C. Rose Kennedy

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Professional Appointments

July 2024 – present — **Wilmot Assistant Professor of Chemistry,** *University of Rochester*

Jan. 2020 – June 2024 — **Assistant Professor of Chemistry,** *University of Rochester*
Research Areas: Organometallic Chemistry, Catalysis & Synthetic Methods, Mechanistic & Physical Organic Chemistry

Education & Research Experience

Jan. 2017 – Dec. 2019 — **Postdoctoral Research Fellow,** *Princeton University*
Kirschstein NRSA Postdoctoral Fellowship (NIH F32, 2018)
Research Advisor: Professor Paul J. Chirik
Research Area: Chemo- and Regioselective Iron-Catalyzed Olefin Cross-dimerization and Polymerization
(6 publications, 3 patents + 3 provisional patents)

Jul. 2011 – Dec. 2016 — **Doctorate of Philosophy (Chemistry),** *Harvard University*
NSF Graduate Research Fellowship (NSF GRFP, 2011)
Research Advisor: Professor Eric N. Jacobsen
Dissertation: *Mechanistic Studies in Enantioselective Ion-Pairing Catalysis with Dual Hydrogen-Bond Donors* (8 publications)

Sept. 2007 – May 2011 — **Bachelor of Science (Chemistry),** *University of Rochester*
Summa Cum Laude, Phi Beta Kappa (Junior Election),
Renaissance Scholarship
Research Advisors: Professor Alison J. Frontier (thesis)
& Professor Kara L. Bren
Research Areas: Synthetic Organic Method Development & Bioinorganic Chemistry

May – July 2010 — **DAAD RISE Fellow,** *Technische Universität Dortmund*
Research Advisor: Professor Martin Hiersemann
Research Area: Natural Product Total Synthesis

Awards & Honors

2024	**James P. Wilmot Distinguished Assistant Professorship** (University of Rochester)
	NSF CAREER Award (National Science Foundation)
	Kavli Fellow (National Academy of Sciences)
	ACS Division of Organic Chemistry Academic Young Investigator Award
2023	**Thieme Chemistry Journals Awardee** (editorial boards of *Synthesis*, *Synlett*, and *Synfacts*)
	NIH Maximizing Investigator Research Award (MIRA, R35) (National Institutes of Health, National Institute of General Medical Sciences)
	Excellence in Peer Reviewing Award (American Chemical Society, Petroleum Research Fund)
2022	**Packard Fellow in Science & Engineering** (The David & Lucile Packard Foundation)
2021	**Doctoral New Investigator (PRF-DNI) Award** (ACS Petroleum Research Fund)
2018	**NIH Ruth L. Kirschstein NRSA Postdoctoral Fellowship (F32)** (National Institutes of Health, National Institute of General Medical Sciences)
2017	**ACS Green Chemistry Institute Pharmaceutical Roundtable Travel Grant**
2016, 2014	**Christensen Prize for Outstanding Research Achievement** ***(travel fellowship)*** (Harvard University, Department of Chemistry and Chemical Biology)
2015	**Dudley R. Herschbach Teaching Award** (Harvard University, Department of Chemistry and Chemical Biology)
2011	**NSF Graduate Research Fellowship** (National Science Foundation)
	Janet Howell Clark Memorial Award (University of Rochester, Arts & Sciences)
	John McCreary Memorial Prize (University of Rochester, Chemistry)
	Carl A. Whiteman, Jr. Teaching Award (University of Rochester, Chemistry)
2010	**Catherine Block Memorial Prize** (University of Rochester, Arts & Sciences)
	Junior Scholar Award (University of Rochester, Chemistry)
	Gladys Anderson Emerson Scholarship (Iota Sigma Pi)

Publications

ORCID: 0000-0003-3681-819X, † undergraduate, ‡ equal contributor, * corresponding author

