

ACADEMIC POSITIONS

<i>Associate Professor of Chemistry</i> Occidental College – Los Angeles, CA	since 2020
<i>Assistant Professor of Chemistry</i> Occidental College – Los Angeles, CA	2014 – 2020
<i>NIH Ruth L. Kirschstein Postdoctoral Scholar</i> California Institute of Technology – Pasadena, CA Advisor: Professor Robert H. Grubbs	2012 – 2014
<i>Adjunct Professor of Chemistry</i> Occidental College – Los Angeles, CA	2013 – 2014

EDUCATION

<i>Doctor of Philosophy in Chemistry, 2012</i> University of California, Irvine Advisor: Professor Larry E. Overman <i>Investigation of the Scope and Mechanism of the Palladium-Catalyzed Synthesis of Enantioenriched Allylic Esters from Prochiral (Z)-Allylic Alcohols and Progress Toward the Total Synthesis of (-)-Massadine</i>	
<i>Bachelor of Arts in Chemistry, 2007</i> with Honors, <i>Magna cum Laude</i> Minors in Music and Japanese Studies Occidental College – Los Angeles, CA Advisor: Professor Donald R. Deardorff	

HONORS AND AWARDS

Nationally Competitive Grants and Awards

Henry Dreyfus Teacher-Scholar Award	2022
NSF RUI Supplement to support High School student researchers (MPS-High)	2022
NIH R15 Research Grant	2020
NSF MRI Grant (PI; for a 400 MHz NMR Spectrometer)	2020
Organic Syntheses, Inc. Grant for Summer Research at an Undergraduate Institution	2020
NSF MRI Grant (Co-PI)	2019
NSF RUI Research Grant	2019
ACS Petroleum Research Fund – Undergraduate New Investigator Grant	2016
NIH Ruth L. Kirschstein NRSA Postdoctoral Fellowship (NIGMS)	2012
Bristol-Myers Squibb Minority Chemist Fellowship	2010
National Science Foundation Graduate Research Fellowship; Honorable Mention	2008
Member: Phi Beta Kappa Honors Society	2007

PUBLICATIONS (ORCID: [0000-0002-3407-2235](https://orcid.org/0000-0002-3407-2235))

Undergraduate co-authors underlined.

Independent Publications

15. Katherine C. Forbes, Anne Marie Crooke, Yuri Lee, Masamu Kawada, Kian M. Shamskhov, Rachel A. Zhang, Jeffrey S. Cannon "Photoredox-catalyzed Oxidation of Anions for the Atom-Economical Hydro-, Amido-, and Dialkylation of Alkenes," *J. Org. Chem.* **2022**, *87*, 3498–3510. doi: [10.1021/acs.joc.1c03055](https://doi.org/10.1021/acs.joc.1c03055)
14. Donald R. Deardorff, Scott W. Niman, Mark I. Paulsen, Anasheh Sookezian, Meghan E. Whalen, Christopher J. Finlayson, Collrane Frivold, Hilary C. Brown, Jeffrey S. Cannon "Development of a Combined Enzyme- and Transition Metal-Catalyzed Strategy for the Synthesis of Heterocycles: Enantioselective Syntheses of (–)-Coniine, DAB-1, and Nectrisine," *ACS Omega* **2020**, *5*, 2005–2014. doi: [10.1021/acsomega.9b03990](https://doi.org/10.1021/acsomega.9b03990)
13. Natalie C. Dwulet, Tina A. Zolfaghari, Molly L. Brown, Jeffrey S. Cannon "Diastereoselective Synthesis of Unnatural Amino Acids by Alkylation of α -*tert*-Butanesulfinamide Auxiliary-Bound Enolates," *J. Org. Chem.* **2018**, *83*, 11510–11518. doi: [10.1021/acs.joc.8b01379](https://doi.org/10.1021/acs.joc.8b01379)
12. Nicholas J. Foy, Katherine C. Forbes, Anne Marie Crooke, Maxwell D. Gruber, Jeffrey S. Cannon "Dual Lewis Acid/Photoredox-Catalyzed Addition of Ketyl Radicals to Vinylogous Carbonates in the Synthesis of 2,6-Dioxabicyclo[3.3.0]octan-3-ones," *Org. Lett.* **2018**, *20*, 5727–5731. doi: [10.1021/acs.orglett.8b02442](https://doi.org/10.1021/acs.orglett.8b02442)

