Jeanne M. VanBriesen

Director, Water QUEST (Water Quality in Urban Environmental Systems) Center

Professor
Department of Civil and Environmental Engineering
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Education

Ph.D. Civil (Environmental) Engineering, Northwestern University (1998)
M.S. Civil (Environmental) Engineering, Northwestern University (1993)
B.S. Education (Chemistry), Northwestern University (1990)

Professional Experience

Carnegie Mellon University	*Pittsburgh, PA*
Director, Water QUEST Center	7/05 to present
Professor	7/08- present
Associate Professor	7/05 to 7/08
Assistant Professor	7/99 to 7/05
Northwestern University	Evanston, IL
Visiting Assistant Professor (9 month term)	9/98 – 6/99
Department of Energy, Center for Risk Excellence	Argonne, IL
Environmental Engineering Intern. GS-11.	6/98 - 8/98
Evanston Township High School	Evanston, IL
Science Teacher (physics and chemistry)	9/91 – 6/92
Waverly Junior-Senior High School	Waverly, NY
Chemistry Teacher	9/90 – 8/91

Awards

- Achievement Rewards for College Scientists (ARCS) Foundation annual merit award and summer research stipend, 1993-1998.
- National Science Foundation Career Award, 2001.
- George Tallmann Ladd Award for outstanding research and professional accomplishments and potential, College of Engineering, Carnegie Mellon University, 2001-2002.
- Paul Christiano (E 1964, 1965, 1968) and Norene Christiano (MM 1964, 1971) Faculty Fellowship; Carnegie Mellon University, 2005-2006.
- Pennsylvania Water Environment Association Professional Research Award. 2007.
- Selected Participant Indo-U.S. Frontiers of Engineering Symposium, Infrastructure, 2008.

Professional Service

- National Research Council Committee on Water Quality in Southwestern Pennsylvania (2002-2004)
- American Chemical Society (ACS); Environmental Division; Chair, Book revenue committee (2002-2007); Member-at-Large (2004-2005)
- Association for Environmental Engineering and Science Professors (AEESP) Membership Committee (2001-2004) Elected Board Member (2007-2009)
- American Water Works Association (AWWA) Organic Contaminants Research Committee 2002-2004.
- Water Works Association of PA Dave Long Scholarship Selection Committee 2003-2004.
- American Association of University Women (AAUW) Selected Professions Fellowship Selection Committee 2003-2004.

Professional Affiliations

American Society of Civil Engineers (ASCE); American Water Works Association (AWWA); Water Environment Federation (WEF); American Chemical Society (ACS)
American Society of Microbiology (ASM); Association for Environmental Engineering and Science Professors (AEESP); Association for Women in Science (AWIS); American Association for University Women (AAUW); Achievement Rewards for College Scientists (ARCS), Society of Women Engineers (SWE)

Journal Reviewer

Biodegradation; Biotechnology and Bioengineering; Environmental Engineering Science; Environmental Science and Technology; *Geochimica et Cosmochimica* Acta; Journal of Soil and Sediment Contamination; ASCE Journal of Environmental Engineering; Management Science; Mathematical Biosciences, Journal of Water Resources Planning and Management.

Proposal Reviewer

- U.S. Department of Energy Environmental Management Science Program
- U.S. Department of Energy, Natural and Accelerated Bioremediation (NABiR) Program
- American Water Works Association Research Foundation (AWWARF)
- National Science Foundation , Hydrological Sciences Program
- National Science Foundation, Integrative Graduate Education and Research Traineeship (IGERT) program
- National Science Foundation Biocomplexity Competition
- National Science Foundation Small Business Innovative Research (SBIR) Program
- National Science Foundation Unsolicited Panel for Division of Bioengineering and Environmental Systems (BES)
- National Science Foundation Science and Technology Centers (STC) Program
- U.S. Civilian Research and Development Foundation Cooperative Grants Program
- U.S. Army Research Center – Chemical Science Division
- Canadian Science Foundation – Water Centers Program