23. Kadam, A. A. [‡]; Afandiyeva, M. [‡]; Brennessel, W. W.; Kennedy, C. R.* Deactivation Modes in Nickel-Mediated Suzuki–Miyaura Cross-Coupling Reactions Using an NHC-Pyridonate Ligand. *Organometallics,* **2024**, DOI: 10.1021/acs.organomet.4c00235

    [preprint] *ChemRxiv.* **2024**, DOI: 10.26434/chemrxiv-2023-ks784

22. Pillai, V. G.; Malyk, K. R.; Kennedy, C. R.* Mechanistic insights on C(acyl)−N functionalisation mediated by late transition metals. *Dalton Trans.* **2024**, DOI: 10.1039/d4dt01829j

21. Afandiyeva, M. [‡]; Wu, Xijue[†,‡]; Brennessel, W. W.; Kadam, A. A.; Kennedy, C. R.* Secondary-Sphere Preorganization Enables Nickel-Catalyzed Nitrile Hydroboration. *Chem. Commun.* **2023**, *59*, 13450–13453. DOI: 10.1039/D3CC04229D *(Invited for 2023 Emerging Investigators Collection)*

[preprint] *ChemRxiv*. **2023**, DOI: 10.26434/chemrxiv-2023-ks784

20. Kadam, A. A.; Kennedy, C. R.* Insights into H^+ and e^- transfer by swapping Fe for Mn in a [NiFe] hydrogenase model. *Chem*. **2023**, 9, 2370–2373. DOI: 10.1016/j.chempr.2023.08.017 *(Invited Preview)*

19. Malyk, K. R.[‡]; Pillai, V. G.[‡]; Brennessel, W. W.; Leon Baxin, R.; Silk, E. S.[†]; Nakamura, D. T.[†]; Kennedy, C. R.* Distinguishing Competing Mechanistic Manifolds for C(acyl)–N Functionalization by a Ni/N-Heterocyclic Carbene Catalyst System. *JACS Au*. **2023**, 3, 2451–2457. DOI: 10.1021/jacsau.3c00283

[preprint] *ChemRxiv*. **2023**, DOI: 10.26434/chemrxiv-2023-cb75z

18. Kadam, A. A.; Kennedy, C. R.* Remixing the Secondary Coordination Sphere. *Trends Chem*. **2023**, *5*, 506–508. DOI: 10.1080/00958972.2022.211703 *(Invited Spotlight)*

17. Hanaway, D. H.[†]; Kennedy, C. R.* An Automated Variable Electric-Field DFT Application for Evaluation of Optimally Oriented Electric Fields on Chemical Reactivity. *J. Org. Chem*. **2023**, *88*, 106–115. DOI: 10.1021/acs.joc.2c01893

[preprint] *ChemRxiv*. **2022**, DOI: 10.26434/chemrxiv-2022-4wr1m

16. Afandiyeva, M. A.[‡]; Kadam, A. A.[‡]; Wu, X.[†,‡]; Brennessel, W. W.; Kennedy, C. R.* Synthesis, Structure, and Hydroboration Reactivity of Anionic Nickel(0) Complexes Supported by Bidentate NHC-Pyridone Ligands. *Organometallics*, **2022**, *21*, 3014–3023. DOI: 10.1021/acs.organomet.2c00439 *(Selected as ACS Editors' Choice; Top 3 Most-Read Papers)*

[preprint] *ChemRxiv*, **2022**, DOI: 10.26434/chemrxiv-2022-gk2cs

15. Craig, S. M.[†,‡]; Malyk, K. R.[‡]; Silk, E. S.[†,‡]; Nakamura, D. T.[†]; Brennessel, W. W. ; Kennedy, C. R.* Synthesis and characterization of Ni(0) complexes supported by an unsymmetric C,N ligand. *J. Coord. Chem*. **2022**, 75, 1841–1852. DOI: 10.1080/00958972.2022.2117037. *(Invited contribution to Emerging Leaders Special Issue.)*