Mentored publications

11. Jeffrey S. Cannon, Larry E. Overman "Discussion Addendum for Preparation of the COP Catalysts: [(*S*)-COP-OAc]₂, [(*S*)-COP-Cl]₂, and (*S*)-COP-hfacac," *Org. Synth.* **2018**, *95*, 500–511. doi: [10.15227/orgsyn.095.0500](https://doi.org/10.15227/orgsyn.095.0500)
10. Jeffrey S. Cannon "A Nitron Dipolar Cycloaddition Strategy toward an Enantioselective Synthesis of Massadine," *Org. Lett.* **2018**, *20*, 3883–3887. doi: [10.1021/acs.orglett.8b01464](https://doi.org/10.1021/acs.orglett.8b01464)
9. Shao-Xiong Luo, Jeffrey S. Cannon, Buck L. H. Taylor, Keary M. Engle, K. N. Houk, Robert H. Grubbs; "Z-Selective Cross-Metathesis and Homodimerization of 3*E*-1,3-Dienes: Reaction Optimization, Computational Analysis, and Synthetic Applications," *J. Am. Chem. Soc.* **2016**, *138*, 14039–14046. doi: [10.1021/jacs.6b08387](https://doi.org/10.1021/jacs.6b08387)
8. Jeffrey S. Cannon, Larry E. Overman; "Palladium(II)-Catalyzed Enantioselective Reactions Using COP Catalysts," *Acc. Chem. Res.* **2016**, *49*, 2220–2231. doi: [10.1021/acs.accounts.6b00398](https://doi.org/10.1021/acs.accounts.6b00398)
7. Jeffrey S. Cannon, Lufeng Zou, Peng Liu, Yu Lan, Daniel J. O'Leary, K. N. Houk, Robert H. Grubbs; "Carboxylate-Assisted C(sp³)-H Activation in Olefin Metathesis-Relevant Ruthenium Complexes," *J. Am. Chem. Soc.* **2014**, *136*, 6733–6743. doi: [10.1021/ja5021958](https://doi.org/10.1021/ja5021958)
6. Jeffrey S. Cannon, Robert H. Grubbs; "Alkene Chemoselectivity in Ruthenium-Catalyzed Z-Selective Olefin Metathesis," *Angew. Chem., Int. Ed.* **2013**, *52*, 9001–9004. doi: [10.1002/anie.201302724](https://doi.org/10.1002/anie.201302724)

5. Jeffrey S. Cannon, Angela C. Olson, Larry E. Overman; "Palladium(II)-Catalyzed Enantioselective Synthesis of 2-Vinyl Oxygen Heterocycles," *J. Org. Chem.* **2012**, *77*, 1961–1973. doi: [10.1021/jo202553a](https://doi.org/10.1021/jo202553a)
4. Jeffrey S. Cannon, James H. Frederich, Larry E. Overman; "Palladacyclic Imidazoline-Naphthalene Complexes: Synthesis and Catalytic Performance in Pd(II)-Catalyzed Enantioselective Reactions of Allylic Trichloroacetimidates," *J. Org. Chem.* **2012**, *77*, 1939–1951. doi: [10.1021/jo2025724](https://doi.org/10.1021/jo2025724)
3. Jeffrey S. Cannon, Larry E. Overman; "Is There No End to the Total Syntheses of Strychnine? Lessons to be Learned for Strategy and Tactics in Total Synthesis," *Angew. Chem., Int. Ed.* **2012**, *51*, 4288–4311. doi: [10.1002/anie.201107385](https://doi.org/10.1002/anie.201107385)
2. Jeffrey S. Cannon, Stefan F. Kirsch, Larry E. Overman; "Catalytic Asymmetric Synthesis of Chiral Allylic Esters," *J. Am. Chem. Soc.* **2010**, *132*, 15185–15191. doi: [10.1021/ja106685w](https://doi.org/10.1021/ja106685w)
1. Jeffrey S. Cannon, Stefan F. Kirsch, Larry E. Overman, Helen F. Sneddon; "Mechanism of the Cobalt Oxazoline Palladacycle (COP)-Catalyzed Asymmetric Synthesis of Allylic Esters," *J. Am. Chem. Soc.* **2010**, *132*, 15192–15203. doi: [10.1021/ja106688j](https://doi.org/10.1021/ja106688j)

RESEARCH MENTORSHIP

Professor Cannon has mentored 41 students in directed research, accounting for a cumulative 167 semesters and summers of active research.

