Rory Waterman

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Appointments

2016–present	ASSOCIATE DEAN, COLLEGE OF ARTS AND SCIENCES University of Vermont, Burlington, VT
2016–present	PROFESSOR OF CHEMISTRY University of Vermont, Burlington, VT
2013–2014	HUMBOLDT RESEARCH FELLOW 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

The University of Chicago, Chicago, Illinois
Research Advisor: Professor Gregory L. Hillhouse (deceased)
Thesis: *The Chemistry of Three-Coordinate Nickel Phosphinidene, Imido, and Carbene Complexes*
Ph.D. in chemistry, June 2004
M.S. in chemistry, August 2000

University of Rochester, Rochester, New York
Research Advisor: Professor Kara Bren
Department of Chemistry, University of Rochester
Thesis: *Partially Denatured Cytochrome* c *Studies by Paramagnetic NMR: Effects of Guanidine Hydrochloride and Comparison to Methanol and Urea*
B.S. cum laude in chemistry, May 1999

Honors and Awards

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)

ACS YCC Leadership Development Award, Runner-up (2007)
Miller Institute for Basic Research in Science Research Fellowship (2004–2007)
Yang Cao-Lan-Xian Best Thesis Award (2004)
U.S. Department of Education GAANN Fellow (2000–2003)
Joan Shiu Award (2001)
Merck Award (1999)
Carl Whiteman Teaching Award (1998)
Xerox Scholar (1995–1999)

Professional Affiliations

American Chemical Society 1998–present
Divisions of Catalysis, Chemical Education, and Inorganic Chemistry
Royal Society of Chemistry 2008–present
Council on Undergraduate Research 2009–present

Teaching Experience

Department of Chemistry, University of Vermont
CHEM 31 General Chemistry I
CHEM 40 Introduction to Research
CHEM 75 Global Energy Prospective
CHEM 131 Inorganic Chemistry
CHEM 231 Advanced Inorganic Chemistry
CHEM 234 Organometallic Chemistry
CHEM 282 Senior Seminar
CHEM 318 Topics in Current Chemistry
CHEM 380 Chemical Investigations
CHEM 388 Research Problem Conception & Solution

Student Dissertations and Theses

Ph. D.

1. Andrew J. Roering "P–C and P=C Bond Formation of a Zirconium Complex via Stoichiometric and Catalytic Insertion Reactions," Ph. D., March 2011, University of Vermont.
2. Michael B. Ghebreab "Zirconium-Catalyzed Dehydrocoupling of Phosphines Toward Formation of π-Conjugated Organophosphorus Materials and Hydrophosphination" Ph. D., April 2013, University of Vermont.
3. Karla A. Erickson "Exploration of Zirconium and Tin Compounds for Dehydrocoupling of Silanes, Phosphines, and Amine Boranes" Ph. D., March 2014, University of Vermont.
4. Neil T. Mucha "Catalytic Main Group Element Bond Formation Reactions Toward the Preparation of Conjugated Materials" Ph. D., July 2015, University of Vermont.

M. S.

1. Nathan B Mahany "Multifunctional Magnetic Silica Nanoparticles for Biomedical Applications," M. S., June 2009, University of Vermont (co-advised with Christopher Landry).

2. Sarah E. Leshinski "Insertion Reactivity and Hydrophosphination Reactions of a Triamidoamine-Supported Zirconium Complex," M. S., March 2009, University of Vermont.
3. Annalese F. Maddox "Dehydrocoupling of Amine-Boranes and Insertion Products of Triamidoamine-Supported Zirconium-Amido and -Arsenido Complexes," M. S., August 2011, University of Vermont.
4. Victoria A. Carhart "A Comparative Examination of the Safety Programs at UCLA, UMN, and UVM in Response to Recent Chemistry Research Laboratory Incidents" M. S., August 2015, University of Vermont.

Educational Activities

Virtual judge, AEOP Ecybermission	2016
Member, NECAP Science Item Review Committee	2011 and 2012
Program Coordinator, Noyce Summer Internship Program	Summer 2010–present
Program Coordinator, UVM Project SEED	Summer 2007–present
Faculty Mentor, NEBHE Science Network 18th Annual Meeting	November 18, 2006

School visits to Burlington, South Burlington, and Essex school districts as well as to the Sara Holbrooke Center for grades K, 1, 2, 5, 6, 9, and high school chemistry and AP chemistry.

