

Melanie Szulczewski

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Education

Ph.D. Soil Science	University of Wisconsin-Madison - 1999 Concentration: Soil chemistry Minor: Chemistry
M.S. Soil Science	University of Wisconsin-Madison - 1996
B.A. Chemistry and French	Cornell University , Ithaca, New York - 1993 Université de Paris - Semester in Paris, France – 1992

Professional Experience

Environmental Science Associate Professor, University of Mary Washington, *August 2008-present*

- Collaborated on post-mining land reclamation research as a Fulbright Fellow at the University of Agriculture in Krakow (Poland) for the Spring 2016 semester
- Recognized as the UMW Outstanding Young Faculty of the Year for 2012-2013
- Plan, develop, and realize the curriculum for several courses for environmental science majors, including Environmental Regulations Compliance, Pollution Prevention, Global Environmental Problems, and Environmental Geochemistry (with a laboratory component)
- Develop and direct field-based and study abroad courses such as Sustainability Issues in South Africa, Sustainability in the Galapagos, and Everglades Environmental Exploration
- Conduct comprehensive research on the soils and surrounding ecosystem of a contaminated acid-mine drainage site in Virginia
- Established and monitor a long-term stream ecosystem restoration assessment research project after winning a \$40,000 grant from the United States Army Corps of Engineers
- Develop and execute undergraduate research projects, including with the Summer Science Institute, and present results at regional and national conferences with my students
- Provide undergraduate and K12 teaching workshops in national and regional forums as well as being active in the scholarship of teaching and learning
- Won >\$15,000 in grants for undergraduate research on local environmental problems
- Contribute actively on the Soil Science Society of America's K-12 Education Committee
- Co-organized a radical environmentalism interdisciplinary conference at UMW in 2010
- Participated with students in SENCER's DC Symposium and Capitol Hill Poster sessions
- Serve as the faculty chair of the active President's Council on Sustainability
- Serve as a board member for the international reforestation organization ABIOGeT
- Serve as a representative on the UMW's Institutional Review Board (IRB)
- Serve as advisor for the Ecology Club, Green Living-Learning Floor, undergraduates

Scientific Consultant, Solar Household Energy (SHE), Inc., *December 2004-2012*

- Advised a nongovernmental organization on environmental, scientific, and technical issues of applying solar cooking technology to developing countries with the goals of reducing greenhouse gas emissions, deforestation, respiratory illness, and soil erosion
- Performed research on the technical aspects of a new solar cooker
- Acted as the project coordinator for a community solar cooking program in Cameroon

Natural Sciences Assistant Professor (Term), George Mason University, *August 2004-2008*
 Co-Director, Zoo & Aquarium Leadership Masters (MAIS) Program, *August 2007-2008*
 Director of Science Summer Enrichment Camps, *March 2005-2008*

- Planned, developed, and realized the curriculum for several courses for conservation science majors and graduate students, such as Energy and the Environment, Conservation Biology, and Conserving Endangered Species
- Planned, developed, and realized the curriculum, with the goal of scientific literacy for non-science majors, for several courses, including embedded experiential learning, such as Science in the News; Science, Society and Cinema; The Chesapeake Bay; Teaching in the Sciences; Costa Rica Ecosystems, Conservation, and Community
- Advised master's students in the Zoo and Aquarium Leadership Program as well as guided adjunct faculty's curriculum/syllabus development for program courses
- Guided and updated the department's First Year Experience as an integrated whole, as well as developed and taught the science section, incorporating 150 students a year
- Guided independent studies, reviewed graduation portfolios, and led experiential field trips in the application of the scholarship of teaching and learning
- Served on the Faculty Senate's Green Education and Effective Teaching Committees
- Served on the GMU Earth Week and the NCC Admissions and Recruitment committees
- Participated and presented in Sustainability in the Curriculum and Technology across the Curriculum faculty development workshops
- Directed the science Summer Enrichment Camps for elementary and middle school students, exposing children to environmental and other scientific issues in dynamic ways

Agroforestry and Environmental Extension Volunteer, Peace Corps Cameroon, *2002-2003*

