

Margaret E. Kerr
email: mkerr@worchester.edu

Education	Ph.D., Wesleyan University Organometallic/ Inorganic Chemistry	June 1997 defended (May 1998 awarded)
	Bachelor of Science, University of Maine Chemistry, with high distinction.	May 1992
Experience	Worcester State University, Worcester, MA Professor	Sept. 2000-present
	Worcester State University, Worcester, MA Department Chair	July 2012-June 2017
	Worcester Polytechnic University, Worcester, MA Visiting Scholar	July 2015-Jan. 2016
	Ubon Ratchathani University, Thailand Visiting Professor	August 2009
	Chulalongkorn University, Bangkok, Thailand Fulbright Senior Scholar	July-December, 2007
	University of Massachusetts Medical School Coordinator, Summer Enrichment Program	May-June 2004, 2005, 2006, 2008
	Atofina Petrochemicals, Houston, TX (Formerly Fina Oil and Chemical) Sr. Staff R&D Chemist	July 1998-Aug. 2000
	University of Florida Postdoctoral Researcher	June 1997-July 1998
	Graduate Research, Wesleyan University Research Assistant (Sept. 1994-June 1997) Teaching Assistant (Sept. 1992-Sept. 1994)	Sept.1992-June 1997
	Undergraduate Research, University of Maine	Sept.1990-May 1992
	Summer Research Co-op, University of Maine	Summer 1991

Teaching Experience

CH 120, 121 General Chemistry Lecture and Laboratory
CH 201, 202 Organic Chemistry Lecture

CH 203, 204 Organic Chemistry Laboratory (green chemistry curriculum)
CH 340 Advanced Inorganic Chemistry
CH 490 Independent Study in Chemistry
CH 480 Chemistry Internship Supervision
CH 191 Paper or Plastic? (first year seminar)
CH 106 Paper or Plastic? (Online course, Liberal Arts and Sciences Curriculum)
CH 495 Fundamentals of Chemical Research
WSC 101 Academic Strategies to College Success
CHEM 1410 Organometallic Chemistry and Applications to Organic Syntheses (Thailand)
CH 455 Organometallics in Organic Synthesis

Awards	George I. Alden Excellence in Teaching Award	2008
	Commonwealth Citation for Outstanding Performance	2007
	Nominated, WSC Excellence in Teaching Award	2006
	American Chemical Society Graduate Student Award	May 1993
	J. Wolfhagen Scholarship	Sept. 1991
	CRC Press Freshman Chemistry Achievement Award	May 1989

Affiliations Member of the American Chemical Society
Member of Gamma Sigma Epsilon, Chemical Honor Society
Member of the Fulbright Alumni Association
Member of the Northeast Association of Advisors for the Health Professions

Publications List

1. Dilip, Meghna; Kerr, Margaret E. Greening the Curriculum: Traditional and Online Offerings for Science and Nonscience Majors. In *Sustainable Green Chemistry*, Mark A. Benvenuto (Ed.); Green Chemical Processing Series; Walter de Gruyter GmbH: Berlin/Boston, 2017; Volume 1, 103-115.
2. "Non-Directed, Carbonate-Mediated C-H Activation and Aerobic C-H Oxygenation with Cp*Ir Catalysts." M.E. Kerr, I. Ahmed, A. Gunay, N.J. Venditto, F. Zhu, E. Ison, M.H. Emmert. *Dalton Transactions*, **2016**, 45, 9942-9947, DOI: 10.1039/C6DT00234J.
3. Dilip, M. & Kerr, M. (2016). Greening the Curriculum: Traditional and Online Offerings for Science and Nonscience Majors. *Physical Sciences Reviews*, 1(10). DOI:10.1515/psr-2016-0078.
4. "Synthesis and photodimerization of monoalkoxy-4-methylcoumarins: substitution effect on the rate of photodimerization." Thamrongsak Cheewawisuttichai, Lalita Khamkaew, Supawan Tantayanon, Margaret E. Kerr, Ong-art Thanetnit. Manuscript approved for publication in *Chiang Mai Journal of Science*, May 2017.
5. "Atom Economy", essay and chapter problems, in "Chemistry for Changing Times", J. Hill, 14th Ed. Prentice Hall Publications, 2014.
6. "Atom Economy", essay and chapter problems, in "Chemistry for Changing Times", J. Hill, 13th Ed. Prentice Hall Publications, 2012.
7. Margaret E. Kerr, David M. Brown. Chapter 2: Using Green Chemistry to Enhance Faculty Professional Development Opportunities. In *Green Chemistry Education: Changing the Course of Chemistry*, Paul T. Anastas, Irvin J. Levy, Kathryn E. Parent, Editors. American