UVM Service

Committees

Department of Chemistry, University of Vermont

Faculty Search	AY 07–09, 11
Graduate Admissions	9/06–7/13, 9/14–7/15
Chair	9/07–7/13, 9/14–7/15
Curriculum (undergraduate)	AY 07, 09–12, 9/14–present
Chair	AY 12, 9/14–present
Instrumentation	9/07–7/13, 9/15–present
Safety	9/15–present

College of Arts and Sciences, University of Vermont

Member, College of Arts and Science Dean Search Committee	AY 2016
Member, Faculty Research Support Award Selection Committee	AY 2011
Member, Curricular Affairs Committee (sabbatical replacement)	s10, s12, f14
Member, Ad Hoc Committee on Diversity and Affirmative Action	5/07–6/08

University of Vermont

Member, University Committee on Teacher Education	10/15–present
Member, Faculty Senate Research, Scholarship, and the Creative Arts	9/14–present
Member, Graduate Aid and Tuition on Grants Committee	fall 2014
Member, Sustainability Curriculum Review Committee	9/14–present
Member, Ad Hoc Committee on Institutional Grants	AY 2013
Judge, UVM Student Scholars Poster Competition	9/12
Barry M. Goldwater Scholarship Faculty Representative	9/11–present
Member, Faculty Senate Research, Scholarship, and Graduate Education	9/10–5/13
Member, UVM (NE)AGEP Steering Committee	3/10–2/13
Member, Honors College Fellowships Committee	9/09–present

Member, President's Commission on Racial Diversity	9/08–6/13
Chair-elect	10/11–5/12
Char	5/12–6/13
University of Vermont Experts Database	4/08–present
Member, UVM Student Research Conference Steering Committee	10/07–04/08

Extramural Service

Board Member, Inorganic Reaction Mechanisms Discussion Group (RSC)	11/15–present

Meetings and symposia

Member, Organizing Committee	July 2007–present
Boston Regional Inorganic Colloquium (BRIC; www.uvm.org/bric)	

Program Chair for Inorganic Chemistry
35th Northeast Regional Meeting of the American Chemical Society

Symposia co-organized/organized

- "Course-Based Undergraduate Research Experiences (CUREs) in Chemistry" with J. Heemstra, U. Utah, *approved for* 253rd American Chemical Society National Meeting, San Diego, CA, April, 2017.
- "Cottrell Scholars Collaborative: Innovating the Integration of Research and Teaching" with A. Feig, Wayne State U. 251st American Chemical Society National Meeting, San Diego, CA, March 13, 2016.
- "Advances in Phosphorus Chemistry: Materials, Reactivity at Phosphorus, and Synthesis (#226)" with F. Ozawa, U. Kyoto; D. Gates, UBC; P-H Leung Nanyang Tech. U. International Chemical Congress of Pacific Basin Societies (Pacifichem), Honolulu, HI, December 20–21, 2015.
- "Metal-Mediated Polymerization (#292)" with P. Hayes, U. Lethbridge; T. Mizuta, Hiroshima U.; Y. Tang, State Key Lab. Organometallic Chem.; P. Sangtrirutnugul, Mahidol U. Pacifichem, Honolulu, HI, December 18–19, 2015.
- "High-Energy Organometallic Complexes: Reactivity Driving New Synthesis and Catalysis" with C. Cummins, MIT; M. Smith, MSU. 250th American Chemical Society National Meeting, Boston, MA, August 18–19, 2015.
- "Department, University, and National Models for Faculty Development to Support Adoption of Evidence-Based Teaching" with A. Feig, Wayne State U. 249th American Chemical Society National Meeting, Denver, CO March 23, 2015.
- "ACS Award for Distinguished Service in the Advancement of Inorganic Chemistry: Symposium in Honor of T. Don Tilley" J. Walzer, Exxon-Mobil. 247th American Chemical Society National Meeting, Dallas, TX, March 18–19, 2014.
- "ACS Awards ACS Awards: Symposium in Honor of Guy Bertrand and T. Don Tilley" with D. Bourissou, Paul Sabatier U.; F. Gabbaï, TAMU; J. Walzer, Exxon-Mobil. 247th American Chemical Society National Meeting, Dallas, TX, March 16–17, 2014.
- "Organometallic Chemistry of the Group 15 Elements" 35th Northeast Regional Meeting of the American Chemical Society, Burlington, VT, June 29, 2008.
- 18th Boston Regional Inorganic Colloquium with E. Rybak-Akimova, January 24, 2009.