- Taught soils/environmental science classes at the Maroua Regional Agricultural College
- Developed and implemented research projects and practical short courses for extension agents and visiting graduate students on natural resource management at a research center
- Advised 14 university students conducting environmental research projects
- Acted as scientific advisor for the NGO APELD (Association pour la Protection de l'Environnement et la Lutte contre la Désertification) to conduct forums and seminars, develop conservation and restoration projects, organize annual events, and interact with citizens, encouraging environmental awareness, urban beautification, and reforestation
- Cooperated with and advised many government agencies, research institutes, and ministries in the application of scientific and environmental policy

Soil Scientist, University of Florida Tropical Research and Education Center, *2001-2002*

- Designed, developed, and initiated research investigating carbon and nitrogen mineralization rates in composted sewage sludge applied to farmland soils
- Collaborated with UF-Gainesville to undertake and publish a state-wide study to determine arsenic and lead levels in urban soils with accompanying GIS analysis
- Cooperated with local farmers, the USDA, and government extension agents to improve agricultural sustainability and environmental health in the Everglades region
- Wrote scientific reports and updates for local, regional, and national agencies
- Volunteered as an environmental scientist with the American Littoral Society to restore the native coastal strand ecosystem by removing exotics, supervising volunteer student groups

Adjunct Professor, Miami-Dade Community College, *2002*

- Taught an introductory environmental science course to a culturally diverse class
- Planned, developed, and realized the class curriculum, including a trip to the Everglades

Soil Scientist/Chemist, USDA Agricultural Research Service, *1999-2001*

- Assessed local environmental problems and proposed research projects to address underlying causes or potential solutions to selected South Florida issues
- Developed, presented, and published a procedure to investigate the chemical behavior of phosphorus in Everglades soils for future use by research and regulatory agencies
- Collaborated with scientists at the University of Florida, the USDA Pesticide Residue Laboratory, the US Army Corps of Engineers, the USGS, and other agencies

Research Assistant, Department of Soil Science, University of Wisconsin-Madison, *1993-1999*

- Conducted and published research on the mineralogy, behavior, mobility, and solubility of chromium, iron, manganese, and sulfur in contaminated soils
- Investigated, developed, and recommended remediation methods for contaminated Superfund industrial sites in cooperation with representatives from the DNR and EPA
- Initiated the S.O.S. (Save Our Soils) Project, which provided students with hands-on experience through the sampling, testing, and evaluating of lawn and garden soils

Honors, Grants, and Awards

- Fulbright Fellowship (University of Agriculture in Krakow, Poland), *2016*
- Outstanding Young Faculty Award, UMW, *2013*
- Certificate of Merit, Division of Environmental Chemistry of the American Chemical Society, *August 2012*
- Army Corps of Engineers Research Grant, *Fall 2011 – present*
- UMW Office of Distance and Blended Learning Course Development Grant, *Spring 2011*
- UMW Undergraduate Research Grants, *Spring 2010, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013, Fall 2013, Spring 2014*
- UMW Summer Science Institute Awards, *2009, 2010, 2012, 2013, 2015*
- UMW Supplemental Faculty Development Awards, *2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015*

Other Qualifications

- Professional Associations
 - Soil Science Society of America
 - Geological Society of America
 - American Chemical Society
 - Ecological Society of America
 - Union of Concerned Scientists
 - SENCER (Science Education for New Civic Engagements and Responsibilities)
- Foreign Languages Skills
 - French (fluent)
 - West African Fulfulde, Spanish, and Polish (basic)