- Chemical Society Symposium Series No. 10011, Oxford University Press, April 2009.
ISBN 978-0-8412-7447-1.
8. "Atom Economy", essay, in "Chemistry for Changing Times", J. Hill, 12th Ed. Prentice Hall Publications, 2008.
 9. "Green Chemistry Education", Invited Article, *Chemistry in Malaysia*, Newsletter for the Malaysian Chemical Society, September 2008.
 10. "Green Chemistry and Sustainable Development", Invited Article, *Maejo International Journal of Science and Technology*, **2007**, 01(02), 95-97.
 11. "Atom Economy", Media Lab, in "Chemistry for Changing Times", J. Hill, D. Kolb, 11th Ed. Prentice Hall Publications, 2006.
 12. "Supported Metallocene Catalysts", Gauthier, W.J., Kerr, M.E., Tian, J., Rauscher, D.J., Patrick, C., Henry, S., United States Patent 6,855,783. Issued 2/15/2005.
 13. "Method for the Preparation of Metallocene Catalysts." Gauthier, W.J., Lopez, M, Rauscher, D.J., Kerr, M.E., Campbell, D.J. United States Patent 6,777,366. Issued 8/17/04.
 14. "Hydride and Proton Transfer Reactions of Niobium-Bound Ligands. Synthetic and Thermodynamic Studies of Ketene, Enacyl and Vinylketene Complexes." Margaret E. Kerr, Niladri Sarker, Azzam Hneihen, Gail Schulte, Joseph W. Bruno. *Organometallics* **2000**, 19, 901-912.
 15. "Bimetallic Pt/Ru Complexes as Catalysts for the Electrooxidation of Methanol." Mark E. Tess, Pamela L. Hill, Karen E. Torraca, Margaret E. Kerr, Khalil A. Abboud, Lisa McElwee-White. *Inorg. Chem.* **2000**, 39, 3942-3944.
 16. "Synthesis and Reactivity of Niobium-Vinylketene Complexes Exhibiting Ketene η^2 -C,O Complexation." Margaret E. Kerr and Joseph W. Bruno. *J. Am. Chem. Soc.* **1997**, 119, 3183-3184.
 17. "Effects of the Niobium(V) Center on the Energetics of Ligand-Centered Proton and Hydrogen Atom Transfer Reactions in Acyl and Alkoxide Complexes." Margaret E. Kerr, Xian-Man Zhang, and Joseph W. Bruno. *Organometallics* **1997**, 16, 3249-3251.
 18. "Electrophilic Attack on the Carbon Terminus of a Niobium-Bound Formaldehyde Ligand." B. Thiyagarajan, Margaret E. Kerr, John C. Bollinger, Victor G. Young, Jr., and Joseph W. Bruno. *Organometallics* **1997**, 16, 1331-1334.
 19. "Luminescence Studies on Substituted Niobocene Ketene Complexes: Evidence for Thermally-Activated Excited State Processes Involving Arene Torsion." Margaret E. Kerr, Maria C. Fermin, and Joseph W. Bruno. *J. Chem. Soc., Chem. Commun.*, **1996**, 1221.
 20. "Autoxidation of an Electron-Rich Organometallic. Mechanism of the Reaction of a Substituted Niobocene Compound with Dioxygen." B. Thiyagarajan, Margaret E. Kerr, and Joseph W. Bruno. *Inorg. Chem.* **1995**, 34, 3444-3452.
 21. "Synthesis, Structure and Electronic Spectroscopy of Neutral, Dinuclear Gold(I)-Gold(I) Interactions in Solution and Solid State." Ratnavathany Narayanaswamy, Michelle Young, Erica Parkhurst, Michelle Oulette, Margaret E. Kerr, Douglas M. Ho, Richard L. Elder, Alice E. Bruce, and Mitchell R.M. Bruce. *Inorg. Chem.* **1993**, 32, 2506-2517.
 22. "Insight into Formation and Reactivity of Molybdenum (0) Bent Nitrenes. Crystal Structure of a Phosphine-Phosphoranimine Chelate." A. Saravanamuthu, D.M. Ho, M.E. Kerr, C. Fitzgerald, M.R.M. Bruce, and A.E. Bruce. *Inorg. Chem.* **1993**, 32, 2202-2206.

