Bruce Edwin Wilson

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EDUCATIONAL HISTORY

Ph.D. (Analytical Chemistry) University of Washington, Seattle (1988; Bruce Kowalski)
B.S. with High Honors (Chemistry and Mathematics) Michigan State University (1985)

PROFESSIONAL EXPERIENCE

Oak Ridge National Laboratory: 2006-present (Oak Ridge, TN):

Group Leader, Remote Sensing and Environmental Informatics (2018-present): Manager and principal investigator for 18-person, $6M/year group. Manager and principal investigator for the ORNL Distributed Active Archive Center for Biogeochemical Dynamics (ORNL DAAC), part of the NASA Earth Observing System.

Enterprise Architect (2012-2018): Lead technologist for enterprise information technology, particularly identity and credential management, authentication, authorization, cloud, analytics, mobile device management, and remote access.

Group Leader, Client and Collaboration Technologies (2010-2012): Manager for 40-person group responsible for 20,000 unclassified endpoints (Windows, Mac, Linux, iOS), all aspects of mobile and cellular devices, three Active Directories, LDAP, and systems engineering supporting $500M/year of R&D projects.

Group Leader, Environmental Data Science and Systems (2008–2010): Manager for 35-person, $8.5M/year group managing environmental data for multiple federal agencies. Manager and principal investigator for the ORNL DAAC.

Environmental Informatics Leader (2006-2008): Systems architect and computing technical leader for the ORNL DAAC. Cyberinfrastructure lead for the USA National Phenology Network (USA-NPN; https://www.usanpn.org) development.

University of Tennessee, Knoxville: 2007-present (Knoxville, TN):

Adjunct Professor, School of Information Sciences (2007-present): Serve on selected doctoral thesis committees, contribute to school and college development and recruiting.

DataONE Project (2007-2016): Leadership Team member for $4M/year NSF-funded Data Observation Network for Earth (DataONE; https://dataone.org) project for long-term preservation and community development for ecological data. Co-leader for cyberinfrastructure development (12 distributed developers).

DataONE Institutional Principal Investigator (2007-2011): Manage $800K/year budget and 3 staff members for UTK portion of the DataONE project.

The Dow Chemical Company: 2/01-6/06 (Midland MI):

Technical Leader, High Throughput Research Informatics Program: Technical lead for a $10M/year, 45-person team designing, implementing, and supporting informatics for high throughput research (HTR) at multiple sites.

Dow Corning Company: 2/00-2/01 (Midland MI):

Senior Specialist, Chemometrics & Data Fusion Group: Designed and led the development of an informatics system (4-person team) to handle multivariate analyzer data for a silicone sealant pilot plant operation.

Eastman Chemical Company: 10/88-12/99 (Kingsport TN):

11/97-12/99: Principal Research Chemist, Chemicals Research Division: Technical lead for 3-person Computational Chemistry team.

11/95-11/97: Principal Research Chemist, Research Information Technology Division: Responsible for Chemical Information Management for the entire company.

4/92-11/95: Senior Research Chemist, Polymers Research Division: Led two product concept development teams (first stage in commercialization process). Performed research in glass fiber reinforced composites.

10/88-4/92: Advanced Research Chemist, Physical & Analytical Chemistry Research Division: Research into exploratory data analysis for chemical process modeling, models for polyester reheat rate in soft drink bottle manufacture, and photophysics of a new polyester.

East Tennessee State University (Johnson City TN):
(Fall 1993) Adjunct Assistant Professor of Chemistry: Taught a graduate course in Quantum Chemistry, as a fill-in for a vacant faculty position.

AWARDS AND HONORS

Oak Ridge National Laboratory Significant Event Awards (2008, 2011, 2012, 2016)
Department of Energy Outstanding Mentor Award (2008)
National Science Foundation Graduate Fellow (1985-88)
American Chemical Society Analytical Division Summer Fellow (1988)
Tomas Hirschfeld Fellowship (UW Center for Process Analytical Chemistry; 1985-88)
Kedzie Award (top graduating Chemistry major at MSU)
Merck Award (top Chemistry GPA during Junior year)
Phi Beta Kappa (national liberal arts honor society)
Mortar Board (national service/honor society; treasurer of MSU chapter 1983-4)
National Merit Scholar

PROFESSIONAL ACTIVITIES

Board of Advisors, USA National Phenology Network (10/2007 – 10/2016)
Member, Association for Computing Machinery
Member, American Geophysical Union
Past Member, American Chemical Society (including Computers in Chemistry Division and Chemical Information Division). Served as a Public Relations chairperson for the Northeast Tennessee Section and helped the section win a national award for PR activities and an Outstanding Section Award.