Publications

- Likus–Cieřlik, J., M. Pietrzykowski, M. Szostak, and M. Szulczewski. 2017. Spatial distribution of soil sulfur contamination on a reclaimed sulfur mine site (Southern Poland). *Environmental Monitoring and Assessment*. 189: 1-12.
- Szulczewski, M. “Sustainability and the Middle Class.” In *The American Middle Class: An Economic Encyclopedia of Progress and Poverty*, Ed. Robert Rycroft. Westport, Connecticut: Greenwood Publishing, 2017.
- Szulczewski, M. 2015. “Soil’s Social and Cultural Connections.” *Soil Horizons*. 56. Online.
- Szulczewski, M., M. Liesch, J. Havlin, and D. Lindbo. “Soils and Society.” In *Know Soil, Know Life*, Eds. D. Lindbo, D. Kozłowski, and C. Robinson. Madison, Wisconsin: Soil Science Society of America, 2012.
- Szulczewski, M. “Experiments with Ultraviolet Radiation and the Greenhouse Effect.” Teaching Geochemistry Resources. In the *On the Cutting Edge Peer Reviewed Teaching Activities Collection*, 2010. See serc.carleton.edu/NAGTWorkshops/geochemistry/activities/46924
- Szulczewski, M. “One Professor in a Classroom.” In *Thoreau’s Legacy: American Stories about Global Warming*, Ed. Richard Hayes. Cambridge, Massachusetts: Union of Concerned Scientists and Penguin Classics, 2009.
- Chirenje T., L.Q. Ma, M. Reeves, and M. Szulczewski. 2004. Lead distribution in near-surface soils of two Florida cities: Gainesville and Miami. *Geoderma*. 119:113-120.
- Chirenje T., L.Q. Ma, M. Szulczewski, R. Littell, K. M. Portier, and E. Zillioux. 2003. Arsenic distribution in Florida urban soils: Comparison between Gainesville and Miami. *Journal of Environmental Quality*. 32:109-119.
- Szulczewski, M.D., P.A. Helmke, and W.F. Bleam. 2001. XANES spectroscopy studies of Cr(VI) reduction by thiols in organosulfur compounds and humic substances. *Environmental Science & Technology*. 35: 1134-1141.
- Szulczewski, M.D., P.A. Helmke, and W.F. Bleam. 1997. Comparison of XANES analyses and extractions to determine chromium speciation in contaminated soils. *Environmental Science & Technology*. 31: 2954-2959.

Presentations (* indicates student co-presenter)

- “Survey of Legacy and Other Contaminants in Soils and Waters of Central Virginia Golf Courses and Public Places,” by Melanie Szulczewski, Abby Friedman*, Sarah Jordan*, and Allison Burgess*, presented at the southeastern regional Geological Society of America (GSA) Conference, in Knoxville, Tennessee, April 2018.
- “How to Best Protect Wild Rhinos in South Africa,” by Melanie Szulczewski, presented at the 14th Annual Conference of the International Association for the Study of Environment, Space, and Place, with the theme of Wild Places/Natural Spaces, held in 2018 in Fredericksburg, Virginia.