Sessions chaired

- "Organometallic Chemistry: Catalysis" 248th American Chemical Society National Meeting, San Francisco, CA, August 14, 2014
- "Organometallic Chemistry: Catalysis" 240th American Chemical Society National Meeting, Boston, MA, August 25, 2010
- "Organometallic Chemistry: Synthesis" 239th American Chemical Society National Meeting, San Francisco, CA, March 25, 2010
- "Symposium in Honor of T. Don Tilley" 235th American Chemical Society National Meeting, New Orleans, LA, April 6, 2008
- "Applications of Organometallic Chemistry" 233rd American Chemical Society National Meeting, Chicago, IL, March 25, 2007

Journals and books

Guest editor for

"Phosphorus Chemistry: Discoveries and Advances" special issue, *Dalton Transactions*, February 2016.

"Protagonists in Chemistry: T. Don Tilley" special issue, *Inorganica Chimica Acta*, October 2014.

Member, Editorial Advisory Board of *Organometallics* January 2014–present

Journal reviewer for

ACS Catalysis, Angewandte Chemie, International Edition; Asian Journal of Organic Chemistry, Australian Journal of Chemistry, Chemical Communications, Chemical Reviews, Chemical Science, Chemical Society Reviews, Chemistry—A European Journal; Crystals, Dalton Transactions, Energy & Environmental Science, Environmental Engineering Science, Heteroatom Chemistry, HETL Review, Inorganic Chemistry, ISRN Inorganic Chemistry, Journal of the American Chemical Society, Journal of Computational Chemistry, Journal of Materials Chemistry, Journal of Organometallic Chemistry, Organic Preparations and Procedures International, Organometallics, Physical Chemistry Chemical Physics, Phosphorus, Sulfur, and Silicon and the Related Elements, Polyhedron, and *RSC Advances.*

Book reviewer for

W.H. Freeman and Company (Shriver & Atkins *Inorganic Chemistry, 5th Edition*), Oxford University Press (Spessard & Miessler *Organometallic Chemistry, 2nd Edition* and *Organometallic Chemistry: A Workbook*), Elsevier (*Inorganic Chemistry*), and Roberts and Co. (Birk & Yezierski *General Chemistry*)

Funding agency

- Panel Reviewer, U.S. National Science Foundation Chemistry Division (CHE), 2015
- Panel Reviewer, U.S. National Science Foundation Graduate Fellowship Program, 2015
- Panel Reviewer, U.S. National Science Foundation Chemistry Division (CHE), 2014
- Panel Reviewer, U.S. National Science Foundation Chemistry Division (CHE), 2011
- Panel Reviewer U.S. National Science Foundation Chemistry Division (CHE), 2010
- Leader, Mock Panel Review, EPSCoR Grant Writing Workshop, 2009

- Panel Reviewer, U.S. National Science Foundation Graduate Fellowship Program, 2009

Ad hoc grant proposal reviewer for
American Chemical Society Petroleum Research Fund, Fulbright Scholar Program, National Science and Engineering Council of Canada, Marsden Fund (New Zealand), Research Corporation for Science Advancement, U.S. Department of Energy, U.S. National Institutes of Health, U.S. National Science Foundation, and Vermont Space Grant Consortium

Collaborators

Prof. Joseph M. Tanski, Vassar College	X-ray crystallography
Prof. Dominic S. Wright, Cambridge University	Dehydrocoupling
Prof. Andrew Feig, Wayne State University	Faculty development
Prof. Marilyne Stains, University of Nebraska Lincoln	Faculty development
Prof. Manfred Scheer, University of Regensburg	Phosphinidenes
Prof. Madalina Furis, UVM Department of Physics	Magnetic nanocrystals
Prof. Russell P. Hughes, Dartmouth College	Theoretical chemistry
Dr. Lee Higham, Newcastle University	Air-stable phosphines
Prof. Richard Kemp, Sandia National Laboratory/UNM	CO_2 remediation
Prof. William Geiger, UVM	CO_2 remediation
Dr. Jaqueline L. Kiplinger, Los Alamos National Laboratory	U/Th catalysis
Dr. Viktoria Gessner, Universität Würzburg	Late metal carbenes
Prof. Paul Hayes, University of Lethbridge	Lactide polymerization