45 Occidental College Undergraduates and 4 High School Students

PRESENTATIONS

Occidental College undergraduate co-authors underlined. Presenter marked with an asterisk

Jeffrey S. Cannon*; "Making C–C Bonds at a Liberal Arts College," University of California, Irvine, Irvine, CA, November 16, 2022; Invited Seminar

Jeffrey S. Cannon*, Scott W. Niman, Donald R. Deardorff; "Combined enzyme- and transition metal-catalyzed strategy for the syntheses of nitrogen heterocycles: (–)-coniine, DAB-1, and nectrisine," Spring 2022 American Chemical Society National Meeting, San Diego, CA, March 20, 2022; Oral presentation 3645398

Jeffrey S. Cannon*; "Photoredox-Catalyzed Anion Oxidation in Carbon–Carbon Bond Formation," Florida Heterocycles and Synthesis Conference, University of Florida, Gainesville, FL, March 8, 2022; Oral seminar

Jeffrey S. Cannon*; "Chiral auxiliaries as useful tools for the stereoselective synthesis of non-canonical amino acids," Pomona College, Claremont, CA, November 9, 2021; Invited Seminar

Jeffrey S. Cannon*; "Heterocycles and Bicycles: Synthesizing a Career in Chemistry," Occidental College, Los Angeles, CA; September 20, 2021

Jeffrey S. Cannon*; "New Methods for Carbon-Carbon Bond Formation," California State University Long Beach, Long Beach, CA, April 17, 2019; Invited Seminar

Jeffrey S. Cannon*; "Making Carbon-Carbon Bonds at a Liberal Arts College," The Scripps Research Institute, La Jolla, CA, October 26, 2018; Invited Seminar

Jeffrey S. Cannon*; "New Methods for Carbon-Carbon Bond Formation," California State University at Channel Islands, Camarillo, CA, September 28, 2018; Invited Seminar

Jeffrey S. Cannon*; "Dual Lewis acid/photoredox-catalyzed addition of ketyl radicals to vinylogous carbonates in the synthesis of 2,6-dioxabicyclo[3.3.0]octan-3-ones," 256th American Chemical Society National Meeting, Boston, MA, August 19, 2018; Oral Presentation ORGN-73

Jeffrey S. Cannon*; “Synthetic Organic Chemistry is Cool! (No, Really!)” Occidental College Summer Research Program Seminar Series; June 7, 2017

Alexander W. Rand, Jeffrey S. Cannon*; “Total Synthesis of Isofagomine,” National Organic Symposium, University of Maryland College Park, College Park, MD, June 29, 2015; Poster Presentation

Presentations given by students:

Lucien C. Delgutte*, Kian Shamskhov, Robert C. Boeke, Jeffrey S. Cannon; “Oxidative alkene functionalization via photoredox generated 1,3-dicarbonyl radicals,” 47th National Organic Chemistry Symposium, June 26, 2022; Poster Presentation

Kian Shamskhov*, Katherine Forbes, Anne Marie Crooke, Yuri Lee, Masamu Kawada, Rachel Zhang, Jeffrey S. Cannon; “Visible Light Photoredox Catalyzed Functionalization of Alkenes with 1,3-Dicarbonyls and N-Aryl Amides,” Spring 2022 American Chemical Society National Meeting, San Diego, CA, March 22, 2022; Poster presentation 3653063.

Clarissa Kiyomura*, Daniel Essayan, Jeffrey S. Cannon; “Synthesis of indolizidines from L-Pyroglutamic acid using the Ireland–Claisen rearrangement and ring-closing metathesis,” Spring 2022 American Chemical Society National Meeting, San Diego, CA, March 23, 2022; Poster presentation 3649857.

Kayla Steinke*, Hailey Lister, Tre’Shunda James, Sophia Yang, Jeffrey S. Cannon; “Diastereoselective Synthesis of Unnatural Amino Acids,” 46th National Organic Chemistry Symposium, June 25, 2019; Poster Presentation.

Marc Kawada*, Anne Marie Crooke, Yuri Lee, Joseph Costello, Jeffrey S. Cannon; “Intramolecular Alkene Hydroalkylation with 1,3-dicarbonyls via Photoredox Catalysis,” 46th National Organic Chemistry Symposium, June 26, 2019; Poster Presentation.