- “Evaluation of Soil and Forest Reclamation at a Reclaimed Polish Sulfur Mine Site,” by Melanie Szulczewski, Justyna Likus–Cieślík, Marcin Pietrzykowski, and Marta Szostak, presented at the national Soil Science Society of America (SSSA) Conference, in Phoenix, Arizona, November 2016.
- “Analysis of the Phytoremediation Potential of a Chrysopogon Grass and Pteris Fern in Virginia Soils Affected By Acid Mine Drainage,” by Melanie Szulczewski and Maura Slocum*, presented at the national Soil Science Society of America (SSSA) Conference, in Phoenix, Arizona, November 2016.
- “Spatial distribution of soil sulfur contamination on a reclaimed sulfur mine site (Southern Poland),” by Justyna Likus–Cieślík, Marcin Pietrzykowski, Marta Szostak, and Melanie Szulczewski, presented at the Reforestation Challenges Second International Conference, in Krakow, Poland, June 2016.
- “Initial investigation into the use of phytoremediation to address legacy pollution at a Virginia site affected by acid mine drainage,” by Melanie Szulczewski, Maura Slocum*, and Taylor McConnell*, presented at the national Soil Science Society of America (SSSA) Conference, in Minneapolis, Minnesota, November 2015.
- “The International Year of Soils: December celebrates soils, culture, and people,” by Melanie Szulczewski, invited presentation at the national Soil Science Society of America (SSSA) Conference, in Minneapolis, Minnesota, November 2015.
- “Influences of soils on culture and society: Celebrating 2015 the International Year of Soils,” by Melanie Szulczewski, invited presentation at the national Ecological Society of America (ESA) Conference, in Baltimore, Maryland, August 2015.
- “Further analysis of the distribution and fractionation of trace metals in relation to other soil properties along a stream impacted by acid mine drainage,” by Melanie Szulczewski, Teresa Fenn*, and Megan Wagner*, presented at the national Soil Science Society of America (SSSA) Conference, in Long Beach, California, November 2014.
- “Study of the Distribution and Interaction of Heavy Metals, Sulfur, and Organic Matter throughout the Soil Profile in an Acid Mine Drainage-Impacted Ecosystem,” by Melanie Szulczewski, Teresa Fenn*, Susanna Kirschner*, and Jenna Stockton*, presented at the Southeastern Regional Geological Society of America Conference, in Blacksburg, Virginia, April 2014.
- “Analysis of Trace Metal Distribution throughout the Soil Profile in an Acid Mine Drainage-Impacted Ecosystem,” by Melanie Szulczewski, Teresa Fenn*, Susanna Kirschner*, and Jenna Stockton*, presented at the international Soil Science Society of America (SSSA) Conference, in Tampa, Florida, November 2013.
- “One Hundred Years of Contamination: Impacts of Acid Mine Drainage on a Virginia Ecosystem,” an invited talk by Melanie Szulczewski, presented at the Geological Society of Washington Monthly Meeting, November 2012.

- “Fractionation of Metal Contaminants in Acid Mine Drainage-Impacted Soil and the Effects on the Surrounding Ecosystem,” by Melanie Szulczewski, Susanna Kirschner*, and Jenna Stockton*, presented at the international Soil Science Society of America (SSSA) Conference, in Cincinnati, Ohio, October 2012.
- “Examination of the Diverse Environmental Impacts of Long-Term Acid Mine Drainage on a Virginia Stream Ecosystem,” by Melanie Szulczewski, presented at the National American Chemical Society (ACS) Conference, in Philadelphia, Pennsylvania, August 2012.
- “Designing from Values: Online Learning in the Liberal Arts & Sciences Tradition” a presentation and panel by Steve Greenlaw, Jim Groom, Martha Burtis, Melanie Szulczewski, Teresa Coffman, Jane Huffman, Dave McEwen, Marjorie Och, Alan Heffner, and Donald Rallis at the UMW Faculty Academy on Teaching and Learning Technologies, May 2012.
- “Continuing Acid Mine Drainage Impacts on the Environmental Health of the Soils, Streams, and Macroinvertebrates in a Virginia Ecosystem,” by Melanie Szulczewski, Marianne Mannix*, and Mina Recta*, presented at the international Soil Science Society of America (SSSA) Conference, in San Antonio, Texas, October 2011.
- “Role-Playing to Illustrate the Application of Environmental Chemistry and Geology Concepts,” an invited teaching workshop led by Melanie Szulczewski at the 12th Annual Conference on Case Study Teaching in Science in Buffalo, New York, September 2011.
- “‘How Can We Bring What’s Happening Over THERE Over HERE?’ – Global Engagement, Curriculum Development, and Digital Resources,” a presentation and panel by Sue Fernsebner (History), Melanie Szulczewski, Jeremy LaRochelle (Spanish), Surupa Gupta (Political Science), and Joseph Calpin* (DoIT and student), presented at the UMW Faculty Academy on Teaching and Learning Technologies, May 2011.
- “Students as Agents of Change: Student Environmental Activism at the University of Mary Washington” by Graham Givens*, Tori Wong*, and Melanie Szulczewski, presented at the National Center for Science and Civic Engagement’s Washington Symposium and Capitol Hill Poster Session, April 2011.
- “Acid Mine Drainage Effects on Sediments and Surrounding Soils of Contrary Creek, Virginia,” by Isabel Moore*, Robin Ayers*, and Melanie Szulczewski, at the Southeastern Regional Geological Society of America Conference, in Wilmington, North Carolina, March 2011.
- “Implications of Contrary Creek, Virginia, Acid Mine Drainage on Surrounding Soils and Macroinvertebrate Populations” by Melanie Szulczewski, Isabel Moore*, and Carly Byers*, presented at the international Soil Science Society of America (SSSA) Conference in Long Beach, CA, November 2010.
- “The Soil Science Society's K12 Committee's Foray into Popular Media” by David Lindbo, Melanie Szulczewski, and the SSSA K12 Committee, presented at the international Soil Science Society of America (SSSA) Conference in Long Beach, CA, November 2010.
- “Wake Up!: Blogs as a Tool to Encourage Students to Progress from Learning to Acting” by Melanie Szulczewski, presented at the UMW Faculty Academy, May 2010.

