

# Ryan J. DeLuca, Ph.D.

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University of Utah  
Department of Chemistry  
315 South 1400 East, Rm 3254  
Salt Lake City, UT 84112

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r.deluca@utah.edu

## Education

NIH Postdoctoral Research Fellow 2016  
Stanford University

Ph.D., Organic Chemistry 2014  
University of Utah  
GPA: 3.95

B.S., Chemistry 2007  
Southern Utah University  
GPA: 3.94, *summa cum laude*

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## Professional Experience

### UNIVERSITY OF UTAH

- Assistant Professor (Lecturer) 2021-present
- Instructor for the Organic Chemistry series (2310/2320)

### UNIVERSITY OF UTAH

- Research Assistant Professor 2016-2021
  - Lab manager for Professor Matthew S. Sigman
  - Responsibilities include: mentoring graduate/undergraduate students, manuscript preparation, chemical inventory and ordering, grant writing and editing, lab budgeting, and scheduling
  - Instructor for the Organic Chemistry series (2310/2320)
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## Research Experience

### STANFORD UNIVERSITY

2014 – 2016

- NIH Postdoctoral Research Fellow
- Mentored by Professor Justin Du Bois
- Synthesis of Modified Guanidinium Toxins as Selective Biological Probes to Investigate Voltage-Gated Sodium ion Channels
- Evaluation of Guanidinium Toxins against Voltage-Gated Sodium ion Channels Using Whole-cell Patch Clamp Electrophysiology and Protein Mutagenesis

## UNIVERSITY OF UTAH

2009 – 2014

- Graduate Research Associate
- Mentored by Professor Matthew S. Sigman
- Palladium-Catalyzed Reductive Cross-Coupling Reactions
- TBHP-Mediated Wacker Oxidations
- Rhodium-Catalyzed Intermolecular C–H Aminations

## UNIVERSITY OF ILLINOIS (Champaign-Urbana)

2007 – 2008

- Graduate Research Associate
- Mentored by Professor John F. Hartwig
- Palladium-Catalyzed  $\alpha$ -Arylation of Carbonyl Compounds

## Awards and Honors

Ruth L. Kirschstein National Research Service Award – National Institutes of Health/NIGMS	2014
IUPAC Poster Prize Certificate (OMCOS-17)	2013
Dow Chemical Scholarship	2010

## Teaching Experience

Chemistry 2320 (Organic Chemistry II, 49 students)	Spring 2022
Chemistry 2320 (Organic Chemistry II, 130 students)	Fall 2021
Chemistry 2310 (Organic Chemistry I, 130 students)	Summer 2021
Chemistry 2320 (Organic Chemistry II, 76 students)	Summer 2021
Chemistry 2320 (Organic Chemistry I, 324 students)	Spring 2021
Chemistry 2320 (Organic Chemistry II, 122 students)	Fall 2020
Chemistry 2310 (Organic Chemistry I, 110 students)	Summer 2020
Chemistry 2320 (Organic Chemistry II, 67 students)	Summer 2020
Chemistry 2310 (Organic Chemistry I, 303 students)	Spring 2020
Chemistry 2320 (Organic Chemistry II, 133 students)	Fall 2019
Chemistry 2320 (Organic Chemistry II, 48 students)	Summer 2019
Chemistry 2310 (Organic Chemistry I, 295 students)	Spring 2019
Chemistry 2320 (Organic Chemistry II, 132 students)	Fall 2018
Chemistry 2320 (Organic Chemistry II, 36 students)	Summer 2018
Chemistry 2320 (Organic Chemistry II, 51 students)	Spring 2018
Chemistry 2320 (Organic Chemistry II, 130 students)	Fall 2017
Chemistry 2310 (Organic Chemistry I, 85 students)	Summer 2017
Graduate Organometallic Chemistry Teaching Assistant (Utah)	2010 – 2012
Organic Chemistry Lab Assistant (Utah)	2009 – 2010

## Service

Co-Chair, University of Utah Chemistry Department Safety Committee	2021-current
Member, University of Utah Public Outreach Committee	2021-current
Member, University of Utah Undergraduate Curriculum Committee	2021-current

