

J. Patrick Lutz

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EDUCATION AND PROFESSIONAL APPOINTMENTS

- Visiting Assistant Professor, Chemistry Department, Oberlin College** 2020–present
- Postdoctoral Scholar and Lecturer I, University of Michigan** 2017–2020
Advisor: Prof. Anne J. McNeil
- Ph.D. in Organic Chemistry, Princeton University** 09/2017
M.A. in Organic Chemistry, Princeton University 04/2014
Advisor: Prof. Abigail G. Doyle
Ni-Catalyzed Cross Coupling with Iminium Ions
- ACS-Certified B.S. in Chemistry, *summa cum laude*, Hope College** 05/2012
Advisor: Prof. Jeffrey B. Johnson
Mechanistic Investigations of C–C Activation in the Rh-Catalyzed Carboacylation of Quinoliny Ketones

RESEARCH EXPERIENCE

- Visiting Research Scholar, Chemistry Department, University of Michigan** Summer 2021
- Postdoctoral Scholar, Chemistry Department, University of Michigan** 2017–2020
- Designed and synthesized new recyclable polymers
 - Authored a review on the applications of catalyst-transfer polymerization
- Graduate Research Assistant, Chemistry Department, Princeton University** 2012–2017
- Developed enantioselective, Ni-catalyzed cross couplings of arylzinc reagents with pyridinium ions
 - Developed a Ni-catalyzed, three-component, reductive cross coupling for synthesizing benzhydryl amines
- Undergraduate Research Assistant, Chemistry Department, Hope College** 2010–2012
- Studied the mechanism of Rh-catalyzed C–C activation in quinoliny ketones
 - Elucidated reaction scope for the Ni-catalyzed addition of diorganozinc reagents to phthalimides
- Undergraduate Research Assistant, Chemistry Department, Hope College** Summer 2009
- Studied inhibitory effects of lead on erythropoietic transcription factor GATA-1 with Prof. Michael J. Pikaart

TEACHING EXPERIENCE

- Visiting Assistant Professor, Chemistry Department, Oberlin College** Fall 2020–present
- Instructor for organic chemistry, inorganic chemistry, and advanced synthesis lecture/lab courses and bioorganic chemistry lab course
 - Delivered lecture courses virtually during the 2020–2021 academic year in response to COVID-19
 - Introduced two polymer experiments to the organic lab curriculum
- Instructor for Organic Chemistry I and II Lab, University of Michigan** Fall 2019, Spring 2018
- Delivered weekly lectures to ~300 students as instructor of record
 - Oversaw lab sections taught by 11–15 TAs
- Mentor for Postdoctoral Short Course on Teaching and Learning in STEM, U. of Michigan** Winter 2019
- Graded and provided written feedback on course activities
 - Facilitated practice teaching demonstrations for course participants

McGraw Graduate Teaching Fellow, Princeton University	2015–2017
<ul style="list-style-type: none">• Led teaching orientation for first-time TAs• Acted as a peer observer for discussion sections/labs	
Course Advisor for Organic Chemistry I and II, Princeton University	2015–2016
<ul style="list-style-type: none">• Assisted in redesigning discussion sections as small group problem-solving sessions• Wrote problem sets for use in these discussion sections	
Review Session Leader, McGraw Center for Teaching and Learning, Princeton University	Spring 2015
<ul style="list-style-type: none">• Designed and led review sessions for sophomore organic chemistry course	
Assistant-in-Instruction for Organic Chemistry I and II, Princeton University	2013–2014
<ul style="list-style-type: none">• Planned and led discussion sections• Wrote problem sets and exam questions	
Teaching Assistant for Organic Chemistry I and II Laboratory, Hope College	2011–2012
Peer Tutor for Organic Chemistry I and II, Hope College	2010–2012