Book Reviewer

McGraw-Hill Publishing
ACS Symposium Monograph Series

University Service

- Civil and Environmental Engineering Undergraduate Curriculum Committee
- Civil and Environmental Engineering Graduate Curriculum Committee
- Faculty Search Committee – CEE Water Quality Area and CEE Systems Area

- Faculty Search Committee – Chair, CIT Molecular Microbiology Area
- Carnegie Institute of Technology (Engineering School) Dean's Review Committee
- Faculty Sponsor, Undergraduate Biomedical Engineering Society
- Meeting of the Minds Undergraduate Research Symposium Judge
- University Committee – CIT Dean's Search
- University Committee – Task Force on Advising
- University Committee – Ryan Teaching Award Selection Committee (Co-chair)
- University Committee – Vira I Heinz International Scholarship – Selection Committee
- University Committee – Mulach Scholarship Selection Committee
- Civil and Environmental Engineering Undergraduate Recruitment Committee (Chair)
- Civil and Environmental Engineering Strategic Planning Committee
- Civil and Environmental Engineering Facilities Committee

Outreach

- Pittsburgh Teachers Institute
- Society of Women Engineers at Carnegie Mellon University "Engineering Your Future" and High School Day
- Summer Achievement for Minority Scholars at Carnegie Mellon University
- RET: Research Experience for Teachers Program through NSF
- Pittsburgh Science Fair Judge

Publications

1. Rittmann, B.E. and J.M. VanBriesen (**1996**) "Microbiological Processes in Reactive Modeling", in "Reviews in Mineralogy" (P.C. Lichtner, C.I. Steefel, and E.H. Oelkers, eds.), Vol. 34: *Reactive Transport in Porous Media*, p. 311. Mineralogical Society of America, 1996.

2. Tebes-Stevens, C., A.J. Valocchi, J.M. VanBriesen, and B.E. Rittmann (**1998**) "Multicomponent transport with coupled geochemical and microbiological reactions: model description and example simulations," *Journal of Hydrology*, 209: 8-26.

3. Banaszak, J.E., J.M. VanBriesen, B.E. Rittmann and D.T. Reed (**1998**) "Mathematical Modeling of the Effects of Aerobic and Anaerobic Chelate Biodegradation on Actinide Speciation," *Radiochimica Acta*, 82: 445-451.

4. VanBriesen, J.M. and B.E. Rittmann (**1999**), "Modeling speciation effects on biodegradation in mixed metal/chelate systems," *Biodegradation* 10:315-330.

5. VanBriesen, J.M. and B.E. Rittmann (**2000**), "Mathematical description of microbiological reactions involving intermediates," *Biotechnology and Bioengineering* 67:1:35-52.

6. VanBriesen, J.M. , B.E. Rittmann, L. Xun, D.C. Girvin, H. Bolton, Jr. (**2000**), "The rate controlling form of nitrilotriacetate for biodegradation by *Chelatobacter heintzii*," *Environmental Science and Technology*, 34: 3346-3353.

7. VanBriesen, J. M. and B. E. Rittmann (**2000**) "Modeling recalcitrant intermediate formation during biodegradation," In G. B. Wickrananayake, A. R. Gavaskar, and M. E. Kelley, editors, Natural Attenuation Considerations and Case Studies: Remediation of Chlorinated and Recalcitrant Compounds, Battelle Press, Columbus, Ohio, pp. 25 - 32

8. VanBriesen, J.M. (**2001**) "Thermodynamic Yield Predictions for Biodegradation through

Oxygenase Activation Reactions *Biodegradation 12(4) 265-281.*

9. Yuan, Z. and VanBriesen, J.M. (**2002**) “Yield prediction and stoichiometry of multi-step biodegradation reactions involving oxygenation,” *Biotechnology and Bioengineering* 80:1: 100-113.

