

**Diane K. Walker**  
dianew@montana.edu  
Montana State University - Center for Biofilm Engineering  
305 Barnard Hall  
Bozeman, MT 59717

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**EDUCATION:**

**Montana State University, Bozeman, MT**

- Master of Science, 2004  
Environmental Engineering
- Bachelor of Science, 1998  
*Major:* Civil Engineering/Bio-Resources Engineering Option  
*Minor:* Modern Languages – Spanish
- Bachelor of Science, 1991  
Biological Sciences

**Orange County Community College, Middletown, NY**

- Associate of Science, 1989  
Liberal Arts: Natural Science/Math Emphasis  
Graduated with Honors

**EXPERIENCE:**

**Research Engineer**, 2007-Present, Montana State University, Bozeman, MT  
Center for Biofilm Engineering, Montana State University, Bozeman, MT

- Develop research and testing projects in partnership with industry
- Prepare periodic progress reports for industry projects
- Supervise and mentor undergraduate students on industry projects
- Participate in technology transfer by coordinating workshop sessions to train industry, students and research staff on developed methods
- Quality Assurance Officer under EPA contract
- Laboratory manager

**Research Assistant III**, 2004-2007, Montana State University, Bozeman, MT  
Center for Biofilm Engineering, Montana State University, Bozeman, MT

- Conducted industry-sponsored research in disinfectant studies using the CDC, annular and static glass biofilm growth reactor systems
- Conducted government-sponsored research to develop staining methods for the extrapolymeric substances (EPS) component of a *Pseudomonas aeruginosa* biofilm
- Performed PCR analysis and gel electrophoresis to identify bacterial and fungal species
- Conducted biosafety training for new students and visiting researchers
- Conducted workshops for Industrial Associates in the basic operation of biofilm growth reactors
- Mentored students in research projects including those studies using the drip flow reactor and dental unit water lines

**Graduate Research Assistant**, January 1999-2004

Center for Biofilm Engineering, Montana State University, Bozeman, MT

- Conducted research on biofilm-induced changes in soil organic matter structure and the resulting impact on the bioavailability of sorbed 2,4,6-trinitrotoluene (TNT) and its amine metabolites
- Performed analyses including those for nitroaromatic and <sup>14</sup>C-TNT concentrations, organic carbon content, and microbial activity and density
- Supervised undergraduates in the design, preparation and safe execution of research projects, including data input, analysis and presentation of results

**Biofilm Systems Training Laboratory Intern**, November 1997-December 1998

Center for Biofilm Engineering, Montana State University, Bozeman, MT

- Developed standard laboratory methods for anaerobic experimentation
- Trained new interns, graduate students and industrial associates in anaerobic methods
- Performed laboratory experiments for field-relevant research and application related to oilfield souring
- Presented and discussed research findings at laboratory meetings

**PROFESSIONAL  
LICENSE &  
CERTIFICATION:**

- State of Montana Registered Engineer Intern (EI)
- Radiation Safety Training
- Hazardous Waste Operations & Emergency Response (HAZWOPER) 40-hour Certification Training, 1996; Refresher Training 1997, 1998 & 2004

**PUBLICATIONS:**

- L. Wahlen, A. Parker, **D. Walker**, M. Pasmore, P. Sturman. 2016. Predictive modeling for hot water inactivation of planktonic and biofilm-associated *Sphingomonas parapaucimobilis* to support hot water sanitization programs. *Biofouling*, 32(7): 751-761.
- B. Fritz, **D. Walker**, D. Goveia, A. Parker, D. Goeres. 2015. Evaluation of Petrifilm Aerobic Count plates as an equivalent alternative to drop plating on R2A agar plates in a biofilm disinfectant efficacy test. *Current Microbiology*, 70(3): 450-456.
- D. Goeres, M. Hamilton, N. Beck, K. Buckingham-Meyer, J. Hilyard, L. Leotterle, L. Lorenz, **D. Walker**, P. Stewart. 2009. A Method for Growing a Biofilm Under Low Shear at the Air-Liquid Interface Using the Drip Flow Biofilm Reactor. *Nature Protocols*, Vol. 4, No. 5. Pp. 783-788.
- N. Zilver, M. Hamilton, B. Pitts, D. Goeres, **D. Walker**, P. Sturman, J. Heersink. 1999. *Measuring Antimicrobial Affects on Biofilm Bacteria: From Laboratory to Field*. In R.J. Doyle, et al. Biofilms: Methods in Enzymology. Academic Press. San Diego, CA. Pp.608-628.

