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### Key Qualifications

Ms. Polaczyk has been a research associate with Warren Pinnacle Consulting Inc. since 2010 with a focus on refining and applying the SLAMM computer model as well as supporting bioaccumulation modeling projects. She brings a diverse background in environmental science and several years of experience in model development to the Warren Pinnacle team.

### Education

Morehead State University	B.S. 1999	Morehead, KY
University of Cincinnati	M.S. 2002	Cincinnati, OH
University of North Carolina - Charlotte	PhD 2010	Charlotte, NC

### Relevant Professional Experience

2010-Present	Research Associate, <b>Warren Pinnacle Consulting, Inc.</b>
2006-2010	Teaching and Research Assistant, <b>University of North Carolina –Charlotte</b> , James E. Amburgey, Advisor, Charlotte, NC. Created a logical-control driven model of a real-world drinking water distribution system using EPANET and used this model to determine alternative operational control scenarios that had the highest potential to reduce the retention time of water in the system. Developed novel applications in EPANET MSX to simulate water age and quantify the effects of physical network features on water age. Completed a statistical comparison of theories to calculate zeta potential from electrophoretic mobility measurements. Conducted a Meta-Analysis of Cryptosporidium removal data by conventional drinking water treatment processes
2003-2005	Environmental Scientist, <b>Centers for Disease Control and Prevention, National Center for Infectious Disease</b> , Atlanta, GA. Part of a research team developing concentration methods for isolating multiple organisms from large volumes of drinking water. Independently studied to efficiency of charged membrane filters to recover microorganisms from tap water.
2001-2003	Teaching and Research Assistant, <b>University of Cincinnati</b> , Daniel B. Oerther, Advisor, Cincinnati, OH. Performed initial studies on a miniaturized culture system for rapid detection of bacteria. Assisted the development of precursor-RNA targeted Fluorescence in situ Hybridization probes for drinking water analysis.
2000-2001	Research Grantee, <b>United States Environmental Protection Agency, Office of Research and Development</b> , Cincinnati, OH. Collected and analyzed air and sediment samples at a US EPA Superfund site. Responsible for laboratory inventory, development of standard operating procedures, writing and reviewing quality assurance project plans.

### Computer Experience

Proficiency with EPANET, MATLAB, SAS, Microsoft Excel, and C programming.

## Relevant Coursework

Advanced Hydraulics, Water Quality Modeling, Groundwater Resources Engineering, Ecological Engineering, Aquatic Entomology, and Limnology.

## Language Skills

Fluent in French and Italian, basic proficiency in Brazilian Portuguese.

## Publications

- Hill, V.R.; A.L. Polaczyk, A.M. Kahler, T.L. Cromeans, D. Hahn, and J.E. Amburgey (2009) "Comparison of Hollow-Fiber Ultrafiltration to the USEPA VIRADEL Technique and USEPA Method 1623" *Journal of Environmental Quality* 38 822–825
- Polaczyk, A.L.; J. Narayanan, T.L. Cromeans, D. Hahn, J.M. Roberts, J.E. Amburgey, and V.R. Hill. (2008) "Ultrafiltration-based techniques for rapid and simultaneous concentration of multiple microbe classes from 100-L tap water samples" *Journal of Microbiological Methods* 73 92–99
- Polaczyk, A.L.; V.R. Hill, and J.M. Roberts. (2007) "Evaluation of 1MDS Electropositive Microfilters for Simultaneous Recovery of Multiple Microbe Classes from Tap Water." *Journal of Microbiological Methods* 68 260-266
- Jing, G.; A. Polaczyk, D.B. Oerther, I. Papautsky.(2007) "Development of a Microfluidic Biosensor for Detection of Environmental Mycobacteria" *Sensors and Actuators B – Chemical* 123 (1) 614–621
- Polaczyk, A.; V. Hill, J. Amburgey. (2007) "Simultaneous Recovery of Diverse Microbes from Tap Water Using Hollow-Fiber Ultrafiltration." *Proceedings of the 2007 AWWA Water Quality Technology Conference* November 2007, Charlotte, NC
- Amburgey, J.E.; V.R. Hill, A.L. Polaczyk, M.J. Arrowood. (2007) "Removal of Multiple Microorganisms under Varying Coagulation Conditions in a Pilot-Plant." *Proceedings of the 2007 AWWA Water Quality Technology Conference* November 2007, Charlotte, NC
- Hill, V.; B. Newton, T. Cromeans, A. Polaczyk, D. Hahn, A. Kahler, and R. Meyer. (2006) "A New Filtration Technique For Recovering Biothreat Agents From Drinking Water." *Proceedings of the American Society for Microbiology Biodefense Research Meeting*. February 2006, Washington, D.C.
- Hill V.R.; B.R. Newton, A.L. Polaczyk, T.L. Cromeans, J. Narayanan, D. Hahn, J.E. Amburgey, and R.F. Meyer (2006) "Hollow Fiber Ultrafiltration for Rapid and Simultaneous Concentration of Biothreat Agents in Drinking Water." *Proceedings of the American Water Works Association's International Symposium on Waterborne Pathogens* March 2006, Atlanta, GA
- Amburgey, J.E.; V.R. Hill, A.L. Polaczyk, N.C. Spivey, M.J. Arrowood (2006) "Multiple Microorganism Removals Under Varying Coagulation Conditions in a Pilot-Scale Drinking Water Treatment Plant." *Proceedings of the American Water Works Association's International Symposium on Waterborne Pathogens* March 2006, Atlanta, GA
- Polaczyk, A.; B. Kinkle, I. Papautsky, D.B. Oerther. (2006) "Culture-Based BioMEMS Device to Track *Gordonia* in Activated Sludge" *Environmental Science and Technology* 40 (7) 2269-2274
- A. Polaczyk and V. Hill. (2005) "Simultaneous Recovery of Bacteria, Viruses, and Parasites from Drinking Water Using Electropositive Microfilters." *Proceedings of the 105th American Society for Microbiology General Meeting* June 2005, Atlanta, GA