- “Sustainability Initiatives at UMW: Combining Environmental Science and Citizen Responsibility” by Melanie Szulczewski, A. Wilkins*, N. Delano*, and J. Wilson, presented at the National Center for Science and Civic Engagement’s Washington Symposium and Capitol Hill Poster Session, April 2010.
- “Practices, Perceptions, and Exposure of Citizens Regarding Hazardous Household Wastes,” by Melanie Szulczewski, Caitlin Paris Huxtable*, and Tevin Cheney*, presented at the Twenty-Fifth International Conference on Solid Waste Technology and Management, in Philadelphia, March 2010.
- “Film as a Powerful Tool to Integrate Interdisciplinary Knowledge in the Classroom,” an invited teaching workshop led by Melanie Szulczewski at the Annual Association for Integrative Studies Conference 2007. Tempe, Arizona.
- “Smithsonian Mason Semester: George Mason University in partnership with the Smithsonian National Zoo.” Poster presentation. Wood, T., M. Szulczewski, C. Parsons, B. Brown, A. Fuentes, J. Sevin, and F. Dallmeier. SENCER Summer Institute 2007. Portland, Maine.
- “Solar Cooking in Developing Countries.” Presentation at the Green Festival 2007. With Solar Household Energy. Washington, D.C.

Courses Taught at UMW (* indicates a new course that I developed)

- Introduction to Environmental Science I and *II with Laboratory (EESC 110 and 120)
- Environmental Regulations Compliance (EESC 330)
- Pollution Prevention Planning (EESC 326)
- Environmental Geochemistry with *Laboratory (EESC 325/ GEOL 325)
- *Global Environmental Problems (EESC 230)
- *Scientific Controversies in the Media (FSEM 100D5 and HONR 100D)
- *Everglades Environmental Exploration (EESC 360A/ GEOL 360A)
- *Sustainability Issues in South Africa (study abroad) (EESC 421Q/ GEOL 421S)
- *Sustainability in the Galapagos (includes study abroad) (EESC 360B/ GEOL 360B)
- Undergraduate Research in Chemistry (URES 197)
- Readings in Environmental Science (EESC 481)
- Special Problems (undergraduate research) (EESC 491)
- Honors Research (EESC 493)
- Internship (EESC 499)
- Study Abroad Review (SAGE 000)

Courses Taught at George Mason University (* indicates a new course that I developed)

- NCLC 120 The Natural World
- *NCLC 220 Energy and the Environment
- *NCLC 301 Science in the News
- *NCLC 375 Teaching and Learning in the Sciences
- *NCLC 395 Science in Action
- *NCLC 375 Science, Society & Cinema
- *NCLC 395 Biology of the Chesapeake Bay

University Service at UMW

- UMW President's Council on Sustainability, Co-chair and member, *Fall 2009 - present*
- UMW Teaching Center Advisory Committee, *Fall 2012 - 2015*
- UMW Institutional Review Board Member, *Fall 2013 - present*
- UMW Ecology Club, Faculty Advisor, *Spring 2011 - present*
- UMW Freshmen Seminar Curriculum Committee, *Fall 2010 - Spring 2012*
- UMW Steering Committee Sustainability Discussion Group, Co-chair, *Spring 2009*