**PRESENTATIONS:**

- *Invited Speaker*: Society for Industrial Microbiology and Biotechnology Meeting, July/August 2017, Denver, CO, Presentation entitled “Biofilm studies of water systems including detection and testing for microbial control”
- *Session Chair*: Food Biofilms Session, Montana Biofilm Science & Technology Meeting, July 2017, Bozeman, MT
- Montana Biofilm Science & Technology Meeting, January 2017, Arlington, VA, Presentation entitled “Modifications to the CDC biofilm growth reactor method (ASTM E2562-12) for multi-kingdom biofilm studies”
- *Invited Speaker*: Recent Advances in Microbial Control, October 2016, San Diego, CA, Presentation entitled “Modifications to the CDC biofilm growth reactor method (ASTM E2562-12) for mixed species and *Legionella pneumophila* studies”
- *Invited Speaker*: International Association for Food Protection, July 2015, Portland, OR, Presentation entitled “Laboratory Techniques for Studying Biofilm”
- Montana Biofilm Science & Technology Meeting, July 2014, Montana State University, Co-Presentation entitled “Hot Water Disinfection of Planktonic and Biofilm Bacteria” with M. Pasmore of Baxter Healthcare Corporation
- Montana Biofilm Science & Technology Meeting, February 2010, Montana State University, Co-Presentation entitled “Review of HAI on Medical Devices” with E. deLancey-Pulcini
- Technical Advisory Committee Conference, July 2008, Montana State University, Presentation entitled “Methods of Assessing Biofilm Inhibition on Surfaces”
- Technical Advisory Committee Conference, July 2007, Montana State University, Presentation entitled “Methods of Assessing Efficacy of Antimicrobial Surfaces: A Review”
- Technical Advisory Committee Conference, July 2001, Montana State University, Presentation entitled “Biofilm-Induced Changes in Soil Organic Matter Structure and the Resulting Impact on the Bioavailability of Sorbed 2,4,6-Trinitrotoluene (TNT) and its Amine Metabolites”
- 3<sup>rd</sup> Place Student Paper/Presentation Competition, Engineering Biological Processes for Environmental Enhancement Conference, Fairmont Hot Springs, MT 1998
- Technical Advisory Committee Conference, July 2001, Montana State University, Presentation entitled “Controlling Microbial Souring of Oil: Laboratory Experiments”

## **WORKSHOP DEVELOPMENT & INSTRUCTION:**

- July 2017: Basic Biofilm Methods
- February 2017: DeLaval Biofilm Methods Training
- July 2016: The Scale of Biofilm Studies
- April 2016: 3M Basic Biofilm Workshop
- October 2015: Biofilm Methods Workshop, 7<sup>th</sup> ASM Conference on Biofilms, Chicago
- July 2015: Biofilm Methods for Your Lab
- July 2014: Single Tube Method and Treatment Flow Cell Workshop
- July 2013: Sani Marc Biofilm Methods Training
- July 2013: Assessing surface biofilm accumulation and removal efficacy using epifluorescence microscopy
- February 2012: Standardized Biofilm Methods Workshop
- February 2011: Standardized Biofilm Methods Workshop
- July 2010: Laboratory Biofilm Growth Reactors: *Choices for real-world applications*
- February 2010: Modifying Standardized Biofilm Methods: *A Workshop of Different Designs*
- November 2009: Standardized Biofilm Methods Workshop, 5<sup>th</sup> ASM Conference on Biofilms, Cancun, Mexico
- July 2009: Standardized Biofilm Methods Workshop: *How to grow, treat, sample & analyze biofilm*
- February 2009: Basic Biofilm Workshop
- July 2008: Microscopy of Biofilms Workshop
- February 2008: Basic Biofilm Workshop
- July 2007: Basic Biofilm Workshop
- February 2007: Basic Biofilm Workshop
- June 2006: Biofilm FISH
- May 2006: NASA Basic Biofilm Research
- April 2006: Expanding Your Horizons: Science for Middle School Girls
- February 2006: Basic Biofilm Workshop
- January 2006: GE Basic Biofilm Research
- November 2005: Biosafety Training
- July 2005: Johnson & Johnson Basic Biofilm Research, Skillman, NJ
- July 2005: Basic Biofilm Workshop
- June 2005: Biosafety Training
- May 2005: Biosafety Training
- February 2005: Basic Biofilm Workshop

## **MEMBERSHIP:**

- **International Association for Food Protection (IAFP)** since 2015

## **AWARDS & SCHOLARSHIPS:**

- 2015 CBE Outstanding Researcher Award
- Gas Processors Association Scholarship, 1999, Montana State University
- Outstanding Achievement Award, 1990, Residence Hall Association, Montana State University
- Academic Excellence Award, 1989, Orange County Community College, NY
- Dr. Cortland R. Mapes Biology Scholarship, 1989, Orange County Community College, NY

## **ACTIVITIES:**

- **Volunteer**, 2013, National Trails Day, Yellowstone National Park, WY
- **Volunteer**, 2011, Montana Special Olympics, Bozeman, MT
- **Volunteer**, 1997, Museum of the Rockies, Bozeman, MT
- **President**, 1990; **Social Chair**, 1989-1990, Residence Hall Association, Montana State University

## **STUDY ABROAD:**

- **January Term Intensive Language Course**, 1996, Center for Cross-Cultural Study, Seville, Spain