

Department of Chemistry • Purdue University • 560 Oval Drive. W. Lafayette, IN 0239

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Gabriel J. Lovinger

PROFESSIONAL & EDUCATIONAL EXPERIENCE

Purdue University, Asst. Professor	08/12/24–Present
Harvard, NIH (F32) Postdoctoral Researcher <i>Advisor: Professor Eric N. Jacobsen</i>	2020–2024
Boston College, Ph.D. in Organic Chemistry Ph.D December, 2019, Thesis Title: “Enantioselective Multi-Component Reactions: Conjunctive Coupling and Related Processes” <i>Advisor: Professor James P. Morken</i>	2014–2019
Boston College, Research Associate <i>Advisor: Professor Shih-Yuan Liu</i>	2013–2014
Universidad de País Vasco, San Sebastián, Spain, Student Researcher Trans-Atlantic Science Student Exchange Program (TASSEP) <i>Advisor: Professor Shih-Yuan Liu</i>	2010–2011
University of Oregon/Robert D. Clark Honors College, B.A. in Chemistry Minor in Mathematics, June 2013, Thesis Title: “Computational Design and Synthesis of Boron-Nitrogen Containing Heterocycles: Late-Stage Functionalization and Tunability in 1,2-Azaborines.” <i>Advisor: Professor Shih-Yuan Liu</i>	2008–2013

AWARDS & HONORS

MIT Future Faculty Symposium Invitation	2022
Reaxys PhD Prize Finalist	2020
Ereztech Young Organometallic Scientists Award	2019
Ruth L. Kirschstein National Research Service Award (NIH F32 GM136042)	2019
Alfred R. Bader Award for Student Innovation in Synthetic Organic Chemistry Finalist, presented in Darmstadt, Germany	2018
LaMattina Family Graduate Fellowship in Chemical Synthesis, Boston College	2017–2018
The Donald J. White Teaching Excellence Award, Boston College	2016
Organic Chemistry Achievement Award, University of Oregon	2013
Clark Honors College Thesis Pass with Distinction, Highest Honors	2013
Highest Departmental Honors in Chemistry, University of Oregon	2013
Clarence and Lucille Dunbar Scholarship, University of Oregon	2012–2013
Undergraduate Research Fellowship, University of Oregon	2012–2013

Centurion Award, University of Oregon	2012–2013
Beckman Research Scholarship Finalist, University of Oregon	2012–2013
Member of the National McNair Scholars Program, University of Oregon	2011–2013
Member of The Mortar Board National College Senior Honors Society	2011–2013
Trans-Atlantic Science Student Exchange Program (TASSEP)	2010–2011
National Science & Mathematics Access to Retain Talent Grant	2009–2010
Black belt in Shutokan Karate	2009
Dean's Scholar Grant, University of Oregon	2008–2011
Dean's Access Scholar Grant, University of Oregon	2008–2012
Oregon Opportunity Grant, University of Oregon	2008–2011
Pathway Oregon Scholarship, University of Oregon	2008–2013

NATIONAL SERVICE

Reviewer for Journal of the American Chemical Society (JACS)	2024-present
Reviewer for Nature Communications (Nat. Chem.)	2024-present
Reviewer for Journal of Organic Chemistry (JOC)	2025-present

UNIVERSITY SERVICE

Purdue Institute of Drug Discovery	2024-present
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DEPARTMENTAL SERVICE

Graduate Admissions Committee	2024-present
ad hoc Departmental committee to promote Chemistry graduate student participation in external internship	2024-present

PEER-REVIEWED PUBLICATIONS (H-Index = 11; Average citation/paper > 91; citation numbers from ResearchGate)

Graduate and Postdoctoral Work

1. **Lovinger, G. J.**; Sak, M.; Eric N. Jacobsen. *Nature*, **2024**, 632, 1052 “Catalysis of an S_N2 Pathway by Geometric Preorganization” (citations 3)
2. Xu, Ningxin; Kong, Ziyin; Wang, J.; **Lovinger, G. J.**; Morken, J. P. *J. Am. Chem. Soc.* **2022**, 144, 39, 17815. “Copper-Catalyzed Coupling of Alkyl Vicinal Bis(boronic Esters) to an Array of Electrophiles” (citations 35)
3. **Lovinger, G. J.** *Encyclopedia of Reagents for Organic Synthesis* **2022** DOI: 10.1002/047084289X.rn02480 “1,3,2-Dioxaborolane, 2-ethenyl-4,4,5,5-tetramethyl (vinylboronic acid pinacol ester)” (*invited contribution*)
4. Zhang, Chenlong, Z.; Hu, W.; **Lovinger, G. J.**; Jing, J.; Chen, J.; Morken, J. P. *J. Am. Chem. Soc.* **2021**, 143, 14189. “Enantioenriched α -Boryl Alkylzinc Reagents by Ni-Catalyzed Carbozincation of Vinylboronic Esters” (citations 27)

