Van Heuvelen, K.M.
253rd American Chemical Society National Meeting
San Francisco, CA; April 2-6, 2017, Volume 253, Meeting Abstract 238

7. Dechlorination Abilities of Biomimetic Compounds
Ye, C.; Griffin, R.; Van Heuvelen, K.M.
253rd American Chemical Society National Meeting
San Francisco, CA; April 2-6, 2017, Volume 253, Meeting Abstract 252

6. Developing Bio-Inspired Catalysts for Dechlorination
Arriola, K.; Van Heuvelen, K.M.
American Chemical Society National Meeting
San Diego, CA; March 13, 2016, Volume 251, Meeting Abstract 414

5. Metallating Ligands in Catalyst Development for Carcinogens in Groundwater
Kim, S.; Van Heuvelen, K.M.
American Chemical Society National Meeting
San Diego, CA; March 13, 2016, Volume 251, Meeting Abstract 411

4. Development of a Biomimetic Catalyst for Dechlorination Reactions
Lee, I.; Van Heuvelen, K.M.
American Chemical Society National Meeting
San Diego, CA; March 13, 2016, Volume 251, Meeting Abstract 401

3. Green Dechlorination via Functional Models of Cyanocobalamin
Marquis, D.; Van Heuvelen, K.M.
American Chemical Society National Meeting
March 22, 2015, Volume 249, Meeting Abstract 354

2. Methane Oxidation by Cofactor F430
Carlson, B.; Van Heuvelen, K.M.
245th American Chemical Society National Meeting
New Orleans, LA; April 7-11, 2013, Volume 245, Meeting Abstract 248-INOR

1. Spectroscopically Validated Computational Study of the Reduction of Haloalkanes by Cobaloximes
Kohn, A.W.; Van Heuvelen, K.M.
245th American Chemical Society National Meeting
New Orleans, LA; April 7-11, 2013, Volume 245, Meeting Abstract 249-INOR

EXTERNAL SUPPORT

National Science Foundation
Major Research Instrumentation: Acquisition of a 400 MHz NMR for Undergraduate Research and Research Training
PI: David Vosburg, Co-PI Adam Johnson and Katherine Van Heuvelen
Total Budget: $ 331,285

Extreme Science and Engineering Discovery Environment (XSEDE, www.xsede.org)
XSEDE is an online network of advanced computing resources funded by the NSF. It has recently transitioned to ACCESS (Advanced Cyberinfrastructure Coordination Ecosystem: Services and Support, https://access-ci.org/).

Research Allocation Renewal
Title: Development of Biomimetic Catalysts using a Combined Computational and Spectroscopic Approach
1 July 2022– 30 June 2023, 148,800 hours of computational time and 500 GB storage valued at $679.72.

Research Allocation Renewal
Title: Development of Biomimetic Catalysts using a Combined Computational and Spectroscopic Approach
1 January 2021– 30 June 2022, 340,338 hours of computational time and 500 GB storage valued at $149,748.72.

Research Allocation Renewal
Title: Development of Biomimetic Catalysts using a Combined Computational and Spectroscopic Approach
1 July 2019– 31 December 2020, 161,400.73 hours of computational time and 500 GB storage valued at $2,603.01.

Research Allocation Renewal
Title: Development of Biomimetic Catalysts using a Combined Computational and Spectroscopic Approach
1 January 2018 – 30 June 2019, 120,000 hours of computational time and 500 GB storage valued at $4,151.00.

Research Allocation Renewal
Title: Development of Biomimetic Catalysts using a Combined Computational and Spectroscopic Approach
1 July 2016 – 31 December 2017, 263,030 hours of computational time and 1 TB storage valued at $21,372.90.

Research Allocation
Title: Development of Biomimetic Catalysts using a Combined Computational and Spectroscopic Approach
1 January 2015 – 30 June 2016, 263,030 hours of computational time and 1 TB storage valued at $15,663.16.

Startup Allocation
Title: Development of Biomimetic Catalysts using a Combined Computational and Spectroscopic Approach
September 2014 – December 2014, 120,000 computational hours