Invited Lectures (as a faculty member at UVM)

Boston Regional Inorganic Colloquium (BRIC)	May, 5 2007
Moravian College	October 24, 2007
Lafayette College	October 25, 2007
Muhlenberg College	October 26, 2007
Dartmouth College	February 28, 2008
University of New Hampshire	April 1, 2008
Brandeis University	September 22, 2008
University of Rochester	September 29, 2008
Iowa State University	December 5, 2008
University of Bath	March 13, 2009
Cambridge University	March 11, 2009
Emory University/Georgia Tech. (joint seminar)	March 31, 2009
University at Albany	April 21, 2009
2009 Organometallic Gordon Conference	July 14, 2009
Bucknell University	September 8, 2009
Queens College CUNY	September 14, 2009
University of Connecticut	September 15, 2009
University of Lethbridge	October 20, 2009
University of Calgary	October 21, 2009
University of Alberta	October 22, 2009
University of Toledo	November 9, 2009

Yangzhou University	December 28, 2009
Nanjing University	December 30, 2009
Clarkson University	January 29, 2010
Kent State University	February 23, 2010
University of Akron	February 24, 2010
Case Western Reserve University	February 25, 2010
Brown University	April 8, 2010
SUNY Potsdam	October 26, 2010
University of Rhode Island	January 24, 2011
University of New Mexico	February 14, 2011
SUNY Plattsburgh	February 18, 2011
Texas State University	February 22, 2011
University of Texas, Austin	February 23, 2011
Indiana University	February 25, 2011
Hiroshima University	April 18, 2011
Osaka University	April 20, 2011
Nagoya University	April 21, 2011
Kyoto University	April 22, 2011
ETH Zurich	May 24, 2011
Universität Regensburg	May 26, 2011
Universität Erlangen-Nürnburg (FAU)	May 30, 2011
VU University Amsterdam	June 1, 2011
University of California, Berkeley	September 2, 2011
Middlebury College	September 30, 2011
Shanghai Institute for Organic Chemistry	December 23, 2011
Guangxi Normal University	January 2, 2012
Skidmore College	February 1, 2012
University of Missouri, St. Louis	February 6, 2012
University of San Diego	February 24, 2012
University of California, San Diego	February 25, 2012
California Institute of Technology	February 27, 2012
University of Southern California	February 28, 2012
Newcastle University	December 18, 2012
Boston Regional Inorganic Colloquium (BRIC)	March 2, 2013
University of Delaware	May 5, 2013
Universidad Rey Juan Carlos	November 11, 2013
Universidad De Castille-La Mancha (Toledo)	November 12, 2013
Universidad De Castille-La Mancha (Ciudad Real)	November 13, 2013
Universität Würzburg	February 3, 2014
Technische Universität Graz	March 4, 2014
Ecolé Polytechnique	April 1, 2014
Université Pierre et Marie Curie	April 7, 2014
University of Southampton	April 9, 2014
Technische Universität Dresden	April 22, 2014
Universität Leipzig	April 25, 2014
Technische Universität Braunschweig	May 5, 2014

Universität Rostock	May 8, 2014
University of Crete	May 16, 2014
Ludwig-Maximilians-Universität München	May 22, 2014
Universidad de Barcelona	June 12, 2014
Universidad de Zaragoza	June 16, 2014
Universidad de Complutense	June 18, 2014
SUNY Cortland	September 29, 2014
University of Virginia	October 10, 2014
Wayne State University	November 5, 2014
Calvin College	November 6, 2014
Hope College	November 7, 2014
Universität Bonn	May 18, 2015
Humboldt-Universität zu Berlin	June 8, 2015
Universidad de Málaga	July 20, 2015
University of Missouri, Columbia	October 16, 2015
St. Michael's College	October 23, 2015
Université de Montréal	November 11, 2015
Los Alamos National Laboratory	November 16, 2015
The Ohio State University	February 3, 2016

future

UVM College of Arts and Sciences	November 3, 2016

Plenary lectures

16th SACIQ, Quebec, Canada	August 24, 2012

Publications

From work at UVM

§ indicates an invited manuscript or presentation.