- Lovinger, G. J.**; Morken, J. P. *Eur. J. Org. Chem.* **2020**, 2362. “Recent Advances in Radical Addition to Alkenylboron Compounds” (*Invited Contribution, citations: 74*)
- Chierchia, M. P.; **Lovinger, G. J.**; Xu, P.; Morken, J. P. *Angew. Chem. Int. Ed.* **2019**, 58, 1. “Enantioselective Radical Addition/Cross-Coupling of Organozinc Reagents, Alkyl Iodides, and Alkenylboron Reagents” (*citations: 115*)
- Aparece M. D.; Gao C.; **Lovinger G. J.**; Morken, J. P. *Angew. Chem. Int. Ed.* **2019**, 58, 592. “Vinylidenation of Organoboronic Esters Enabled by a Pd-Catalyzed Metallate Shift” (*citations 31*)
- Myhill J. A.; Zhang, L.; **Lovinger, G. J.**; Morken J. P. *Angew. Chem. Int. Ed.* **2018**, 57, 12799. “Enantioselective Construction of Tertiary Boronic Esters by Conjunctive Cross-Coupling” (*citations: 57*)
- Lovinger, G. J.**; Morken, J. P. *J. Am. Chem. Soc.* **2017**, 139, 17293. “Ni-Catalyzed Enantioselective Conjunctive Coupling with C(sp³) Electrophiles: A Radical-Ionic Mechanistic Dichotomy” (*citations: 116*)
- Lovinger, G. J.**; Aparece, M. D.; Morken, J. P. *J. Am. Chem. Soc.* **2017**, 139, 3153. “Pd-Catalyzed Conjunctive Cross-Coupling Between Grignard-Derived Boron "Ate" Complexes and C(sp²) Halides or Triflates: NaOTf as a Grignard Activator and Halide Scavenger” (*citations: 124*)
 - Highlighted by:
 - Solvias “Asymmetric conjunct cross-coupling using Mandyphos”
 - Organic Chemistry.org <https://www.organic-chemistry.org/abstracts/lit5/767.shtm>
 - Chem-Station.org “Conjunctive Cross-Coupling”
- Zhang, L.; **Lovinger, G. J.**; Edelstein, E. K.; Szymaniak, A. A.; Chierchia, M. P.; Morken, J. P. *Science* **2016**, 351, 70. “Catalytic Conjunctive Cross-Coupling Enabled by Metal-Induced Metallate Rearrangement” (*citations: 283*)
 - Highlighted by:
 - Science Magazine “When two reactions become one”
 - C&EN “Chemists Merge Two Fundamental Reactions To Achieve A New Cross-Coupling Scheme”
 - SynFacts “Conjunctive Cross-Coupling”
 - Science2.0 “Transition Metal Catalyst Prompts 'conjunctive' Cross-coupling Reaction”
- Ishibashi, J. S. A.; Marshall, J. L.; Maziere, A.; **Lovinger, G. J.**; B.; Zakharov, L. N.; Dargelos, A.; Graciaa, A.; Chrostowska, A.; Liu, S.-Y. *J. Am. Chem. Soc.* **2014**, 136, 15414. “Two BN Isosteres of Anthracene: Synthesis and Characterization” (*citations: 139*)

NON PEER-REVIEWED PUBLICATIONS

- Lovinger, G. J.** The Future of Organometallic Chemistry. Ereztech Young Organometallic Scientists Award Essay, <https://ereztech.com/award2019-gabriel-j-lovinger/>
- Lovinger, G. J.** Enantioselective Multi-Component Reactions: Conjunctive Coupling and Related Processes. Ph.D. Dissertation, Boston College, Morrissey College of Arts and Sciences, MA, November 2019.
- Lovinger, G. J.** Computational Design and Synthesis of Boron-Nitrogen Containing Heterocycles: Late-Stage Functionalization and Tunability in 1,2-Azaborines. B.A. Thesis, University of Oregon, Robert D. Honors College, OR, June 2013.