10. VanBriesen, J.M.. (**2002**) “Evaluation of methods to predict bacterial yield using thermodynamics,” *Biodegradation*, 13:171-190.

11. Sidari FP and VanBriesen J. (**2002**) "Evaluation of a Chlorine Dioxide Secondary Disinfection System,” *Water Engineering and Management*. 149(11):29-33.

12. Rittmann, B.E., Banaszak, J.E., VanBriesen, J.M., and Reed, D.T. (**2002**) “Mathematical modeling of precipitation and dissolution reactions in microbiological systems,” *Biodegradation* 13(4): 239-251.

13. Ailamaki, A.; Faloutsos, C.; VanBriesen, J.M.; Small, M.; Fischbeck, P. (**2003**) “An environmental sensor network to determine drinking water quality and security,” SIGMOD, Vol 34: No 2, p 47-52.

14. Sidari, F.P., Stout, J.E., VanBriesen, J.M., Bowman, A.M., Grubb, D., Neuner, A., Wagener, M.M., Yu, V.L. (**2004**) “Keeping Legionella out of water systems,” American Water Works Association Journal 96(1): 111-119.

15. Karcher, S.C., Small, M.J., and VanBriesen, J.M., (**2004**) “Statistical method to evaluate the occurrence of PCB transformations in river sediments with application to Hudson River Data,” *Environmental Science and Technology* 38:6760-6766.

16. Nowack, B. and VanBriesen, J.M. (editors) Biogeochemistry of Chelating Agents. ACS Books. ACS Symposium Series 910. Oxford University Press for the American Chemical Society, Washington DC **2005**.

17. Nowack, B. and VanBriesen, J.M. “Chelating agents in the environment,” in “Biogeochemistry of Chelating Agents” (B. Nowack and J.M. VanBriesen, eds.), ACS Symposium Series 910. Oxford University Press for the American Chemical Society, Washington DC **2005.** p. 1-18.

18. Yuan, Z. and VanBriesen, J.M. “Analysis of biodegradation intermediates of ethylenediaminetetraacetate (EDTA) and nitrilotriacetate (NTA) by high performance liquid chromatography (HPLC),” in “Biogeochemistry of Chelating Agents” (B. Nowack and J.M. VanBriesen, eds.), ACS Symposium Series 910. Oxford University Press for the American Chemical Society, Washington DC **2005**. p. 139-148.

19. Xiao, Jinghua and J.M. Vanbriesen, (**2006**) “Expanded thermodynamic model for microbial yield prediction,” *Biotechnology and Bioengineering*. 93:1:110-121.

20. Yuan, Zhiwen and VanBriesen, J.M. (**2006**) “Intermediate formation in biodegradation of EDTA and NTA,” *Environmental Engineering Science,* 23:3: 533-544.

21. Escoriza, M., VanBriesen, J.M., Stewart, S., Maier, J., Treado, P. (**2006**) "Raman Spectroscopy and Chemical Imaging for quantification of filtered waterborne bacteria," *Journal of Microbiological Methods*, 66:1:63-72.

22. Wong-Chong, G.M., and VanBriesen, J.M., "Microbiological Technologies for Treatment of Cyanide," in Cyanide in Water and Soil: Chemistry, Risk and Management (D. Dzombak, R. Ghosh, and G. Wong-Chong, editors). CRC Press; Taylor and Francis Group. January **2006**.

23. Weber, C.L., VanBriesen, J.M., and Small, M.J. (**2006**) "A Stochastic Regression Approach to Analyzing Thermodynamic Uncertainty in Chemical Speciation Modeling," *Environmental Science and Technology*, 40:12: 3872-3878.

24. Escoriza, M.F., VanBriesen, J.M., Stewart, S. and Maier, J., (**2006**) "Studying bacterial metabolic states using Raman spectroscopy," Applied Spectroscopy, 60, no. 9.

