

Bruce E. Wilson

Scientist

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Education and Training

1988 University of Washington, Analytical Chemistry, PhD

1997 Michigan State University, Chemistry and Mathematics, BS

Research and Professional Experience

- 2010-Present Adjunct Professor. School of Information Sciences, University of Tennessee-Knoxville (Joint appointment through ORNL). Institutional Lead and Cyberinfrastructure Co-Lead for NSF-funded DataONE (Observation Network for the Earth) \$4M/year project.
- 2008-Present Group Leader. Environmental Data Science and Systems, Oak Ridge National Laboratory. Responsible for a group with four environmental data centers representing multiple federal agency sponsors and a total budget of over \$7M/year. Manager of the ORNL Distributed Active Archive Center (DAAC) for biogeochemical dynamics.
- 2009 Research Leader. School of Information Sciences, University of Tennessee, Knoxville (Joint appointment through ORNL). Institutional Lead and Cyberinfrastructure Co-Lead for NSF-funded DataONE (Observation Network for the Earth) \$4M/year project. Contribute to course instruction in managing information organizations and data architecture.
- 2006-2007 Environmental Informatics Leader. Environmental Sciences Division, ORNL. Responsible for information systems design and systems operation for the ORNL DAAC, and for technical coordination with the ORNL environmental data centers. Improved reliability and system capability by leading the design and implementation of a new systems and technical architecture.
- 2001-2006 Informatics Technical Leader. Dow Chemical, Midland, MI. Technical Leader for a \$25M/year project to implement an informatics system to support high throughput research in catalysis and material sciences. Coordinated the work of approximately 40 developers at 8 sites in the US and Europe, supporting a range of chemical process improvements.
- 2000-2001 Senior Research Scientist. Dow Corning, Midland, MI. Lead computing, process modeling, and data fusion expert for a project to improve sealant production by developing a highly instrumented pilot plant facility. This work led to new understanding of catalyst interactions in silicone sealants.
- 1997-1999 Varied positions. Eastman Chemical Co., Kingsport, TN. Variety of research and leadership positions in computational chemistry, polymer chemistry, chemical information management, and process analytical chemistry. This work led to four patents, two commercialized new polymer formulations, an improved understanding of the fouling of epoxidation catalysts, \$1M/year savings from improved processes for managing Harmonized Tariff Codes, substantial savings from reduced seasonality in cellulose acetate production, and improved processes for reheat blow molding of polyethylene terephthalate containers.

Publications

1. Dali Wang, Wilfred M. Post, Bruce E. Wilson "Several Computational Opportunities and Challenges Associated with Climate Change Modeling" *Computing in Science and Engineering* Accepted for publication.
2. Ranjeet Devarakonda, Giri Palansiamy, James M. Green, Bruce E. Wilson "Mercury: Reusable Metadata Management, Data Discovery and Access System" *Earth Science Informatics* vol 3#1-2 87-94 (2010) [doi:10.1007/s12145-010-0050-7](https://doi.org/10.1007/s12145-010-0050-7).

3. Suresh Kumar Santhana Vannan, Robert B. Cook, Bruce E. Wilson, Susan K. Holladay, Lisa M. Olsen, and Upendra Dadi "A Web-Based Subsetting service for Regional Scale MODIS Land Products" *IEEE Journal of Selected Topics in Earth Observations and Remote Sensing*, vol 2#4 319-328 (2009) [doi:10.1109/JSTARS.2009.2036585](https://doi.org/10.1109/JSTARS.2009.2036585).
4. Ellen G. Denny, Abraham J. Miller-Rushing, Brian P. Haggarty, Lisa Benton, Theresa M. Crimmins, Mark Losleben, Andrew D. Richardson, Alyssa Rosemartin, Mark D. Schwartz, Kathryn A. Thomas, Jake F. Weltzin and Bruce E. Wilson "A new approach to generating research-quality data through citizen science: The USA National Phenology Monitoring System" *Nature Proceedings* [doi:10.1038/npre.2009.3695.1](https://doi.org/10.1038/npre.2009.3695.1) (2009).
5. Jeffrey T. Morisette, Andrew D. Richardson, Alan K. Knapp, Jeremy I. Fisher, Eric A. Graham, John Abatzoglou, Bruce E. Wilson, David D. Breshears, Geoffrey M. Henebry, Jonathan M. Hanes, and Liang Liang "Tracking the rhythm of the seasons in the face of global change: phenological research in the 21st century" *Frontiers in Ecology and the Environment* **7#5** (2009) 253-260 [doi:10.1890/070217](https://doi.org/10.1890/070217).
6. Kevin P. Peil, David R. Neithamer, Donald W. Patrick, Bruce E. Wilson, Christopher J. Tucker "Applications of High Throughput Research at The Dow Chemical Company" *Macromol. Rapid Commun.* (2004) **25**(1), 119–126 [doi:10.1002/marc.200300160](https://doi.org/10.1002/marc.200300160).
7. Alan S. Jones, Todd J. Dickson, Bruce E. Wilson & Jean Duhamel "Fluorescence properties of poly(ethylene terephthalate-co-2,6-naphthalene dicarboxylate) with naphthalene dicarboxylate contents ranging from 0.01 to 100 mole%" *Macromolecules* (1999) **32**(9) 2956-2961 [doi:10.1021/ma9811573](https://doi.org/10.1021/ma9811573).
8. Bruce E. Wilson & Bruce R. Kowalski "Quantitative analysis in the presence of spectral interferents using second-order nonbilinear data" *Anal. Chem.* (1989), **61**(20) 2277-84 [doi:10.1021/ac00195a013](https://doi.org/10.1021/ac00195a013).
9. Bruce E. Wilson, Walter Linberg & Bruce R. Kowalski "Multicomponent quantitative analysis using second-order nonbilinear data: theory and simulations" *J. Am. Chem. Soc.* (1989) **111**(11) 3797-804 [doi:10.1021/ja00193a006](https://doi.org/10.1021/ja00193a006).
10. LS Ramos, KR Beebe, Walter P. Carey, E Sanchez, Bryce C. Erickson, Bruce E. Wilson, Larry E. Wangen & Bruce R. Kowalski "Chemometrics" *Anal. Chem.* (1986) **58**(5) 294R-315R [doi:10.1021/ac00296a020](https://doi.org/10.1021/ac00296a020).

Synergistic Activities

1. 1/08-present: Finance Committee, Federation of Earth Science Information Partners.
2. 10/07-present: Cyberinfrastructure Lead and Member, Board of Directors, USA National Phenology Network: Responsible for the development and implementation of USA-NPN cyberinfrastructure. Organized and led two workshops on cyberinfrastructure development.
3. 6/06-present: Manager, Mercury Metadata Tool Consortium: Mercury (<http://mercury.ornl.gov>) is a toolset for harvesting, indexing, and searching spatiotemporal metadata, currently used on multiple projects sponsored by three different US Federal agencies.

Awards and Honors

1. Completed, ORNL Developing Leadership Potential 18 month year management program
2. ORNL Significant Event Award (2008; for ORNL DAAC system redesign project)
3. Department of Energy Mentor Award (2007; for outstanding mentoring of summer students)
4. National Science Foundation Graduate Fellow (1985-1988)
5. American Chemical Society Analytical Division Summer Fellow (1988)
6. Tomas Hirschfeld Fellowship (UW Center for Process Analytical Chemistry; 1985-1988)
7. Kedzie Award (top graduating Chemistry major at MSU; 1985)

Graduate and Postdoctoral Advisors

Graduate Advisor: Dr. Bruce Kowalski (University of Michigan)