

## 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

Over \$1,300,000 in Nationally Competitive Grants and Awards:

NSF RUI Supplement to support High School student researchers (MPS-High; \$9k)	2022
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 Research 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

## PUBLICATIONS (ORCID: [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](#)
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](#)
13. Natalie C. Dwulet, Tina A. Zolfaghari, Molly L. Brown, Jeffrey S. Cannon "Diastereoselective Synthesis of Unnatural Amino Acids by Alkylation of  $\alpha$ -*tert*-Butanesulfinamide Auxiliary-Bound Enolates," *J. Org. Chem.* **2018**, *83*, 11510–11518. doi: [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](#)

### 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](#)
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](#)
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](#)
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](#)
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](#)
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](#)
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](#)

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 49 students in directed research, accounting for over 200 cumulative semesters and summers of active research.

45 Occidental College Undergraduates and 4 High School Students, including:

- 24 women
- 2 underrepresented minorities
- Students average over two years of continuous involvement in research each

Of the 35 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 4 are applying to medical school – Georgetown, Duke, Utah, Chicago
- 4 are enrolled in other health professional programs – Boston College, UCSF, Mexico City
- 7 are employed in the chemical industry

## STUDENT ACCOLADES

**Cannon Lab students have received over 30 research awards including:**

Masamu Kawada – NDSEG Fellowship '22	Katherine Forbes – Goldwater Hon. Mention '17
Kian Shamskhov – Fulbright Research Award '22	Natalie Dwulet – NSF GRFP '17
Anne Marie Crooke – NSF GRFP '21	Nicholas Foy – NSF GRFP, Hon. Mention '17
Yuri Lee – ACS Organic Division Travel Grant '19	Alexander Rand – NSF GRFP, Hon. Mention '17
Anne Marie Crooke – WCC Travel Award '19	Natalie Dwulet – Barry M. Goldwater Scholarship '16
Katherine Forbes – ACS Organic Division SURF '17	

## PRESENTATIONS

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

**ACS National meeting:** 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

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

**Invited 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.

**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.

**ACS National Meeting:** *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

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

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

***Cannon Lab students have given over 100 research presentations, including:***

- *15 presentations at national chemistry meetings (e.g., ACS national meetings, National Organic Chemistry Symposium)*
- *Over 30 presentations at the Southern California Conference for Undergraduate Research*

## **PROFESSIONAL ACTIVITIES**

### **Committees**

<i>Council on Undergraduate Research Member</i>	<i>2015–present</i>
<b><i>Elected Chemistry Division Councilor</i></b>	<i>2022–present</i>
<i>Occidental College Sponsored Research Officer Search Committee</i>	<i>2022</i>
<i>Chemistry Diversity Equity and Inclusion Committee</i>	<i>2020–present</i>
<i>Occidental Employee Emergency Relief Fund Committee</i>	<i>2020–2021</i>
<i>Occidental College High-Performance Computing Committee</i>	<i>2019–present</i>
<i>Chemistry and Biochemistry Honors Thesis Committees</i>	<i>2017–present</i>
<i>Analytical Chemistry Faculty Search Committee</i>	<i>2017</i>
<i>Computer Science Program Advisory Committee</i>	<i>2016–2018</i>

### **Memberships**

<i>Alpha Chi Sigma – Chemistry Professional Fraternity</i>	<i>2015–present</i>
<b><i>Beta Mu chapter faculty advisor</i></b>	<i>2015–present</i>
<i>Phi Beta Kappa honors society</i>	<i>2007–present</i>
<b><i>Delta of California chapter Vice President</i></b>	<i>2019–2021</i>
<i>American Chemical Society, Organic Division</i>	<i>2010–present</i>

### **Service Activities**

<b>Attendee:</b> Project Kaleidoscope STEM Leadership Institute	2021
<b>Session Chair:</b> ACS National Meeting	2018
<b>Organizer:</b> Occidental College Gray–Hill Seminar Series	2015–present
<b>Faculty Representative:</b> Barry M. Goldwater Scholarship	2015–present

### **Scientific Review**

NSF Grant Proposal Reviewer (CHEM-SYN)	2021
NIH Early Career Grant Reviewer (NIGMS-SBCB)	2020
American Chemical Society Article Reviewer ( <i>J. Org. Chem.</i> , <i>Org. Lett.</i> , <i>ACS Omega</i> )	2018–present
American Chemical Society Petroleum Research Fund Grant Reviewer	2017–present

## **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