OPEN LITERATURE PUBLICATIONS & PATENTS

BE Wilson and C. Cherry "Fiber reinforced resins with improved physical properties and process for producing same" *US Patent* #6,277,909 (2001)

JR Zoeller, CA Crooks and BE Wilson "Process for the conversion of carboxylic acids to ketones" *US Patent* #6,265,618 (2001)

BE Wilson and C. Cherry "Fiber reinforced resins with improved physical properties and process for producing same" *US Patent* #6,051,644 (1999)

HS Carman, DC Alsmeyer, CH Juarez-Garcia, AW Garrett, BE Wilson & VA Nicely, "Method for standardizing Raman spectrometers to obtain stable and transferable calibrations" *US Patent* #5,850,623 (1994)

Alyssa Rosemartin, Ellen Denny, Jake Weltzin, Lee Marsh, Bruce E Wilson, Hamed Mehdipoor, Raul Zurita-Milla Mark Schwartz "Lilac and Honeysuckle Phenology Data 1956–2014" *Scientific Data* vol 2 (2015) doi:10.1038/sdata.2015.38

Suresh K. Santhana Vannan, Robert B. Cook, Jerry Y. Pan, Bruce E. Wilson "A SOAP Web Service for accessing MODIS land product subsets" *Earth Science Informatics* vol 4#2 97-106 (2011) doi:10.1007/s12145-011-0079-2

Dali Wang, Wilfred M. Post, Bruce E. Wilson "Climate Change Modeling: Computational Opportunities and Challenges" *Computing in Science and Engineering* vol 13, 36-42 (2011) doi:10.1109/MCSE.2010.147

Jerry Pan, Christopher Lenhardt, Bruce Wilson, Giri Palanisamy, Robert Cook, Biva Shrestha "Geoscience data curation using a digital object model and open-source frameworks: Provenance applications" 2011 *IEEE International Geoscience and Remote Sensing Symposium* (2011) https://doi.org/10.1109/IGARSS.2011.6050062

Ranjeet Devarakonda, Giri Palanisamy, James M. Green, Bruce E. Wilson "Data sharing and retrieval using OAI-PMH" *Earth Science Informatics* vol 4#1 1-5 (2010) doi:10.1007/s12145-010-0073-0

Ranjeet Devarakonda, Giriprakash 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

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

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* (2009) doi:10.1038/npre.2009.3695.1

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

Julio L. Betancourt, Mark D. Schwartz, David D. Brashears, Carol A. Brewer, Gary Frazier, John E. Gross, Suzan J. Mazer, Bradley C. Reed, and Bruce E. Wilson "Evolving Plans for the USA National Phenology Network" *Eos Transactions of the AGU* **88**(19) 211 (2007) https://doi.org/10.1029/2007EO190007

Mark A. Parsons & Bruce E. Wilson “User-Driven Design of a Data System for the International Polar Year” *Eos Transactions of the AGU* **88**(8) 98 (2007) https://doi.org/10.1029/2007EO080010

Thomas H. Kalantar, Christopher J. Tucker, Andrew S. Zalusky, Thiomas A. Boomgaard, Bruce E. Wilson, Mladen Ladika, Susan L. Jordan, Wen K. Li, Xin Zhang, Chin G. Goh, “High Throughput Workflow for Coacervate Formation Characterization in Shampoo” *Journal of Cosmetics Science* 2007 Jul-Aug; **58**(4) 375-83 *link to article*

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” *Macromolecular Rapid Communications* (2004) **25**(1), 119–126 doi:10.1002/marc.200300160

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

Alan S. Jones, Todd J. Dickson, Bruce E. Wilson, Jean Duhamel & Mitchell A. Winnik "Fluorescence properties of PEN and PET/PEN copolymers" *Polymer. Preprints (American Chemical Society, Division of Polymer Chemistry)* (1996) **37**(1) 229-30 *no link to article known*

Bruce E. Wilson & Bruce R. Kowalski "Quantitative analysis in the presence of spectral interferents using second-order nonbilinear data" *Analytical Chemistry* (1989), **61**(20) 2277-84 doi:10.1021/ac00195a013

Bruce E. Wilson, Walter Linberg & Bruce R. Kowalski "Multicomponent quantitative analysis using second-order nonbilinear data: theory and simulations" *Journal of the American Chemical Society* (1989) **111**(11) 3797-804 doi:10.1021/ja00193a006

Bruce E. Wilson, Eugenio Sanchez & Bruce R. Kowalski "An improved algorithm for the generalized rank annihilation method" *Journal of Chemometrics* (1989) **3**(3) 493-8 doi:10.1002/cem.1180030306

L. Scott Ramos, Kenneth R. Beebe, W. Patrick Carey, Eugenio Sanchez, Bryce C. Erickson, Bruce E. Wilson, Lawrence E. Wangen, and Bruce R. Kowalski "Chemometrics" *Analytical Chemistry* (1986) **58**(5) 294R-315R doi:10.1021/ac00296a020

Bruce E. Wilson, Jin Wu Chai & Christie G. Enke "Ion trajectory modeling in time-dependent potential fields: application to RF-only quadrupoles" *Computers in Chemistry* (1986) **10**(1) 15-19 doi:10.1016/0097-8485(86)85004-5

Also lead author on over 75 internal corporate technical reports and contributor to approximately 50 additional internal corporate technical reports.