14. Beromi, M. M.; Kennedy, C. R.; Younker, J. M.; Carpenter, A. E.; Mattler, S. J.; Throckmorton, J. A.; Chirik, P. J.* Iron Catalyzed Synthesis and Chemical Recycling of Telechelic, 1,3-Enchained Oligocyclobutanes. *Nature Chem*. **2021**, *13*, 156–162. DOI: 10.1038/s41557-020-00614-w;

[preprint] *ChemRxiv*, **2020**, DOI: 10.26434/chemrxiv.11994489.v1

13. Kennedy, C. R.[‡]; Joannou, M. V.[‡]; Steves, J. E.; Hoyt, J. M.; Kovel, C. B.; Chirik, P. J.* Iron-Catalyzed Vinylsilane Dimerization and Cross-Cycloadditions with 1,3-Dienes: Probing the Origins of Chemo- and Regioselectivity. *ACS Catal*. **2021**, *11*, 1368–1379. DOI: 10.1021/acscatal.0c04608

12. Kennedy, C. R.; Choi, B. Y.[†]; Reeves, M.-G. R.[†]; Jacobsen, E. N.* Enantioselective Catalysis of an Anionic Oxy-Cope Rearrangement Enabled by Synergistic Ion Binding. *Isr. J. Chem*. **2020**, *60*, 461–474. DOI: 10.1002/ijch.201900168 *(Special issue dedicated to Profs. Stephen Buchwald and John Hartwig in celebration of their receipt of the 2019 Wolf Prize.)*

11. Kennedy, C. R.; Zhong, H.; Joannou, M. V.; Chirik, P. J.* Pyridine(diimine) Iron Diene Complexes Relevant to Catalytic [2+2]-Cycloaddition Reactions. *Adv. Synth. Catal*. **2020**, *362*, 404–416. DOI: 10.1002/adsc.201901289 *(Special issue in honor of Professor Eric N. Jacobsen's 60th birthday.)*

10. Rosenkoetter, K.; Kennedy, C. R.; Chirik, P. J.;* Harvey, B. G.* [4+4]-Cycloaddition of Isoprene for the Production of High-Performance Bio-Based Jet Fuel. *Green Chem*. **2019**, *21*, 5616–5623. DOI: 10.1039/C9GC02404B

9. Kennedy, C. R.; Zheng, H.; Macaulay, R. L.[†]; Chirik, P. J.* Regio- and Diastereoselective, Iron-Catalyzed [4+4]-Cycloaddition of 1,3-Dienes. *J. Am. Chem. Soc*. **2019**, *141*, 8557–8573. DOI: 10.1021/jacs.9b02443

(Highlighted as "Synfact of the Month": Knochel, P.; Balkenhohl, M. Diastereoselective [4+4] Cycloadditions. Synfacts, 2019, 15, 0879)

8. Schmidt, V. A.; Kennedy, C. R.; Bezdek, M. J.; Chirik, P. J.* Selective [1,4]-Hydrovinylation of 1,3-Dienes with Unactivated Olefins Enabled by Iron–Diimine Catalysts. *J. Am. Chem. Soc.* **2018**, *140*, 3443–3453. DOI: 10.1021/jacs.8b00245

7. Klausen, R. S.; Kennedy, C. R.; Hyde, A. M.; Jacobsen, E. N.* Chiral Thioureas Promote Enantioselective Pictet–Spengler Cyclization by Stabilizing Every Intermediate and Transition State in the Carboxylic Acid-Catalyzed Reaction. *J. Am. Chem. Soc.* **2017**, *139*, 12299–12309. DOI: 10.1021/jacs.7b06811

6. Kennedy, C. R.[‡]; Lehnherr, D.[‡]; Rajapaksa, N. S.; Park, Y.; Ford, D. D.; Jacobsen, E. N.* Mechanism-Guided Development of a Highly Active Bis-thiourea Catalyst for Anion-Abstraction Catalysis. *J. Am. Chem. Soc.* **2016**, *138*, 13525–13528. DOI: 10.1021/jacs.6b09205