25. Cao, F., Greve, D.W., Oppenheim, I.J., VanBriesen, J.M. (**2006**) "Microscale Chloride Sensor," ECS Transactions, vol. 3, (10) 215, 2006.

26. Karcher, S., VanBriesen, J.M., and Small, M.J (**2007**) "Numerical Method to Elucidate Likely Target Positions of Chlorine Removal in Anaerobic Sediments undergoing Polychlorinated biphenyl dechlorination," *ASCE Journal of Environmental Engineering*, 133(3): 278-286.

27. Helbling, D.E. and J.M. VanBriesen (**2007**) "Free Chlorine Demand and Cell Survival of Microbial Suspensions," Water Research, 41(19) 4424-4434.

28. Escoriza, M.F. and VanBriesen, J.M. (**2007**) "Raman spectroscopic discrimination of cell response to chemical and physical inactivation," Applied Spectroscopy 61: 812-823.

29. Leskovec, J., Krause, A., Guestrin, C., Faloutsos, C., VanBriesen, J., Glance, N. (**2007**) ''Cost-effective outbreak detection in networks,'' The 13th International Conference *on Knowledge Discovery and Data Mining (KDD),* San Jose, California. Aug 2007. *Best Student Paper Award. P. 420-429*

30. Isovitsch, S. L. and VanBriesen, J. M. (**2007**). "Spatial Analysis of Optimized Sensor Locations using GIS." *Proceedings of the World Environmental and Water Resources Congress 2007*, ASCE, Tampa, FL.

31. Isovitsch, S. L. and VanBriesen, J. M. (**2007**). "Integrating SCADA and GIS to Understand the Effectiveness of On-line Chlorine Boosters used in Response to Contamination Incidents within a Water Distribution Network." *Proceedings of the 2007 WEF Disinfection Specialty Conference*, Water Environment Federation, Pittsburgh, PA.

32. Thompson, S.L., Casman, E., Fischbeck, P., Small, M., and VanBriesen, J.M. (**2007**). "Vulnerability Assessment of a Drinking Water Distribution System." *Proceedings of the 2007 WEF Disinfection Specialty Conference*, Water Environment Federation, Pittsburgh, PA.

33. Thompson, S.L., Casman, E., Fischbeck, P., Small, M., and VanBriesen, J.M. (**2007**). "Vulnerability Assessment of a Drinking Water Distribution System: Implications for

Public Water Utilities." *Proceedings of the World Environmental and Water Resources Congress 2007,* ASCE, Tampa, FL.

34. Yuan, Z and VanBriesen, J.M. (**2008**) "Bacterial Growth Yields on EDTA, NTA, and their Biodegradation Intermediates," *Biodegradation* 19(2): 41-52.

35. Isovitsch, S. L. and VanBriesen, J. M. (**2008**) "Sensor placement and optimization criteria dependencies in a water distribution system." *ASCE Journal of Water Resources Planning & Management* 134(2): 186-196.

36. Xiao, Jinghua and J.M. VanBriesen (**2008**) "Expanded thermodynamic true yield prediction model: adjustment and evaluation," *Biodegradation* 19(1): 99-127.

37. Xu, Jianhua; Fischbeck, P., Small, M., VanBriesen, J., Casman, E. (**2008**), "Identifying sets of key nodes for placing sensors in dynamic water distribution networks," accepted and in press *ASCE Journal of Water Resources Planning and Management*.

38. Helbling, D.E., and J.M. VanBriesen (**2008**) "Continuous Monitoring of Residual Chlorine Concentrations in Response to Controlled Microbial Intrusions in a Laboratory-Scale Distribution System," *Water Research* 42(12): 3162-72.

39. Krause, A., Leskovec, J., Guestrin, C., VanBriesen, J., Faloutsos, C. (**2008**) ''Efficient Sensor Placement Optimization for Securing Large Water Distribution Networks,'' *ASCE Journal of Water Resources Planning and Management*, 134(6): 516-526.