PUBLICATIONS

1. **Lutz, J. P.**; Davydovich, O.; Hannigan, M. D.; Moore, J. S.; Zimmerman, P. M.; McNeil, A. J. "Functionalized and Degradable Polyphthalaldehyde Derivatives." *J. Am. Chem. Soc.* **2019**, *141*, 14544–14548.
2. **Lutz, J. P.**; Hannigan, M. D.; McNeil, A. J. "Polymers Synthesized via Catalyst-Transfer Polymerization and Their Applications." *Coord. Chem. Rev.* **2018**, *376*, 225–247.
3. Heinz, C.*; **Lutz, J. P.***; Simmons, E. M.; Miller, M. M.; Ewing, W. R.; Doyle, A. G. "Ni-Catalyzed Carbon–Carbon Bond-Forming Reductive Amination." *J. Am. Chem. Soc.* **2018**, *140*, 2292–2300. *Equal contribution.
4. **Lutz, J. P.**; Chau, S. T.; Doyle, A. G. "Nickel-Catalyzed Enantioselective Arylation of Pyridine." *Chem. Sci.* **2016**, *7*, 4105–4109.
5. Dennis, J. M.; Calyore, C. M.; Simmons, J. M.; **Lutz, J. P.**; Gair, J. J.; Johnson, J. B. "Nickel-Catalyzed Addition of Diorganozinc Reagents to Phthalimides: The Selective Formation of Gamma-Hydroxylactams." *Synlett* **2013**, *24*, 2567–2570.
6. Chau, S. T.; **Lutz, J. P.**; Wu, K.; Doyle, A. G. "Nickel-Catalyzed Enantioselective Arylation of Pyridinium Ions: Harnessing an Iminium Ion Activation Mode." *Angew. Chem. Int. Ed.* **2013**, *52*, 9153–9156.
7. **Lutz, J. P.**; Rathbun, C. M.; Stevenson, S. S.; Powell, B. M.; Boman, T. S.; Baxter, C. E.; Zona, J. M.; Johnson, J. B. "The Rate Limiting Step of the Rh-Catalyzed Carboacylation of Alkenes: C–C Bond Activation or Migratory Insertion?" *J. Am. Chem. Soc.* **2012**, *134*, 715–722.

PRESENTATIONS

1. **Lutz, J. P.**; McNeil, A. J. "Designing Functional and Degradable Polyphthalaldehyde Derivatives." 46th National Organic Symposium, Bloomington, IN, June 26, 2019 (poster).
2. **Lutz, J. P.**; Davydovich, O.; Moore, J. S.; McNeil, A. J. "Designing Functional and Degradable Polyphthalaldehyde Derivatives." 2nd Detroit Polymer Symposium, Detroit, MI, November 30, 2018 (poster).
3. **Lutz, J. P.**; Heinz, C. H.; Doyle, A. G. "Nickel-Catalyzed Reductive Coupling of Iminium Ions." 8th Chicago Organic Symposium, Chicago, IL, September 30, 2017 (poster).

4. **Lutz, J. P.;** Chau, S. T.; Doyle, A. G. "Ni-Catalyzed, Enantioselective Arylation of Pyridinium Ions." 252nd ACS National Meeting, Philadelphia, PA, August 21, 2016 (oral).
5. **Lutz, J. P.;** Doyle, A. G. "Ni-Catalyzed, Enantioselective Arylation of Pyridinium Ions." ACS Division of Organic Chemistry 2016 Graduate Research Symposium, Bryn Mawr, PA, July 28, 2016 (oral).
6. **Lutz, J. P.;** Chau, S. T.; Doyle, A. G. "Enantioselective Arylation of Pyridinium Ions." 44th National Organic Symposium, College Park, MD, June 28, 2015 (poster).
7. **Lutz, J. P.;** Rathbun, C. M.; Johnson, J. B. "Mechanistic Investigations of Alkene Carboacylation via C–C Bond Activation in Quinoliny Ketones." 243rd ACS National Meeting, San Diego, CA, March 28, 2012 (poster).
8. **Lutz, J. P.;** Johnson, J. B. "Mechanistic Studies of C–C Bond Activation in Quinoliny Ketones: A Little Healthy Competition." Regional Chemistry REU Symposium, Holland, MI, July 30, 2010 (poster).
9. Damon, C. C.; **Lutz, J. P.;** Pikaart, M. J. "Inhibitory Effects of Lead on Erythropoietic Transcription Factor GATA-1." Summer Undergraduate Research Regional Symposium, Notre Dame, IN, July 31, 2009 (poster).