Presentations

1. "Non-Directed, Carbonate-Mediated C-H Activation and Aerobic C-H Oxygenation with Cp*Ir Catalysts." Ubon Ratchathani University, Ubon Ratchathani, Thailand, invited presentation, May, 2016.
2. "Green Chemistry Education in Middle and High School.", Satit Chula Demonstration School, Chulalongkorn University, Bangkok, Thailand, June, 2016.
3. "Paper or Plastic? An Online Approach to Teaching Green Chemistry and Sustainability to Non-Science Majors." 250th American Chemical Society Meeting, Boston, MA. August, 2015. Oral presentation (Chemical Education) and poster presentation (SciMix).
4. "From Non-Majors to Seniors: Flavors of Green Chemistry at Worcester State University", Green Chemistry in Education Workshop, Eugene, Oregon, July, 2014.
5. "Synthesis and Substitution Effects on the Photodimerization of Mono- and Dialkylxy-4-methylcoumarins", Pure and Applied Chemistry International Conference, Khon Kaen, Thailand, January 8-10, 2014.
6. "Nine Years of Green Chemistry at Worcester State University: Still Moving Forward", Green Chemistry in Education Workshop, Eugene, Oregon, July, 2012.
7. Invited speaker "Synthesis and Dimerization Studies on Water Soluble Coumarin-Polyvinylalcohol Polymers", 14th Asian Chemical Congress, Bangkok, Thailand, September 6, 2011.
8. Invited speaker, "Introduction to Green Chemistry", Chulalongkorn University Demonstration School, Bangkok, Thailand, August 31, 2011.
9. Invited panel speaker "Education and the Future of Green Chemistry", EPA Regional Science Workshop on Sustainable Green Chemistry, Boston, MA, June 13-14, 2011.
10. "Fostering International Exchange Through the Development of an Undergraduate Green Chemistry Research Course". EPA New England Green Chemistry Networking Forum, MIT, Cambridge, MA, December 16, 2010. Poster Presentation.
11. "Green Chemistry at Worcester State College: Avoiding the Seven-year Itch". Green Chemistry in Education Workshop, Eugene, Oregon, July, 2010.
12. "Green Chemistry: A Critical Component of a Sustainable Society", Worcester Academy, Worcester, MA, March 31, 2009.
13. "Green Chemistry: Promoting Sustainability through Education, a Fulbright Experience in Thailand", Fairleigh-Dickenson University, Teaneck, NJ, March 6, 2009.
14. "Green Chemistry: Promoting Sustainability through Education, a Fulbright Experience in Thailand", University of Maine, Orono, ME, February 3, 2009.
15. "Green Chemistry: Promoting Sustainability through Education, a Fulbright Experience in Thailand", College of the Atlantic, Bar Harbor, ME, February 2, 2009.
16. "Green Chemistry: Promoting Sustainability through Education, a Fulbright Experience in Thailand", Worcester State College Women's Studies Symposium Series, November 7, 2008.
17. "An International Green Chemistry Experience", 15th Annual Northeast Region Undergraduate Day, Simmons College, Boston, MA, November 1, 2008.
18. "Green Chemistry: Promoting Sustainability through Education, a Fulbright Experience in Thailand", Gordon College, Wenham, MA, March, 2008.
19. "Green Chemistry: Promoting Sustainability through Education, a Fulbright Experience in Thailand", Wesleyan University, Middletown, CT, January, 2008.
20. "Small Scale and Green Chemistry Approach for Education", Workshop Presentation, Science Education in Asia and the Pacific Conference, Bangkok, Thailand, December 1,