5. Kennedy, C. R.[‡]; Lin, S.[‡]; Jacobsen, E. N.* The Cation–π Interaction in Small-Molecule Catalysis. *Angew. Chem. Int. Ed.* **2016**, *55*, 12596–12624. DOI: 10.1002/anie.201600547

4. Kennedy, C. R.; Guidera, J. A.[†]; Jacobsen, E. N.* Synergistic Ion-Binding Catalysis Demonstrated via an Enantioselective, Catalytic [2,3]-Wittig Rearrangement. *ACS Cent. Sci.* **2016**, *2*, 416–423. DOI: 10.1021/acscentsci.6b00125

3. Lehnherr, D.; Ford, D. D.; Bendelsmith, A. J.; Kennedy, C. R.; Jacobsen, E. N.* Conformational Control of Chiral Amido-Thiourea Catalysts Enables Improved Activity and Enantioselectivity. *Org. Lett.* **2016**, *18*, 3214–3217. DOI: 10.1021/acs.orglett.6b01435

2. Ford, D. D.; Lehnherr, D.; Kennedy, C. R.; Jacobsen, E. N.* Anion-Abstraction Catalysis: The Cooperative Mechanism of α-Chloroether Activation by Dual H-Bond Donors. *ACS Catal.* **2016**, *6*, 4616–4620. DOI: 10.1021/acscatal.6b01384

1. Ford, D. D.[‡]; Lehnherr, D.[‡]; Kennedy, C. R.; Jacobsen, E. N. On- and Off-Cycle Catalyst Cooperativity in Anion-Binding Catalysis. *J. Am. Chem. Soc.* **2016**, *138*, 7860–7863. DOI: 10.1021/jacs.6b04686

Patents

6. Chirik, P. J.; Register, R. A.; Kovel, C. B.; Tortajada Navarro, A.; Kennedy, C. R.; Macaulay, R. High Molecular Weight, Low Polydispersity Polyisoprenes. U.S. Provisional Application No. 63/644,186. Filed: May 8, 2024.

5. Chirik, P. J.; Kovel, C. B.; Kennedy, C. R.; Macaulay, R. Functionalized Polyisoprenes and Applications Thereof. U.S. Provisional Application No. 63/644,086. Filed: May 8, 2024.

4. Carpenter, A. E.; Culcu, G.; Cai, I. C.; Lin, T.-P.; Chirik, P. J.; Kennedy, C. R.; Beromi, M. M. Improved Method to Produce Step Dienes. Application No. 17/680,556. Filed: February 25, 2022. U.S. Provisional Application No. 63/154,043. Filed: February 26, 2021.

3. Chirik, P. J.; Kennedy, C. R.; Beromi, M. M. Depolymerization of Oligomers and Polymers Comprising Cyclobutane Units. WO2021154931A1 **2021**.
Application No. PCT/US2021/015403. Filed: January 28, 2021
U.S. Provisional Application No. 62/966,863. Filed: January 28, 2020.

2. Harvey, B. G.; Rosenkoetter, K. E.; Chirik, P. J.; Kennedy, C. R. Producing Cyclic Fuels from Conjugated Diene. Patent No. US10981846B1, **2021**.
Application No. US16/542547. Filed: August 16, 2019

1. Chirik, P. J.; Kennedy, C. R.; Russel, S. Oligomeric and Polymeric Species Comprising Cyclobutane Units. Patent No. US11001667B2, **2021**.
Application No. US16/239938. Filed: January 4, 2019

Presentations

Conferences & Symposia

2024 18th Boron in the Americas Conference (BORAM-18)
(invited speaker, declined)

American Chemical Society (ACS) National Meeting, Denver
(invited symposium speaker "*Division of Organic Chemistry Young Investigator Symposium*" and "'*Advances in Molecular Reactivity and Material Properties Enabled by Mechanistic and Structural Methods*", planned 2024-08)

6th International Conference on Organometallics and Catalysis (OM&CAT-6)
("Young Invited Speaker", declined)

2024 Organic Synthesis Workshop (invited participant, planned 2024-08)

Telluride Meeting on Accelerating Reaction Discovery (invited participant, 2024-08)