40. Ostfeld, A., Uber, J.G., Salomons, E., Berry, J.W., Hart, W.E., Phillips, C.A., Watson, J.P., Dorini, G., Jonkergouw, P., Kapelan, Z., Pierro, F., Khu, S.T., Savic, D., Eliades, D., Polycarpou, M., Ghimire, S.R., Barkdoll, B.D., Gueli, R., Huang, J.J., McBean, E.A., James, W., Krause, A., Leskovec, J., Isovitsch, S., Xu, J., Guestrin, C., VanBriesen, J., Small, M., Fischbeck, P., Pries, A., Propato, M., Piller, O., Trachtman, G.B., Wu, Z.Y., and Walski, T. (**2008**). "The Battle of the Water Sensor Networks (BWSN): A Design Challenge for Engineers and Algorithms." in *J. of Water Resources Planning & Management*., 134(6): 556-568.

41. Xu, J. M. Johnson, P. Fischbeck, M. Small, and J. VanBriesen,, "Robust placement of sensors in dynamic water distribution systems," under revision for the *European Journal of Operational Research.*

42. Isovitsch, S.L. and VanBriesen, J.M. (2007). "Booster disinfection for response to contamination in a drinking water distribution system." Under revision for *ASCE Journal of Water Resources Planning & Management.*

43. Helbling, D.E. and J.M. VanBriesen, "Modeling residual chlorine response to a microbial contamination event in drinking water distribution systems," under revision for *ASCE Journal of Environmental Engineering*, February 2008.

44. Thompson, S.L., and J.M. VanBriesen, "Temporal Variability of Bacterial Diversity in a Drinking Water Distribution System," submitted to *Environmental Microbiology*.

45. Xu, J., Small, M., and VanBriesen, J., "Integrating location models with Bayesian Analysis to inform decision making: a case study in deploying sensors in water supply systems," submitted to *Decision Analysis*.

Published Abstracts

1. VanBriesen, J.M. and B.E. Rittmann (2000) "Modeling Biogeochemical Interactions in Co-Contaminant Systems," American Chemical Society 220th National Meeting Abstracts, August 2000, Washington DC.

2. Yuan, Z. and VanBriesen, J.M.(2002) "Yield Prediction and Modeling for Multi-Step biodegradation catalyzed by oxygenase enzymes," Abstracts of the American Society for Microbiology 102nd Annual Meeting, May 19-23, 2002.

3. Yuan, Z. and VanBriesen, J.M. (2002) "Analysis of intermediates of EDTA biodegradation by HPLC," American Chemical Society 224th National Meeting Abstracts, August 2002, Boston, MA.

4. Rittmann, B.E., VanBriesen, J.M., Schwartz, A. (2002) "Modeling Coupled Biogeochemical Processes," Association for Environmental Engineering and Science Professors Research and Education Conference, Meeting Abstracts, August 2002, Toronto, Canada.

5. Sidari, F.P., Stout, J.E. , VanBriesen, J.M., Bowman, A.M., Grubb, D., Neuner, A., Yu, V.L., (2002) "Chlorine Dioxide: A point of entry treatment technology for the control of Legionella in sensitive secondary distribution systems," American Water Works Association Water Quality Technology Conference Proceedings, November 2002, 1st Place in Poster Competition.

6. Yuan, Z. and J.M. VanBriesen. "Measuring Cell Yields on NTA, EDTA and Their Biodegradation Intermediates Using Batch Reactors," Abstracts of 226th ACS National Meeting, September 2003, New York, NY.

7. Escoriza, M., Stewart, S., Maier, J., VanBriesen, J.M., "Raman spectroscopy and digital imaging for identification and enumeration of bacteria in water," Abstracts of the Biomedical Engineering Society Annual Meeting. October 2004.

8. Kim, H-J, Dorn, V.L., VanBriesen, J.M., "The efficacy of ethylenediaminetetraacetic acid (EDTA) against biofilm bacteria," Abstracts of the Biomedical Engineering Society Annual Meeting. October 2004.

