

## ACADEMIC POSITIONS

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

## EDUCATION

<i>Doctor of Philosophy in Chemistry, 2012</i> <b>University of California, Irvine</b> 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 <b>Occidental College</b> – Los Angeles, CA Advisor: Professor Donald R. Deardorff	

## HONORS AND AWARDS

### *Nationally Competitive Grants and Awards*

NIH R15 Research Grant (\$268k)	2020
NSF MRI Grant (PI; \$340k for a 400 MHz NMR Spectrometer)	2020
Organic Syntheses, Inc. Grant for Summer Research at an Undergraduate Institution (\$8,000)	2020
NSF MRI Grant (Co-PI; \$494k for a High-Performance Computer Cluster)	2019
NSF RUI Grant (\$175k)	2019
ACS Petroleum Research Fund – Undergraduate New Investigator Grant (\$55k)	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
Barry M. Goldwater Scholar	2006
Pfizer Summer Undergraduate Research Fellowship	2006

## Occidental Grants and Awards

Occidental College Faculty Enrichment Grant	2018
Occidental College Faculty Enrichment Grant	2016
Occidental College Faculty Startup Grant	2014

## PUBLICATIONS

Undergraduate co-authors underlined.

### Independent Publications

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  $\alpha$ -*tert*-Butanesulfonamide 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]<sub>2</sub>, [(*S*)-COP-Cl]<sub>2</sub>, 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(sp<sup>3</sup>)-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.

39 Occidental College Undergraduates and 2 High School Students, including:

- 20 women
- 2 underrepresented minorities

Of the 25 students who have graduated from Occidental college:

- 12 are currently enrolled in or have completed graduate programs – Harvard (2), UC Irvine (5), Michigan, UT Arlington, Columbia, USC, Georgetown, Keck Graduate Institute
- 4 have attended and 3 are applying to medical school – Georgetown, Duke, Utah, Chicago
- 3 are enrolled in other health professional programs – Boston College, UCSF, Mexico City
- 5 are employed in the chemical industry

## STUDENT ACCOLADES

### National Awards

Anne Marie Crooke – NSF GRFP '21	Natalie Dwulet – NSF GRFP '17
Yuri Lee – ACS Organic Division Travel Grant '19	Nicholas Foy – NSF GRFP, Hon. Mention '17
Anne Marie Crooke – WCC Travel Award '19	Alexander Rand – NSF GRFP, Hon. Mention '17
Katherine Forbes – ACS Organic Division SURF '17	Natalie Dwulet – Barry M. Goldwater Scholarship '16
Katherine Forbes – Goldwater Hon. Mention '17	

### Major competitive awards managed by Occidental College

Clarissa Kiyomura – URC Summer Fellowship '21	Scott Niman – URC Summer Fellowship '17
Kian Shamskhov – Fletcher Jones Science Scholar '21	Matthew Schmidt – URC Summer Fellowship '17
Alex Orebic – URC Summer Fellowship '20	Tina Zolfaghari – URC Summer Fellowship '17
Sophia Yang – URC Summer Fellowship '20	Molly Brown – Fletcher–Jones Science Scholar '17
Yuri Lee – URC Summer Fellowship '19	Nicholas Foy – URC Summer Fellowship '16
Marc Kawada – Fletcher–Jones Science Scholar '19	Benjamin Sartor – URC Summer Fellowship '16
Daniel Essayan – URC Summer Fellowship '18	He (Isaac) Wang – URC Summer Fellowship '16
Paul Tomlinson – URC Summer Fellowship '18	Natalie Dwulet – Norris Science Scholar '16
Anne Marie Crooke – Norris Science Scholar '18	Benjamin Sartor – URC Summer Fellowship '15

## PRESENTATIONS

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

### *Presentations given by Prof. Cannon:*

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\*; “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,” 256<sup>th</sup> 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:*

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

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

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

Anne Marie Croke\*, Katherine Forbes, Jeffrey S. Cannon; “Photoredox-Catalyzed Alkene Hydroalkylation and Dialkylation,” 257<sup>th</sup> 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,” 257<sup>th</sup> 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," 253<sup>rd</sup> 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," 253<sup>rd</sup> 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," 253<sup>rd</sup> 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*

*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 since 2019

### 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, 2017–2021*

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

*NSF Grant Proposal Reviewer (Chemical Synthesis), 2021*