Gordon Research Conference (GRC) – Stereochemistry @ Newport, RI
(invited discussion leader, 2024-07)

Gordon Research Conference (GRC) – Organometallic Chemistry @ Newport, RI
(attendee, invited poster talk "Pyridonate-Ligand-Enabled Electrophile Activation & Nucleophile Delivery for Nickel Catalysis", 2024-07)

EUChemS Organic Division Young Investigator Meeting, Dublin, Ireland
(invited US representative & speaker, planned 2024-07)

2023 Canadian Society of Chemistry (CSC) Meeting, Winnipeg
(invited symposium speaker "'*Ligand Design in Coordination Chemistry and Beyond*", declined)

28th Annual ACS Green Chemistry and Engineering Conference
(invited symposium speaker "*Sustainable Catalysis by Early-Career Scientists*" and "*Base Metal Catalysis*", 2024-06)

Florida Heterocyclic and Synthetic Chemistry (FloHet) Conference
(invited speaker, 2024-03)

34th U.S. Kavli Frontiers of Science Symposium (invited participant, 2024-03)

Anatolian Conference on Organic Chemistry (invited speaker, declined)

2023 35th Annual Packard Fellows Reunion (invited speaker, 2023-09)

Paul Chirik 50th Birthday Symposium @ Princeton University
(invited speaker, 2023-07)

2023 Canadian Society of Chemistry (CSC) Meeting, Vancouver
(invited symposium speaker "*Organic Chemistry (OC) in 2023: Highlighting the Diversity of People and Pursuits*", 2023-06)

2022 Southeast Regional Meeting of the American Chemical Society (SERMACS), San Juan
(invited symposium speaker "*Unusual Structure and Reactivity of Inorganic Molecules*", 2022-10)

American Chemical Society (ACS) National Meeting, Chicago
(contributed oral presentation, 2022-08)

Gordon Research Conference (GRC) – Organometallic Chemistry @ Newport, RI
(contributed poster, 2022-07)

2020 Eric N. Jacobsen 60th Birthday Symposium @ Harvard University
(invited flash talk, 2020-02)

2018 Gordon Research Conference (GRC) – Organometallic Chemistry @ Newport, RI
(contributed poster, 2018-07)

Graduate Research Symposium (GRS) – Organometallic Chemistry @ Newport, RI
(contributed oral presentation, 2018-07)

2017 American Chemical Society (ACS) Green Chemistry & Engineering Conference
(contributed oral presentation, 2017-06)

2016 American Chemical Society (ACS) National Meeting, Philadelphia, PA
(contributed oral presentation, 2016-08)

Gordon Research Conference (GRC) – Organic Reactions & Processes
(contributed poster, 2016-07)

1st Annual Catalysis in Chemistry Symposium, Boston, MA
(contributed poster, 2016-05)

2015 4th Annual Boston Symposium for Organic & Bioorganic Chemistry, Merck Research Laboratories, Boston, MA. (contributed poster, 2015)

8th CaRLa Winter School, University of Heidelberg/BASF, Heidelberg, Germany.
(invited poster, 2015)

2014 Gordon Research Conference (GRC) – Stereochemistry @ Newport, RI
(contributed poster, 2014-07)

Invited Seminars

pending University of New Hampshire, Department of Chemistry (planning in progress)

Stony Brook University, Department of Chemistry (planning in progress)

2024 New York University, Department of Chemistry (planned for 2024-11)

Colgate University, Department of Chemistry (planned for 2024-10)

Penn State University, Department of Chemistry (planned for 2024-10)

North Carolina State University, Department of Chemistry (planned for 2024-10)

University of Vermont, Department of Chemistry (planned for 2024-09)

2023 Indian Institute of Technology (IIT) – Delhi, Department of Chemistry (2023-12)

Rochester Institute of Technology, Department of Chemistry (2023-10)