2007. (With Dr. Supawan Tantayanon and Dr. Denyce Wicht from Suffolk University, Boston, USA)
21. "Green Chemistry Program Development: Implementation Best Practices and Professional Opportunities" Science Education in Asia and the Pacific Conference, Bangkok, Thailand, November 28, 2007.
 22. "Green Chemistry: Promoting Sustainability through Education", Silpakorn University, Sanam Chan Palace Campus, Nakhon Pathom, Thailand, November 20, 2007.
 23. "Green Chemistry: Promoting Sustainability through Education", Ubon Ratchatani University, Ubon Ratchatani, Thailand, November 8, 2007.
 24. "Small Glass Kit and Green Chemistry", Workshop Presentation, ICASE Asian Symposium 2007 (International Council of the Association of Science Education) Small Lab Kit and Green Chemistry, Pattaya, Thailand, November 6, 2007.
 25. "Green Chemistry: Promoting Sustainability through Education", Hanoi University Faculty of Science, Vietnam National University, Hanoi, Vietnam, October 1, 2007.
 26. "Green Chemistry: Promoting Sustainability through Education", Maejo University, Chiang Mai, Thailand, September 19, 2007.
 27. "Green Chemistry: Promoting Sustainability through Education", Chulalongkorn University, Bangkok, Thailand, September 4, 2007.
 28. "Small Glass Kit and Green Chemistry", Workshop Presentation, 12 Asian Chemical Congress, Kuala Lumpur, Malaysia, August 25, 2007. (With Dr. Supawan Tantayanon)
 29. "Green Chemistry Curriculum Development". 12th Asian Chemical Congress, Kuala Lumpur, Malaysia, August 24, 2007. Poster presentation.
 30. "Small Glass Kit and Green Chemistry", Workshop Presentation, Universiti Teknologi Mara, Selangor, Malaysia, August 24, 2007. (With Dr. Supawan Tantayanon)
 31. "Green Chemistry: Promoting Sustainability through Education", Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia, August 22, 2007.
 32. "Expansion Beyond the Laboratory: Development of a Sustainable Green Chemistry Program at Worcester State College", 1st Annual Green Chemistry and Engineering Conference, Washington D.C., June 26-29, 2007.
 33. "Green Chemistry at Worcester State College" (talk) and "Green bromination of cyclohexene followed by the solvent-free synthesis of chalcones" (workshop), Western Division Meeting of New England Association of Chemistry Teachers, Hampshire College, Amherst, MA, January 13, 2007.
 34. "Incorporation of green chemistry into the undergraduate curriculum at public four-year colleges" by invitation at the Green Chemistry: State-of-the-Art Symposium for Chemical Educators at the 232nd American Chemical Society National Meeting in San Francisco, California, September 10-14, 2006.
 35. 19th Annual Biennial Conference on Chemical Education at Purdue University in West Lafayette, Indiana, July 30-August 3. "Green Chemistry at Worcester State College: Curriculum Changes and Demo Development".
 36. Green Chemistry in Education Workshop, Eugene Oregon, Invited Seminar, July 19, 2006. "A Rolling Stone Gathers No Moss: 3 Years of Curriculum Development at Worcester State College".
 37. Green Chemistry in Education Workshop, Eugene Oregon, Invited Seminar, July 29, 2005. "Jumping In With Both Feet: Changing To a Green Chemistry Curriculum, Year 2".

38. Environmental Research Symposium, Colleges of Worcester Consortium, Worcester, MA, April 20, 2005. Poster Presentation. "Green Chemistry at Worcester State College". Margaret E. Kerr, Angela Ginkuju and Bankole Samuel.
39. Green Chemistry in Education Workshop, Eugene Oregon, Invited Seminar, July 28, 2004. "Jumping In With Both Feet: Changing To a Green Chemistry Curriculum".
40. Unity College, Unity Maine, Invited Seminar, April 19, 2004. "Green Chemistry in the Organic Laboratory".
41. 6th Annual Green Chemistry and Engineering Conference, Washington, D.C., June 2002. Poster Presentation. "A Greener Glaze: Use of Sol-Gel Chemistry to Reduce Exposure to Metals in the Preparation and Use of Ceramic Glazes." Margaret E. Kerr, Paula E. Sloan, Carrie A. Dalpe.
42. Worcester State College, Faculty Forum, April 20, 2001, "The Other Side of Recycling: Chemical Research and Production in the Plastics Industry".
43. Florida ACS meeting. June 1998, Seminar Presentation, "Investigations into the Electrocatalytic Oxidation of Methanol Using Heterobimetallic Systems."
44. University of Florida, Research Affiliates Meeting. October 23, 1997. Poster Presentation. "Investigations into the Electrocatalytic Oxidation of Methanol Using Heterobimetallic Systems."
45. University of Maine, Invited Seminar. April 1, 1997. "Effects of the Niobium (V) Center on the Energetics and Reactivity of Coordinated Ketene and Formaldehyde."