70. Pagano, J. K.; Waterman, R. Visible Light Photocatalysis Using a Commercially Available Iron Compound **2016**, *submitted*.
69. Bange, C. A.; Waterman, R. Zirconium-Catalyzed Intermolecular Double Hydrophosphination of Alkynes with Primary Phosphines *ACS Catal.* **2016**, *accepted*.
68. §Bange, C. A.; Mucha, N. T.; Cousins, M.; Gehsmann, A.; Singer, A.; Traux, T.; Higham, L.; Waterman, R. Catalytic Hydrophosphination and Dehydrocoupling of an Air-Stable, Fluorescent Primary Phosphine *Inorganics* **2016**, *4*, 26.
67. Leshinski, S. E.; Wheaton, C. A.; Sun, H.; Roering, A. J.; Tanski, J. M.; Fox, D. J.; Hayes, P. G.; Waterman, R. Triamidoamine-Supported Zirconium: Hydrogen Activation, Lewis Acidity, and *rac*-Lactide Polymerization *RSC Advances* **2016**, 6, 70581–70585.
66. §Bange, C. A.; Waterman, R. Challenges in Catalytic Hydrophosphination *Chem. Eur. J.* **2016**, *in press*.
65. Afkhami, F. A.; Khandar, A. A.; Mahmoudi, G.; Maniukiewicz, W.; Lipkowski, J.; White, J. M.; Waterman, R.; García-Granda, S.; Zangrando, E.; Bauzá A.; Frontera, A. Synthesis, X-ray Characterization, DFT Calculations and Hirshfeld Surface Analysis

Studies of Zn(II) and Cd(II) Complexes Based on Isonicotinoylhydrazone Ligand *CrystEngComm* **2016**, *18*, 4587–4596.

64. Manning, L. W.; Rawat, N.; Lamarche, C.; Waterman, R.; Headrick, R. L.; Furis, M. Exciton Delocalization in Phthalocyanine Crystalline Thin Film Organic Alloys, *J. Phys. Chem C.* **2016**, *120*, 11966–11976.
63. Pagano, J. K.; Dorhout, J. M.; Scott, B. L.; Waterman, R; Czerwinski, K. R.; Kiplinger, J. L. Tuning the Oxidation State and Chemistry of Uranium Hydrides with Phenylsilane: The Case of the Classic Uranium(III) Hydride Complex, $[(C_5Me_5)_2U(\mu\text{-}H)]_2$ *Organometallics*, **2016**, *35*, 617–620.
62. Stelmach, J. P. W.; Bange, C. A.; Waterman, R. Tin-Catalyzed Hydrophopshination of Alkenes *Dalton Trans.* **2016**, *45*, 6204–6209.
61. Ghebreab, M. B.; Costanza, S.; Waterman, R. Selectivity Effects in Zirconium-Catalyzed Heterodehydrocoupling Reactions of Phosphines, *Phosphorus, Sulfur Silicon Relat. Elem.,* **2016**, *191*, 668–670.
60. Weismann, J.; Waterman, R.; Gessner, V. H. Metal ligand Cooperativity in a Methandiide Derived Iridium Carbene Complex *Chem. Eur. J.*, **2016**, *22*, 3846–3855.
59. §Bange, C. A.; Ghebreab, M. B.; Ficks, A.; Mucha, N. T.; Higham, L.; Waterman, R. Zirconium-Catalyzed Intermolecular Hydrophosphination Using a Chiral, Air-Stable Primary Phosphine *Dalton Trans.* **2016**, *45,* 1863–1867 (Phosphorus Chemistry special issue).
58. McGrew, G. I.; Khatri, P.A.; Geiger, W. E.; Kemp, R. A.; Waterman, R. Unexpected Formal Insertion of CO_2 into the C–Si Bonds of a Zinc Compound *Chem. Commun.* **2015**, *51*, 15804–15807.
57. Pagano, J. K.; Dorhout, J. M.; Czerwinski, K. R.; Waterman, R; Kiplinger, J. L. Phenylsilane as a Safe, Versatile Alternative to Hydrogen for the Synthesis of Actinide Hydrides *Chem. Commun.* **2015**, *51*, 17379–17381.
56. Erickson, K. A.; Stelmach, J. P. W.; Mucha, N. T.; Waterman, R. Zirconium Catalyzed Amine-Borane Dehydrocoupling and Transfer Hydrogenation *Organometallics* **2015**, *34*, 4693–4699.
55. Rawat, N.; Lamarche, C. J.; Tokumoto, T.; Wetherby, A. J.; Waterman, R.; Headrick, R. L.; McGill, S. A.; Furis, M. Magnetic Circular Dichroism (MCD) Study of Exchange Interaction in Polycrystalline Thin Films of Copper Octabutoxy Phthalocyanine, *Sci. Rep*. **2015**, *5*, article: 16536.
54. §Mucha, N. T.; Waterman, R. Iridium Pincer Catalysts for Silane Dehydrocoupling: Ligand Effects on Selectivity and Activity *Organometallics* **2015**, *34*, 3865–3872. (Hillhouse memorial issue)
53. Rawat, N.; Pan, Z.; Manning, L. W.; Cour, I.; Headrick, R. L.; Waterman, R.; Woll, A. R.; Furis, M. I. Spatially, Temporally and Polarization-Resolved Photoluminescence Exploration of Excitons in Crystalline Phthalocyanine Thin Films *J. Phys. Chem. Lett.* **2015**, *6*, 1834-1840.
52. §Pagano, J. K.; Stelmach, J. P. W.; Waterman, R. Cobalt-Catalyzed Ammonia Borane Dehydrocoupling and Transfer Hydrogenation under Aerobic Conditions *Dalton Trans.* **2015**, *44*, 12074-12077 (Earth-abundant metals in catalysis special issue).
51. Baker, L. A.; Chakraverty, D.; Columbus, L.; Feig, A. L.; Jenks, W. S.; Pilarz, M.; Stains, M.; Waterman, R.; Wesemann, J. L. Cottrell Scholars Collaborative New Faculty