2022	Williams College, Chemistry Department (Class of 1960's Scholars Seminar; 2022-12)
	Binghamton University, Chemistry Department (2022-08)
	University of Rochester, Chemistry–Biology Interface Training Program (2022-06)
	University of Rochester, Materials Science Program (2022-05)
	SUNY Potsdam, Department of Chemistry (2022-04)
	SUNY Buffalo State, Department of Chemistry (2022-03)
	Juniata College, Chemistry & Biochemistry Department (2022-03)
2019	The College of New Jersey, Chemistry Department (senior seminar guest, 2019-10)
2018	University of Rochester, Department of Chemistry (2018-03)

Funding

agreement pending — **Academic–Industrial Collaboration with Pfizer** [co-PI]
Rational Development of Next-Generation Methodologies for Functionalization of Carboxylic Acid Derivatives
Role: Academic Collaborator — Pfizer Collaborator: Dr. Thomas Knauber

2024-07 – 2029-06 — **NSF Faculty Early Career Development Program (CAREER)** [PI]
CAREER: Tautomeric-Ligand-Enabled Olefin Functionalization and Cross-Coupling Using Terrestrially Abundant Transition Metal Catalysts
Role: Principal Investigator — Total Award Amount: $770,000

2023-07 – 2028-06 — **NIH Maximizing Investigator Research Award (MIRA, R35)** [PI]
Mechanistic Insights into Catalytic Acyl C-O and C-N Activation and Cross Coupling
Role: Principal Investigator — Total Award Amount: $1,925,000

2023-01 – 2027-12 — **2022 Packard Fellowship in Science and Engineering** [PI]
Borrowing Functionality for Sustainable Synthesis by Cooperative Molecular Catalysis
Role: Principal Investigator — Total Award Amount: $875,000

2021-09 – 2023-08 — **ACS Petroleum Research Fund Doctoral New Investigator Award** [PI]
Magnetically Modulated Radical Relay Catalysis: Stimulus-Controlled Olefin Polymerization and Alkane C(sp^3)–H Functionalization
Role: Principal Investigator — Total Award Amount: $110,000

2022-08– 2025-07 — **NSF Major Research Instrumentation Grant** [co-PI]
MRI: Acquisition of a Cryoprobe 500 MHz Nuclear Magnetic Resonance (NMR) Spectrometer
Role: co-Principal Investigator — Total Award Amount: $605,314

Mentored Researchers

Current Research Group: 7 PhD students + 5 BS students + 1 postdoctoral scholar

Current — Medina Afandiyeva (G5); Kaycie Malyk (G5); Daniel Akuomoah (G4); Vivek Gangadharan Pillai (G4); Hailemariam Mitiku (G4); Dhriti Maity (G2); Manana Tsiskarishvili (G2)

Rebecca Reagan (U4); Abraham Ellenbogen (U4); Matthew Gleason (U3); Haley Maury (U2); Zachary Paine (U2)

Dr. Bappaditya Goswami (PD)

Former

Dr. Abhishek Kadam (PD, 2020–2023)

Roberto Leon Baxin (MS, 2023); Dalton Hanaway (MS, 2022; BS, 2021); Ryan Ballirano (MS, 2021); Kathryn Goerl (MS, 2021)

Xijue (Jade) Wu (BS, 2023; Take-5, 2024); Winifred Dorlean (McNair Scholar, 2023; BA, 2024); Daniel Nakamura (BS, 2023); Aliza Panjwani (BS, 2023); Elliot Silk (BS, 2022); Sarah Craig (BS, 2021)

Jessica Navarro Vega (iScholar, 2024); Julia Shoemaker (REU, 2023); Jorge Castaño Valencia (iScholar, 2022)

Thesis Advisory Committee

Parbhat Singh (Partridge Lab, current); Abhishek Roy (Partridge Lab, current); Becca Walls (Matson Lab, current); Owen Monteferrante (Paradine Lab, current); Patrycia Zybura (Frontier Lab, current); Ignacio Camarero Temiño (Jones Lab, current); Cay McNichol (Paradine Lab, current); Ethan DeCicco (Paradine Lab, current); Hannah Distaffen (Nilsson Lab, current)

