Rory Waterman

Innovation Hall
82 University Place
Burlington, VT 05405

Telephone: (802) 656-0278
Fax: (802) 656-8705
E-Mail: rory.waterman@uvm.edu

www.uvm.edu/~waterman

Appointments

2022–2024	INTERIM DIRECTOR, MATERIALS SCIENCE PROGRAM University of Vermont Gradute College, Burlington, VT
2022–2023	VISITING PROFESSOR, INSTITUTE FOR CHEMICAL RESEARCH Kyoto University, Kyoto, Japan
2018–2019	INTERIM CHAIR, DEPARTMENT OF PHYSICS University of Vermont, Burlington, VT
2016–2022	ASSOCIATE DEAN, COLLEGE OF ARTS AND SCIENCES University of Vermont, Burlington, VT
2016–present	PROFESSOR OF CHEMISTRY University of Vermont, Burlington, VT
2013–2014	VISITING PROFESSOR, INSTITUTE OF INORGANIC CHEMISTRY University of Regensburg, Regensburg, Germany
2012–2016	ASSOCIATE PROFESSOR OF CHEMISTRY University of Vermont, Burlington, VT
2008–present	MATERIALS SCIENCE PROGRAM University of Vermont, Burlington, VT
2006–2012	ASSISTANT PROFESSOR OF CHEMISTRY University of Vermont, Burlington, VT
2004–2006	MILLER RESEARCH FELLOW University of California, Berkeley, CA

Education

Ph. D., June 2004, and M. S., August 2000, The University of Chicago, Chicago, Illinois
B. S. cum laude in chemistry, May 1999, University of Rochester, Rochester, New York

Selected honors and Awards

IMPACT Award, Research Corporation for Science Advancement, 2024
University Scholar (UVM), 2023
Sigma-Aldrich Lecturer, University of Tokyo, 2023
Japan Society for the Promotion of Science Fellowship, 2022–2023
Fellow, American Association for the Advancement of Science, 2020
Fellow, Gund Institute for the Environment, 2020
Elected member, Vermont Academy of Sciences and Engineering, 2019
Fellow, American Chemical Society, 2019
Leadership Enrichment And Development (LEAD) Award, 2017
Cottrell Scholar Lecturer, 2017
Fellow, American Institute of Chemists, 2016
Fellow, Royal Society of Chemistry, 2015
Alexander von Humboldt Research Fellowship for Experienced Researchers, 2013
UVM Faculty Sustainability Fellow, 2010
Research Corporation Cottrell Scholar Award, 2009

Alfred P. Sloan Foundation Research Fellowship, 2009
Nominee, UVM Kroepsch-Maurice Award, 2009 & 2014
U.S. National Science Foundation CAREER Award, 2008
Miller Institute for Basic Research in Science Research Fellowship, 2004–2007
>140 invited lectures (2007–present)

Student/trainee participation summary

- 11 current undergraduate researchers
- Three current Ph. D. candidates
- 41 former high school student researchers
  - Eight high school co-authors on seven publications
  - 100% of eligible former high school researchers have gone to college, all initially in STEM majors
- 58 former undergraduate researchers
  - 41 undergraduate co-authors on 27 publications
- One postbaccalaureate researcher supervised
- Six M.S. degrees earned
- 13 Ph. D. degrees earned
- Four postdoctoral researchers supervised

Selected professional activities

Vermont Academy of Science and Engineering Award, Board of Directors 2024–2029
Treasurer, ACS Division of Inorganic Chemistry 2024–2027
ACS National Award Selection Committee 2019–2026
Chair, Green Mountain Local Section, American Chemical Society 2018–2020
Co-guest Editor, *Journal of Organic Chemistry* (2020), *European Journal of Inorganic Chemistry* (2023), and *Chemistry – A European Journal* (2023).
Guest Editor, *Dalton Transactions* (2016) and *Inorganica Chimia Acta* (2014)
Co-developer, CSC (now ACS) New Faculty Workshop in Chemistry 2012–present
Barry M. Goldwater Scholarship Faculty Representative 2011–present
Director, Noyce Summer Internship Program (2009–2015)
Director, Project SEED at UVM 2007–present
Director, Army Educational Outreach Program Apprenticeship site at UVM 2017–present

Selected recent publications (>100 peer-reviewed papers; 8 book chapters; 6 editorials, etc.)
[§] invited manuscript

[§]Waterman, R. Transitioning to Green Discovery-Based Catalysis *Chem. Eur. J*. **2025**, *31*, e202404602.