Yuri Lee*, Marc Kawada, Anne Marie Crooke, Katherine Forbes, Jeffrey S. Cannon; “Inter- and Intramolecular Alkylation of 1,3-Dicarbonyl Radicals to Olefins via Photoredox Catalysis,” 46th National Organic Chemistry Symposium, June 23, 2019; Poster Presentation. ***Best Undergraduate Poster Awardee***

Anne Marie Crooke*, Katherine Forbes, Jeffrey S. Cannon; “Photoredox-Catalyzed Alkene Hydroalkylation and Dialkylation,” 257th American Chemical Society National Meeting, Orlando, FL, April 2, 2019; Poster Presentation ORGN-138

Daniel Essayan*, Jeffrey S. Cannon; “Synthesis of Indolizidines from L-Pyroglutamic acid using the Dianionic Ireland–Claisen Rearrangement and Ring-Closing Metathesis,” 257th American Chemical Society National Meeting, Orlando, FL, April 2, 2019; Poster Presentation ORGN-137

Katherine Forbes*, Nicholas Foy, Maxwell Gruber, Jeffrey S. Cannon; “Synthesis of Furanolactone Motifs using Photoredox/Lewis Acid-Catalyzed Ketyl Radical Cyclizations,” ACS Division of Organic Chemistry SURF Conference, Merck campus, Boston, August 30, 2017; Poster Presentation.

Katherine Forbes*, Nicholas Foy, Maxwell Gruber, Jeffrey S. Cannon; “Synthesis of Furanolactone Motifs using Photoredox/Lewis Acid-Catalyzed Ketyl Radical Cyclizations,” National Organic Symposium, University of California, Davis, June 25, 2017; Poster Presentation.

Molly Brown*, Natalie Dwulet, Tina Zolfaghari, Daniel Essayan, Jeffrey S. Cannon; “Diastereoselective Synthesis of Unnatural Amino Acids via an Auxiliary-Directed Enolate Alkylation,” National Organic Symposium, University of California, Davis, June 25, 2017; Poster Presentation.

Scott Niman*, Isaac Wang, Alexander Rand, Jeffrey S. Cannon; “Total Synthesis of DAB-1,” National Organic Symposium, University of California, Davis, June 27, 2017; Poster Presentation.

Natalie Dwulet*, Jeffrey S. Cannon; “Development of an Auxiliary-Directed Enolate Alkylation for Unnatural Amino Acid Synthesis,” 253rd American Chemical Society National Meeting, San Francisco,

CA, April 2, 2017; Poster Presentation ORGN-169

Nicholas Foy*, Jeffrey S. Cannon; “Reductive Ketyl Radical Cyclizations Towards the Total Synthesis of the Plakortone Family of Natural Products,” 253rd American Chemical Society National Meeting, San Francisco, CA, April 2, 2017; Poster Presentation ORGN-168

Benjamin Sartor*, Jeffrey S. Cannon; “Concise Synthesis of Oncostemonols Enabled by Transition-Metal Catalyzed Coupling Reactions,” 253rd American Chemical Society National Meeting, San Francisco, CA, April 5, 2017; Poster Presentation ORGN-846

Cannon Lab students have additionally given 29 presentations at the Southern California Conference on Undergraduate Research

TEACHING EXPERIENCE

Instructor, CHEM120L, General Chemistry Laboratory, Occidental College

Instructor, CHEM220, Organic Chemistry I, Occidental College

Instructor, CHEM221, Organic Chemistry II, Occidental College

Instructor, CHEM220L, Organic Chemistry I Laboratory, Occidental College

Instructor, CHEM221L, Organic Chemistry II Laboratory, Occidental College

Instructor, CHEM360, Physical Organic Chemistry, Occidental College

Instructor, CHEM380, Organic Synthesis, Occidental College

PROFESSIONAL ACTIVITIES

Memberships

Member: Occidental College Biochemistry Program

Member: American Chemical Society, Organic Division

Member: Council on Undergraduate Research

Elected Chemistry Division Councilor 2022–2025

Member: Alpha Chi Sigma – Chemistry Professional Fraternity

Beta Mu chapter faculty advisor since 2015

Member: Phi Beta Kappa honors society

Delta of California chapter Vice President, 2019 and 2020

Service Activities

Attendee: Project Kaleidoscope STEM Leadership Institute 2021

Organizer: Occidental College Gray–Hill Seminar Series

Barry M. Goldwater Scholarship Campus Representative

ACS National Meeting Session Chair, Fall 2018

Scientific Review

American Chemical Society Article Reviewer (J. Org. Chem., Org. Lett., ACS Omega)

American Chemical Society Petroleum Research Fund Grant Reviewer, 2017–2022

NIH Early Career Grant Reviewer (NIGMS, SBCB), 2020

NSF Grant Proposal Reviewer (CHEM-SYN), 2021