Amanda Canfield (Paradine Lab, PhD 2024); Aleksa Milosavljevic (Frontier Lab, PhD 2024); Shilpa Bhatia (Neidig Lab, PhD 2023); Analuz Mark (Dinnocenzo Lab, PhD 2022); Andrew Van der Weide (Jones Lab, PhD 2021); Juan Villada Morales (Fasan Lab, transferred)

Ryan Howell (Physics & Astronomy, PhD expected 2024-08); Dahlia Veyrat (Physics & Astronomy, PhD 2023); Wriju Chowdhury (Earth & Environmental Sciences, PhD 2022); Evan Witz (Mathematics, PhD 2021)

Teaching Activities

CHEM 172 **First-Year Organic Chemistry II** (Spring 2020, Spring 2022–2024)

(4 credit hours) CHEM 172 is the second semester of a one-year sequence examining the fundamental concepts, principles, and practices of organic chemistry, with a focus on defining relationships between molecular structure, reactivity, and function. Students take an active role in defining questions, evaluating evidence, weighing arguments, developing and testing hypotheses, and communicating these complex topics. This study of organic chemistry is integrated with a review of the key concepts from general chemistry and highlights relationships with related areas including organometallic chemistry, polymer chemistry, and biochemistry. The CHEM171/172 sequence is designed for first-year students with strong preparation in chemistry (2 years of general chemistry and an AP score of 4 or 5, or equivalent). This sequence provides a fast-track to advanced chemistry courses and the fulfillment of degree requirements in other disciplines.

Typical Enrollment: 30–50 students Workshop Leaders Supervised: 4–5

CHEM 433 **Advanced Organic Chemistry***
(Fall 2020, Fall 2021, Fall 2024) *course material developed de novo

(4 credit hours) CHEM 433 is an exploration of the advanced concepts, principles, and practices of organic chemistry. Topics of emphasis include structure, stereochemistry and

conformational analysis; descriptions of bonding; stereoelectronic effects; reaction energetics; and mechanisms of organic reactions including pericyclic reactions, photochemical reactions, and chemistry of reactive intermediates. Students take an active role in defining questions, evaluating evidence, weighing arguments, developing and testing hypotheses, and communicating to a scientific audience. This course is designed for beginning graduate students and upper-level undergraduate students.

Typical Enrollment: 6–15 students Workshop Leaders Supervised: 1

CHEM 434 **Advanced Physical Organic Chemistry (Methods for Mechanistic Elucidation)***
(Spring 2023, Spring 2024) *course material developed de novo

(4 credit hours) CHEM 434 is a literature-based class exploring modern methods for mechanistic elucidation. Topics of emphasis include transition state theory, kinetics, linear and multivariate free-energy relationships, kinetic isotope effects, photochemistry, and catalysis. Students take an active role in evaluating the primary literature, developing and testing hypotheses, and communicating to a scientific audience. This course is designed for beginning graduate students and upper-level undergraduate students.

Typical Enrollment: 3–10 students

Synergistic Activities & Service

Department Activities

Educational Effectiveness Committee (2024–present)

Faculty Recruiting Committee (2023–present)

Diversity, Equity, Inclusion & Outreach Committee
(2020–present; Forum Series Coordinator, 2021–2022; Chair, 2022–present);

Graduate Recruiting Committee (2020–present)

Ad Hoc Committee for Department Associate Chair Selection (2022)

Development/News-Outreach Committee (2021–2022)

Ad Hoc Committee for Instructional-Track Faculty Hiring (2021)

Ad Hoc Committee for Instructional-Track Faculty Review (2021)

Ad Hoc Committee for Department Chair Selection (2021)

ACS Bridge Program Partner Site
(Application Facilitator, 2020; Program Liaison, 2022–2023);

Graduate Orientation Co-organizer (2020–2021);

Graduate Studies Committee (2020–2022)