Finfer, E. J.; Waterman, R. Neoteric Solvents for Exploratory Catalysis: Hydrophosphination Catalysis with CHEM21 Solvents *Green Chem.* **2025**, *27*, 432–437.

Waterman, R. Dehydrocoupling: A General Route to Bonds Between P-Block Elements *Chem. Educ.* **2024**, *29,* 141‑145.

Bushey, C. E.; Javier-Jiménez, D. R.; Reuter, M. B.; Waterman, R. Grignard Reagents as Simple Catalysts for the Dehydrocoupling of Amine and Silanes *Dalton Trans.* **2024**, *53*, 16843–16848.

[§]Reuter, M. B.; Javier-Jiménez, D. R.; Bushey, C. E.; Waterman, R. Group I Alkoxides and Amylates as Highly Efficient Radical Precatalysts for Silicon–Nitrogen Heterodehydrocoupling *Chem. Eur. J.* **2023**, e202303420.

[§]Javier-Jiménez, D. R.; Novas, B. T.; Waterman, R. Zirconocene-Mediated Radical Hydrophosphination *Eur. J. Inorg. Chem.* **2023**, e202300341.

Nishino, R.; Tokitoh, N.; Sasayama, R.; Waterman, R.; Mizuhata, Y. Unusual Nuclear Exchange within a Germanium-containing Aromatic Ring that Results in Germanium Atom Transfer *Nature Commun.* **2023**, *14*, 4519.

[§]Seth, Jr., D. M.; Waterman, R. Photo-Initiated Radical Hydrophosphination at Titanium Compounds Capable of Ti–P Insertion *Organometallics* **2023**, *42*, 1213–1219.

[§]Reuter, M. B; Seth, J., D. M.; Javier-Jiménez, D. R.; Finfer, E.; Beretta, E. A.; Waterman, R. Recent Advances in Catalytic Pnictogen Bond Forming Reactions via Dehydrocoupling and Hydrofunctionalization *Chem. Commun.* **2023**, *59*, 1258–1273.

Dannenberg, S. G.; Seth, Jr. S. M.; Finfer, E. J.; Waterman, R. Divergent Mechanistic Pathways for Copper(I) Hydrophosphination Catalysis; Understanding that Allows for Diastereoselective Hydrophosphination of a Tri-substituted Styrene *ACS Catalysis* **2023**, *13*, 550–562.

Patents

Waterman, R.; Ackley, B. J. Low-Temperature Formation of Group 13-15 Ceramics and Group 13-15-16 Ceramics, U.S. 62/817,278 (non-provisional), February 11, 2020.

Waterman, R.; Ackley, B. J. Methods of Preparing Primary Phosphines Using a Lewis Acid Catalyst, U.S. 62/960,773 (non-provisional), January 7, 2021.

Books

Expanding the CURE Model: Course-based Undergraduate Research Experiences Waterman, R. and Heemstra, J., Eds. Research Corporation for Science Advancement: Tucson, A.Z., 2018.

Educational and Outreach Projects from the Cottrell Scholars Collaborative: Undergraduate and Graduate Education, Volume 1 Waterman, R. and Feig, A. L., Eds. American Chemical Society: Washington, D.C., 2017.

Educational and Outreach Projects from the Cottrell Scholars Collaborative: Professional Development and Outreach, Volume 2 Waterman, R. and Feig, A. L., Eds. American Chemical Society: Washington, D.C., 2017.

Selected Book Chapters

Ruggiero, M. T.; Waterman, R. "Changes in Curriculum and Focus to Support Students' Career Outcomes at the University of Vermont" In *Professional Mentoring Programs for Science Students: Career Mentoring for Students in the Physical Sciences* Beuning, P. J.; Urbach, A. R., Eds. ACS Symposium Series: Washington, DC. 2024.

Waterman, R. "A First-Year Community Intervention" In *Confronting Failure: Approaches to Building Confidence and Resilience in Undergraduate Researchers* Corwin, L.; Charkourdian, L.; Heemstra, J., Eds. Council on Undergraduate Research: Gaithersburg, MD, 2023.