Workshop: Professional Development for New Chemistry Faculty *J. Chem. Educ.* **2014**, *91*, 1874-1881.

50. §Erickson, K. A., Dixon, L. S. H.; Wright, D. S., Waterman, R. Exploration of Tin-Catalyzed Dehydrocoupling: Catalyst Effects and Observation of Tin-Catalyzed Hydrophosphination *Inorg. Chim. Acta* **2014**, *422*, 141–145. (Protagonist in Chemistry: T. Don Tilley special issue)
49. Ghebreab, M. B.; Bange, C. A.; Waterman, R. Intermolecular Zirconium-Catalyzed Hydrophosphination of Alkenes and Dienes with Primary Phosphines *J. Am. Chem. Soc.* **2014**, *136*, 9240–9243.
48. §Erickson, K. A., Wright, D. S., Waterman, R. Dehydrocoupling of Amine Boranes via Tin(IV) and Tin(II) Catalysts *J. Organomet. Chem.* **2014**, *751*, 541–545. (50th anniversary special issue)
47. §Waterman, R. σ-Bond Metathesis: A 30-Year Retrospective *Organometallics*, **2013**, *32*, 7249–7263. (invited review)
46. Barry, B. M.; Stein, B. W.; Larsen, C. A.; Wirtz, M. N.; Geiger, W. E.; Waterman, R.; Kemp, R. A. Metal Complexes (M = Zn, Sn, and Pb) of 2-Phosphinobenzenethiolates: Insights into Ligand Folding and Hemilability *Inorg. Chem*. **2013**, *52*, 9875–9884.
45. Maddox, A. F.; Davidson, J. J.; Shalumova, T.; Tanski, J. M.; Waterman, R. Zirconium-Mediated Synthesis of Arsaalkene Compounds from Arsines and Isocyanides *Inorg. Chem.* **2013**, *52*, 7811–7816.
44. §Waterman, R. Mechanisms of Metal-Catalyzed Dehydrocoupling Reactions *Chem. Soc. Rev.* **2013**, *42*, 5629–5641. (invited review)
43. Roering, A. J.; Elrod, L. T.; Pagano, J. K.; Guillot, S. L.; Chan, S. M.; Tanski, J. M.; Waterman, R. A General, Zirconium-Mediated Synthesis of Phosphaalkenes with Liberation of Phosphaformamides *Dalton Trans.* **2013**, *42*, 1159–1167.
42. Elrod, L. T.; Boxwala, H.; Haq, H.; Zhao, A. W.; Waterman, R. As–As Bond Formation via Reductive Elimination from a Zirconocene Bis(Dimesitylarsenide) Compound *Organometallics* **2012**, *31*, 5304–5307.
41. Barry, B. M.; Dickie, D. A.; Wetherby, A. E., Jr.; Barker, W. E., IV; Larsen, C. A.; Waterman, R.; Geiger, W. E.; Kemp, R. A.CO_2 Interactions with Main Group Compounds Directed towards Preparing Useful Organic Products *Prepr. Symp. - Am. Chem. Soc., Div. Fuel Chem.* **2012**, 57(1), 294-296.
40. Kuhune, M. E.; Waterman, R. *rac*-Methoxycoronaridine Hydrochloride *Acta Cryst. E.* **2012**, *68(4)*, o1041.
39. Vaughan, B. A.; Wetherby A. E.; Waterman, R. Bis(*p*-tolyl-(2*Z*,4*E*)-4-(*p*-tolylimino)pent-2-en-2-yl)amino)zinc(II) *Acta Cryst. E.* **2012**, *68(3)*, m343.
38. Vaughan, B. A.; Arsenault, E. A.; Chan, S. M.; Waterman, R. Synthesis and Characterization of Zinc Complexes and Testing for Phosphine Dehydrocoupling Reactivity *J. Organomet. Chem.* **2012**, *696*, 4327–4331.
37. §Waterman, R. Dehydrogenative Bond-Forming Catalysis Involving Phosphines: Updated Through 2010. *Curr. Org. Chem*. **2012**, *16*, 1313–1331. (invited review)
36. Maddox, A. F.; Erickson, K. A.; Tanski, J. M.; Waterman, R. C–N Bond Formation via Ligand-Induced Nucleophilicity at a Coordinated Triamidoamine Ligand *Chem. Commun.* **2011**, *47*, 11769–11771.
35. §Ghebreab, M. B.; Newsham, D. K.; Waterman, R. Differences in the Stability of Zirconium(IV) Complexes Related to Catalytic Phosphine Dehydrocoupling Reactions