University Activities

Fulbright Campus Review Committee (Fall 2024)

AS&E Promotion and Tenure Guidelines Review Committee (2024–present)

Blackboard Ultra Pilot Group (Spring 2024, Fall 2024)

Equity in Graduate Education, Department Liaison (2022–present)

UR Undergraduate Research Discover Grant Reviewer (2022–2024)

UR Undergraduate Research Expo Judge (2021–2023)

#URSTEMrecharge Co-organizer (2021)

Sproull University Fellowship Reviewer (2020)

Reviewing Activities (Journals)	*Accounts of Chemical Research; ACS Catalysis; Angewandte Chemie International Edition; Cell Reports Physical Science; Chem; Chemistry – A European Journal; ChemCatChem; Chemical Reviews; European Journal of Organic Chemistry; Journal of the American Chemical Society; Journal of Organic Chemistry; Nature Catalysis; Organic Process Research & Development*; *Organometallics; Science; Synlett*
Reviewing Activities (Funding)	National Institutes of Health (2022) American Chemical Society Petroleum Research Fund (2021–2022, 2024) National Science Foundation (2020–2023)
Reviewing Activities (Misc.)	SACNAS National Conference Research Presentation Applications (2021) International Thesis Assessment for the Institut Català d'Investigació Química (ICIQ) and the Universitat Rovira i Virgili (2021)
National Activities	Empowering Women in Organic Chemistry (EWOC) Annual Conference, *Current and Future Academic Faculty Peer Networking,* session co-host (2024) Empowering Women in Organic Chemistry (EWOC) Joint Chapters Symposium, feedback panelist (2024) *Organic Chemistry Frontiers* Early Career Advisory Board (2024–present) *Chem* Next Generation Advisory Board (2023–present) *JACS Au* Early Career Advisory Board (2022) ACS Northeast Regional Meeting Symposium Co-Chair (2022) Iota Sigma Pi, National Council, Members-at-Large Coordinator (2020) Chemistry Women Mentorship Network, Mentor (2017–present)
Professional Development	Certificate in *Fostering a Culture of Belonging*, Association of College and University Educators (ACUE) (2023) *Evaluating Group Work* Workshop, University of Rochester Center for Teaching (2023) *Designing Effective Group Work* Workshop, University of Rochester Center for Teaching (2023) *AI and Assessment* Workshop, University of Rochester Center for Teaching (2023) *Fostering Wellbeing in Racialized Mentoring Environments* Workshop, Equity in Graduate Education Consortium (2022) *Understanding Imposter Syndrome* Workshop, Inclusive Graduate Education Network (2022) *Transparent (TILT) Assignment Design* Workshop, University of Rochester Center for Teaching (2022) *Introduction to Equity Minded Mentoring* Workshop, Equity in Graduate Education Consortium (2022); *Antiracist Feedback & Messaging* Workshop, University of Rochester AS&E (2022) *Bias-Related Incidents & Disability Resources* Workshop, University of Rochester AS&E (2022) *Creating a Queer-Inclusive AS&E* Workshop, University of Rochester (2021)

Fostering an Anti-Racist Campus Workshops, University of Rochester AS&E (2020)

Small Teaching/Active Learning Group, University of Rochester CETL (2020)

NSF MPS Broadening Participation Workshop for Young Investigators (2019)

ACS/Cottrell/Research Corp. New Faculty Workshop (2019)

Harvard University Bok Teaching Seminars/Workshops (2012–2016)

Affiliations American Chemical Society (ACS), Phi Beta Kappa

Prior Service Harvard University, Green Labs Representative (2014–2016)

Harvard University, Academic Integrity Committee Member (2013–2016)

Harvard University, Department of Chemistry & Chemical Biology, Laboratory Safety Committee Representative (2013–2016)

Harvard College, WiSTEM Mentorship Program, Mentor (2014)

Harvard College, Quincy House Non-Resident Tutor (2012–2013)

Boston Women in Chemistry Symposium, Organizing Committee Member (2012)