INVITED SEMINARS

- 4TH Annual Applied Biocatalysis & Enzyme Engineering Summit, December 11, 2024.
- Purdue Institute of Drug Discovery (PIDD) 9th Annual Symposium, September 20, 2024.
- Lovinger, G. J.**; Sak, M. H.; Jacobsen, E. N. “Catalytic Ion Pair Reorganization: Unlocking Phosphonium Dealkylation to Access P-chiral Compounds”. Presented at the Organic Reactions and Process Gordon Research Conference, July, 18, 2023

- Lovinger, G. J.;** Sak, M. H.; Jacobsen, E. N. "Catalytic Ion Pair Reorganization: Unlocking Phosphonium Dealkylation to Access P-chiral Compounds". Presented at Harvard ChemTalk, 2023.

CONFERENCE PRESENTATIONS

- Lovinger, G. J.;** Sak, M. H.; Jacobsen, E. N. "Catalytic Enantioselective Michaelis-Arbuzov Reaction Enables Access to Stereogenic-at-P(V) Compounds". Presented at the Physical Organic Gordon Research Seminar & Conference, 2023 (poster presentation)
- Lovinger, G. J.;** Sak, M. H.; Jacobsen, E. N. "Stabilizing Reactive Intermediates in Enantioselective Catalysis to Access Diversifiable Products". Presented at the MIT Future Faculty Symposium, 2022 (oral presentation)
- Lovinger, G. J.;** Morken, J. P. "Conjunctive Cross-Coupling: Development and Exploration of New Reactions" Presented at the Alfred R. Bader Student Innovation in Synthetic Organic Chemistry Symposium, Darmstadt, Germany 2018, (oral presentation).
- Lovinger, G. J.;** Myhill, J. A.; Chierchia, M. P.; Xu, P.; Aparece, M. D.; Zhang, L.; Edelstein, E. K.; Szymaniak, A. A.; Morken, J. P. "Advances in Catalytic Conjunctive Cross-Coupling Reactions". Presented at the Merck Symposium at Boston College, 2018 (poster presentation).
- Lovinger, G. J.;** Myhill, J. A.; Chierchia, M. P.; Xu, P.; Aparece, M. D.; Zhang, L.; Edelstein, E. K.; Szymaniak, A. A.; Morken, J. P. "Advances in Catalytic Conjunctive Cross-Coupling Reactions". Presented at the Boron in the Americas XVI Conference, 2018 (poster presentation).
- Lovinger, G. J.;** Morken, J. P. "Advances in Catalytic Conjunctive Cross-Coupling Reactions". Presented at the Boston Symposium on Organic and Bioorganic Chemistry 2017 (oral presentation).
- Lovinger, G. J.;** Aparece, M. D.; Morken, J. P. "Advances in Catalytic Conjunctive Cross-Coupling Reactions". Presented at the Merck Photoredox Catalysis in Organic Synthesis: Short Course 2017. Merck Research Laboratories, 33 Avenue Louis Pasteur, Boston, MA 02115 (poster presentation).
- Lovinger, G. J.;** Aparece, M. D.; Morken, J. P. "Pd-Catalyzed Conjunctive Cross-Coupling Between Grignard-Derived Boron "Ate" Complexes and C(sp²) Halides or Triflates: NaOTf as a Grignard Activator and Halide Scavenger". Presented at the Boston College Graduate Student Research Symposium 2016 (poster presentation).
- Lovinger, G. J.;** Zhang, L.; Edelstein, E. K.; Szymaniak, A. A.; Chierchia, M. P.; Morken, J. P. "Catalytic Conjunctive Cross-Coupling Enabled by Metal-Induced Metallate Rearrangement". Presented at the Boston College Graduate Student Research Symposium 2015 (poster presentation).
- Lovinger, G. J.;** Zhang, L.; Edelstein, E. K.; Szymaniak, A. A.; Chierchia, M. P.; Morken, J. P. "Catalytic Conjunctive Cross-Coupling Enabled by Metal-Induced Metallate Rearrangement". Presented at the Boston College Graduate Student Research Symposium 2015 (poster presentation).
- Lovinger, G. J.;** Marshall, J. L.; Padmaperuma, A. B.; Zakharov, L. N.; Liu, S.-Y. "Computational Design and Synthesis of 1,2-Azaborine-Containing Ambipolar Compounds". Presented at the 245th ACS National Meeting on Chemistry and Food, New Orleans, USA, 2013 (poster presentation).
- Lovinger, G. J.;** Marshall, J. L.; Padmaperuma, A. B.; Zakharov, L. N.; Liu, S.-Y. "Computational Design and Synthesis of 1,2-Azaborine-Containing Ambipolar Compounds". Presented at McNair Scholars Symposium, Eugene Oregon, U.S.A, 2013 (oral presentation).