Member, University of Utah Peer-Teaching Mentoring Committee	2020-current
Member, University of Utah Chemistry Department Safety Committee	2019-2021
Manuscript Reviewer	2015-current
<i>Journal of the American Chemical Society, Organic Letters,</i> <i>Journal of Organic Chemistry</i>	
South Hills Middle School Riverton, UT	2019
<i>Performed chemistry demonstrations for eighth grade classes (~200 students)</i>	
University of Utah Salt Lake City, UT	2019
<i>Performed chemistry demonstrations for the Boys and Girls Club of America</i>	
The Leonardo Museum of Creativity and Innovation Salt Lake City, UT	2017
<i>Performed chemistry demonstrations for the NSF Center for Selective C–H Functionalization</i>	
Rose Creek Elementary Riverton, UT	2017
<i>Performed chemistry demonstrations for fifth grade classes</i>	
Backman Elementary Salt Lake City, UT	2016
<i>Performed chemistry demonstrations and led a discussion about pursuing a career in science</i>	
Butterfield Canyon Elementary Herriman, UT	2016
<i>Performed chemistry demonstrations for fourth grade classes</i>	
Bay Area Science Festival San Francisco, CA	2014 – 2015
<i>Performed chemistry demonstrations for the NSF Center for Selective C–H Functionalization at AT&amp;T Stadium</i>	
Rosamond Elementary Riverton, UT	2012 – 2014
<i>Performed chemistry demonstrations for second and third grade classes</i>	

### Peer-Reviewed Publications

12. "Palladium-Catalyzed Enantioselective Alkenylation of Alkenylbenzene Derivatives." Chen, Z.-M.; Liu, J.; Guo, J.-Y.; Loch, M.; **DeLuca, R. J.**; Sigman, M. S.\* *Chem. Sci.* **2019**, 10, 7246.
11. "C–H Hydroxylation in Paralytic Shellfish Toxin Biosynthesis." Lukowski, A. L.; Hinze, M. E.; **DeLuca, R. J.**; Du Bois, J.; Hall, S.; Narayan, A. R. H. *J. Am. Chem. Soc.* **2018**, 140, 11863.
10. "Rhodium-Catalyzed C–H Amination: A Case Study of Selectivity in C–H Functionalization Reactions." Mack, J.; Bedell, T.; **DeLuca, R. J.**; Hone, G.; Roizen, J.; Cox, C.; Sorensen, E.; Du Bois, J. *J. Chem. Educ.* **2018**, 95, 2243.
9. "Palladium-Catalyzed Enantioselective Redox-Relay Heck Alkynylation of Alkenols to Access Propargylic Stereocenters." Chen, Z.-M.; Nervig, C. S.; **DeLuca, R. J.**; Sigman, M. S. *Angew. Chem. Int. Ed.* **2017**, 56, 1.

8. "Palladium-Catalyzed Enantioselective Heck Alkenylation of Trisubstituted Allylic Alkenols: A Redox-Relay Strategy to Construct Vicinal Stereocenters." Zhang, C.; Tutkowski, B.; **DeLuca, R. J.**; Joyce, L. A.; Wiest, O.; Sigman, M. S. *Chem. Sci.* **2017**, 8, 2277.
7. "Analyzing Site Selectivity in Rh<sub>2</sub>(esp)<sub>2</sub>-Catalyzed Intermolecular C-H Amination Reactions." Bess, E. N.; **DeLuca, R. J.**; Tindall, D. J.; Oderinde, M. S.; Roizen, J. L.; Du Bois, J.; Sigman, M. S. *J. Am. Chem. Soc.* **2014** 136, 5783.
6. "The Strategic Generation and Interception of Palladium-Hydrides for Use in Alkene Functionalization Reactions." **DeLuca, R. J.**; Stokes, B. J.; Sigman, M. S. *Pure Appl. Chem.* **2014**, 86, 395.
5. "Wacker-Type Oxidation of Internal Alkenes using Pd(Quinox) and TBHP." **DeLuca, R. J.**; Edwards, J. L.; Steffens, L. D.; Michel, B. W.; Qiao, X.; Zhu, C.; Cook, S. P.; Sigman, M. S. *J. Org. Chem.* **2013**, 78, 1682.
4. "The Palladium-Catalyzed Anti-Markovnikov Hydroalkylation of Allylic Alcohol Derivatives." **DeLuca, R. J.**; Sigman, M. S. *Org. Lett.* **2012**, 15, 92.
3. "Anti-Markovnikov Hydroalkylation of Allylic Amine Derivatives via a Palladium-Catalyzed Reductive Cross-Coupling Reaction." **DeLuca, R. J.**; Sigman, M. S. *J. Am. Chem. Soc.* **2011**, 133, 11454.
2. "α-Arylation of Esters Catalyzed by the Pd(I) Dimer [P(t-Bu)<sub>3</sub>Pd(μ-Br)]<sub>2</sub>." Huang, D. S.; **DeLuca, R. J.**; Hartwig, J. F. *Org. Synth.* **2011**, 88, 4.
1. "Studying Conductive Polymer Coating (BAM – PPV) Using Positron Annihilation Spectroscopy." Zhang, R.; Johnson, P. M.; **DeLuca, R. J.**; Alger, T. D.; Xu, J.; Suzuki, R.; Ohdaira, T.; Jean, Y. C. *Phys. Stat. Sol (c)* **2007**, 4, 3789.