- Hill V.R., A.L. Polaczyk, T.L. Cromeans, J. Narayanan, D. Hahn, J.M. Roberts, and J.E. Amburgey. (2005) "Rapid Procedures for Concentrating and Detecting Bio-Threat Agents in Drinking Water." American Society for Microbiology Biodefense Conference March 2005, Baltimore, MD
- Hill, V.R.; A.L. Polaczyk, D. Hahn, J. Narayanan, T.L. Cromeans, J.M. Roberts, and J.E. Amburgey. (2005) "Development of a Rapid Method for Simultaneously Recovering Microbes in Drinking Water Using Ultrafiltration with Sodium Polyphosphate and Surfactants" Applied and Environmental Microbiology 71 (11) 6878-6884
- This publication was awarded the James H. Nakano Citation for outstanding paper published in 2005 by the National Centers for Infectious Disease of the Centers for Disease Control and Prevention, Atlanta, Georgia.*
- Jing, G.; H.B. Eluru, A. Polaczyk, B. Kinkle, D. Mast, D.B. Oerther, I. Papautsky.(2005) "Paraffin Surfaces for Culture-Based Detection of Mycobacteria in Environmental Samples" Journal of Micromechanics and Microengineering 15(2) 270-276
- Hill, V.R.; A. Polaczyk, D. Hahn, J. Naryanan, J. Amburgey. (2004) "Toward a Rapid and Efficient Method for Simultaneous Microbe Recovery in Drinking Water Using Ultrafiltration with Chemical Dispersants and Surfactants." Proceedings of the 104th American Society for Microbiology General Meeting May 2004, New Orleans, LA
- Jing, G.; G. Hollis, A. Polaczyk, H.B. Eluru, B. Kinkle, D. Mast, D.B. Oerther. (2004) "Developing Rapid Detection of Mycobacteria Using Microwaves" The Analyst 129 (10) 963-9
- Oerther, D.B.; P.G Stroot, A. Polaczyk, Y. Chen. (2003) "Using Ribosome Genesis as a Sensitive Indicator of Microbial Viability to Test Disinfection Efficacy." Proceedings of the 2003 AWWA Water Quality Technology Conference November 2003, Philadelphia, PA
- Polaczyk, A.L.; H. Bindu, I. Papautsky, B. Kinkle, D.B. Oerther. (2003) "Miniaturized Culturing Devices to Screen for Mycolata in Environmental Samples." Proceedings of the 225th American Chemical Society National Meeting March 2003, New Orleans, LA
- Polaczyk, A.L.; H. Bindu, I. Papautsky, B. Kinkle, D.B. Oerther. (2003) "Culture-Based BioMEMS for the Rapid Detection of Mycolata." Proceedings of the American Society for Microbiology Biodefense Research Meeting March 2003, Baltimore, MD
- Polaczyk, A.L.; R.K. Chhabra, H. Bindu, I. Papautsky, B. Kinkle, D.B. Oerther. (2002) "Development of Culture-Based Biological Micro-Electro-Mechanical Systems (BioMEMS) for Measuring Nocardioforms in Wastewater Treatment." Proceedings WEFTEC October 2002, Chicago, IL
- Polaczyk, A.L.; D.B. Oerther. (2002) "Using Molecular Methods to Overcome the Pitfalls of Culture-Based Pathogen Detection." Proceedings Ohio Water Environment Association June 2002, Columbus, OH
- Polaczyk, A.L.; R.K. Chhabra, H. Bindu, I. Papautsky, B. Kinkle, D.B. Oerther. (2002) "Culturing via BioMEMS Strikes Back in the Epic Saga between Cultivation and Molecular Methods." Proceedings of the 102nd American Society for Microbiology General Meeting May 2002, Salt Lake City, UT
- Barth, E.; B. Sass, A. Polaczyk, R. Landy. (2001) "Evaluation of Risk from Using Poultry Litter to Remediate and Reuse Contaminated Estuarine Sediments" Remediation Journal 11 (4) 35-45
- Pass T.; R. Wright, L. Hawkins, A. Polaczyk, B. Reeder. (2000) "Assessment of Fecal Coliform Contamination and Physical Parameters within the Licking River Watershed." Kentucky Nonpoint Source Conference, May 2000 Bowling Green, KY