Dalton Trans. **2011**, *40*(30), 7683–7685. (invited contribution to the d^0 organometallics in catalysis special issue)

34. Leshinski, S. E.; Shalumova, T.; MacMillan, S. N.; Tanski, J. M.; Waterman, R. Insertion Reactions Involving a Triamidoamine-Supported Zirconium Complex *Dalton Trans.* **2010**, *39*, 9073–9078.
33. Roering, A. J.; Leshinski, S. E.; Chan, S. M.; MacMillan, S. N.; Tanski, J. M.; Waterman, R. Insertion Reactions and Catalytic Hydrophosphination by Triamidoamine-Supported Zirconium Complexes *Organometallics* **2010**, *29*, 2557–2565.
32. Ghebreab, M. B.; Shalumova, T.; Tanski, J. M.; Waterman, R. Triamidoamine-Supported Zirconium Complexes in the Catalytic Dehydrocoupling of 1,2-Bisphosphinobenzene and -Ethane *Polyhedron* **2010**, *29*, 42–45. Part of the special "Young Investigator" issue
31. Roering, A. J.; Maddox, A. F.; Elrod, L. T.; Chan, S. M.; Ghebreab, M. B.; Donovan, K. L.; Davidson, J. J.; Hughes, R. P.; Shalumova, T.; MacMillan, S. N.; Tanski, J. M.; Waterman, R. General Preparation of $(N_3N)ZrX$ ($N_3N = N(CH_2CH_2NSiMe_3)_3^{3-}$) Complexes from a Hydride Surrogate *Organometallics* **2009**, *28*, 573–581.
30. Waterman, R. Metal-Phosphido and -Phosphinidene Complexes in P–E Bond-Forming Reactions *Dalton Trans.* **2009**, 18–26. A *Dalton Transactions* top-ten most cited article in 2009
29. §Waterman, R. Dehydrogenative Bond-Forming Catalysis Involving Phosphines *Curr. Org. Chem*. **2008**, *12*, 1322–1339.
28. Roering, A. J.; Davidson, J. J.; MacMillan, S. N.; Tanski, J. M.; Waterman, R. Mechanistic Variety in Zirconium-Catalyzed Bond-Forming Reaction of Arsines *Dalton Trans*. **2008**, 4488–4498.
27. MacMillan, S. N.; Tanski, J. M.; Waterman, R. {*N,N*-Bis[2-(trimethylsilylamino)ethyl]-*N*'-(trimethylsilyl)ethane-1,2-diaminato(3–)-κ^4N}methylzirconium(IV) *Acta Cryst.* **2008**, E*64*, m477.
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