TEACHING TRAINING & EXPERIENCE

Instructor, Purdue University

01/14/2025

- CHEM 668 Graduate Physical Organic Chemistry

2023

April 25-27, 2023

2014–2016

Teaching Associate (Head of content development), Harvard

- CHEM 17 Introduction to Organic Chemistry

Harvard Inclusive Teaching Institute Symposium

Graduate Teaching Assistant, Boston College

- CHEM 1122 Honors Organic Chemistry Lecture
- CHEM 1120 Honors Modern Chemistry Lab II
- CHEM 2243 Honors Modern Chemistry Lab I
- CHEM 2233 Organic Chemistry Laboratory I

MENTORING (1 Postdoc, 12 Graduate, 6 Undergraduate)

Asst. Professor Mentor, Purdue University 2024-present

Graduate students

- Sourav Banerjee, Ph.D, 2024-present
- Amit Chaubey, Ph.D, 2024-present
- Yukta Singh, Ph.D, 2024-present
- Chaithanya Konath, Ph.D, 2024-present
- Kelton Radefeld, Ph.D, 2024-present
- Fox Bratcher, Ph.D, 2024-present

Undergraduate students

- Ryan Ma, BS, 2024-present
- Annabelle McGloin, BS, 2024-present
- JingKai Wang, BS, 2024-present

Postdoctoral Mentor, Jacobsen Laboratory, Harvard University 2021–present

Graduate students

- Marcus Sak, 3rd year Ph.D student
- John Rezk, 2st year Ph.D student
- Wilmer Flores, Rotating student

Undergraduate Students

- Hayato Shiotsu, M.S. 2022; Gilead, Research Scientist

Graduate Mentor, Morken Laboratory, Boston College 2016–2020

Graduate students

- Mark Aparece, Ph.D 2020, Northeastern University, Assistant Teaching Professor 2020; Northwestern University, Assistant Professor of Instruction 2022-present
- Paul Koo, M.S. 2019, Gilead; Research Scientist
- Chenlong Zhang, Ph.D 2021; Vertex Pharmaceuticals, Research Scientist

Undergraduate students

- Maximilian Palkowitz, B.S. 2018, Scripps, Phil Baran research group, Ph.D 2022; Bristol Myers Squibb, Research Scientist 2022-present
- Andrea Grote, B.S. 2018, UCLA Health, Resident, M.D

MENTORING TRAINING

Harvard Science Education Office “Science Mentoring Workshop Intensives 2020–2021,” 13.5 hours	2020–2021
Harvard University NIH-compliant Responsible Conduct in Research (RCR) certificate course, 8 hours	2020
Boston College NIH-compliant certificate seminar in ethical and Responsible Conduct in Research (RCR), 12 hours	2018

GRADUATE AND POSTDOCTORAL SERVICE

Harvard Future Leaders Postdoctoral Panel	08/30/2023
Harvard Postdoctoral Panel for Underrepresented Students	03/09/2023
National Collegiate Research Conference poster judge, Harvard University	01/21/2023
Blue Sky Undergraduate Research Fair, Harvard University	11/24/2021
Panelist, Research and Scholarship Integrity Program (RSI), Boston College	2018–2019

REFERENCES

Professor Eric N. Jacobsen, Harvard University Department of Chemistry & Biology, 12 Oxford St. Cambridge, MA 02138, USA; e-mail: jacobsen@chemistry.harvard.edu; tel: (1) 617 496-3688

Professor James P. Morken, Boston College, Department of Chemistry, Merkert Chemistry Center, Chestnut Hill, MA 02467, USA; e-mail: morken@bc.edu; tel: (1) 617-552-6290

Professor Amir H. Hoveyda, Boston College, Department of Chemistry, Merkert Chemistry Center, Chestnut Hill, MA 02467, USA; e-mail: amir.hoveyda@bc.edu; tel: (1) 617-552-3618

Professor X. Peter Zhang, Boston College, Department of Chemistry, Merkert Chemistry Center, Chestnut Hill, MA 02467, USA; e-mail: peter.zhang@bc.edu; tel: (1) 617-552-1483

Professor Shih-Yuan Liu, Boston College, Department of Chemistry, Merkert Chemistry Center, Chestnut Hill, MA 02467, USA; e-mail: shihyuan.liu@bc.edu; tel: (1) 617-552-8543