MENTORING EXPERIENCE

Maiko Lunn, first-year graduate student at Michigan	Fall 2019
Ricky Williams, high school junior	Summer 2016
<ul style="list-style-type: none">• Currently an undergraduate at Harvard (electrical engineering)	
Jake Essman, undergraduate student at Princeton	2015–2017
<ul style="list-style-type: none">• Currently a graduate student at Harvard (chemistry)	

AWARDS, HONORS, AND FUNDING

Bristol-Myers Squibb Fellow	Fall 2016
<ul style="list-style-type: none">• Research project on reductive cross coupling of iminium ions was selected as being of interest to BMS• Presented monthly research updates to BMS scientists• Performed high-throughput experimentation at BMS	
Arthur A. Patchett '51 Graduate Fellowship in Chemistry (Princeton University)	Spring 2016
<ul style="list-style-type: none">• Awarded annually to an outstanding senior graduate student in organic chemistry	
Hubert Alyea '24 Teaching Award (Princeton University)	Spring 2014
<ul style="list-style-type: none">• Awarded annually to the most outstanding teaching assistant in the chemistry department	
NSF Graduate Research Fellowship	Spring 2013
<ul style="list-style-type: none">• "Directed Enantioselective Negishi Cross Coupling of Pyridinium Salts"	
Dr. Almon T. Godfrey Prize in Chemistry (Hope College)	Spring 2012
<ul style="list-style-type: none">• Awarded annually to the top senior chemistry major	
NSF Graduate Research Fellowship Honorable Mention	Spring 2012
<ul style="list-style-type: none">• "Rh-Catalyzed C–C Activation of Quinoliny Imines: Towards Intermolecular Carboacylation"	
Phi Beta Kappa	Spring 2012
Sigma Xi Research Award	Spring 2012

ACS Division of Inorganic Chemistry Undergraduate Award in Inorganic Chemistry	Spring 2011
• Awarded annually to the top student in inorganic chemistry at Hope College	
Organic Chemistry Book Award (Hope College)	Spring 2010
• Awarded annually to the top student in organic chemistry	
Dean's Summer Research Award (Hope College)	Spring 2010
General Chemistry Book Award (Hope College)	Spring 2009
• Awarded annually to the top student in general chemistry	
National Merit Scholarship	2008–2012

ACTIVITIES AND AFFILIATIONS

Skype a Scientist participant	2020–present
• “Matched” with four classrooms to date to describe career and answer student questions	
Volunteer for chemistry outreach activities at Lenawee County Fair	2019
• Organized and led hands-on chemistry activities for 4H Club youth	
Volunteer for F.E.M.M.E.S. Capstone, University of Michigan	2018–2019
• Led hands-on polymer activities for 4 th –6 th grade girls at biannual event	
McGraw Graduate Teaching Award Selection Committee, Princeton University	2017
Volunteer for National Chemistry Week activities, Princeton University	2015–2016
• Led hands-on chemistry activities for elementary and middle school-aged students at annual event	
Volunteer for Super Science Saturday, NJ State Museum, Trenton, NJ	2013–2016
• Led hands-on chemistry activities for elementary and middle school-aged students at annual event	
Chemistry Graduate Student Organization member, Princeton University	2012–2017
American Chemical Society member, Organic Division	2012–present
Chemistry Club member, Hope College	2008–2012

List of Courses Taught

Oberlin College

- Spring 2022: Inorganic Chemistry lecture and lab
- Fall 2021: Advanced Synthesis lecture and lab; Organic Chemistry lab
- Spring 2021: Organic Chemistry lecture and lab; Bioorganic Chemistry lab
- Fall 2020: Organic Chemistry lecture and lab

University of Michigan

- Fall 2019: Organic Chemistry II lab
- Spring 2018: Organic Chemistry I lab

Princeton University (as teaching assistant)

- Spring 2014: Organic Chemistry II lecture
- Fall 2013: Organic Chemistry I lecture

REFERENCES

Academic references are available upon request.