9. VanBriesen, J.M., Blough, M., Brown, W., and Minkley, E., "Critical oxygen concentrations for biodegradation of PCBs," Abstracts of the 228th American Chemical Society National Meeting. August 2004. Extended abstract accepted and published by the Environmental Division.

10. Wang, C., VanBriesen, J.M., Brown, W.E., Minkley, E.G., Jr., "Microbial communities in two river sediments demonstrate distinct anaerobic PCB dechlorination patterns," Abstracts of the 228th American Chemical Society National Meeting. August 2004. Extended abstract accepted and published by the Environmental Division.

11. Karcher, S.C., Small, M.J., VanBriesen, J.M., "Statistical method to evaluate the occurrence of PCB transformations in river sediments," Abstracts of the 228th American Chemical Society National Meeting. August 2004. Extended abstract accepted and published by the Environmental Division.

12. Wang, C., Minkley, E., Jr., VanBriesen, J.M., Blough, M., Brown, W., "Characterization of the anaerobic dechlorinating microorganisms in two PCB contaminated river sediments," Abstracts of the 104th Annual Meeting of the American Society of Microbiology. May 2004.

13. J.Xu, M.Small, P.Fischbeck, J.VanBriesen, E. Casman, Optimization of sensors placement in water distribution systems, Society for Risk Analysis 2005 Annual Meeting, Dec.4-7, 2005, Orlando, FL.

14. VanBriesen, J.M., "Intermediate formation in the biodegradation of EDTA and NTA," presented at the International conference on Complexing Agents Science, Industry, Authorities in Ascona Switzerland, March 2007.

15. Helbling, D.E., and J.M. VanBriesen. "Real-Time Monitoring of Free Chlorine Response to Microbial Contamination in a Model Distribution System," ACS Conference, Boston, MA, August 20-22, 2007.

16. Thompson, S.L., and VanBriesen, J.M. "Microbial Diversity as a Water Quality Indicator in Drinking Water Distribution Systems." *Proceedings of 107th General Meeting of the American Society of Microbiology*, ASM, Toronto, ON, 2007.

17. VanBriesen, J.M., "CORON: Collaborative Ohio River Observatory Network," ASCE World Environmental and Water Resources Congress 2007, Tampa Florida.

18. Thompson, S.L., and VanBriesen, J.M. "Using Autochthonous Bacterial Populations as Biological Indicators in Drinking Water Distribution Systems." *Proceedings of 2007 Association for Environmental Engineering and Science Professors Conference*, AEESP, Blacksburg, VA, July 21, 2007.

19. Yu, Youngseob, S.L. Thompson, J.M. VanBriesen, E.G.Minkley and W.E. Brown, "Microbial diversity and community profiles in PCB contaminated sediments from Hudson and Grasse Rivers," *Proceedings of 107th General Meeting of the American Society of Microbiology*, ASM, Toronto, ON, 2007.

Presentations

1. VanBriesen, J.M. "Model Demonstration and Analysis," presented at the DOE Workshop on "Integrating Modeling and Experimentation on Coupled Biodegradation and Chemical Reactions Involving Metal-Chelate Complexes," held at Northwestern University, March 22-23, 1995.

2. VanBriesen*, J.M., B.E. Rittmann, and A.J. Valocchi "Modeling of Coupled Processes in Subsurface Transport of Reactive Contaminants," presented at DOE Subsurface Science Program Co-Contaminant Chemistry Research Subprogram meeting, Gaithersburg MD, January 23-25, 1996.

3. VanBriesen, J.M. "Modeling Coupled Processes Involving Reactive Co-Contaminants,"

presented at Pacific Northwest National Laboratory, February 13, 1996.

4. VanBriesen, J.M. "Modeling Chemical and Biological Reactions in Real-World Systems," presented at Environmental Health Engineering Seminar, Northwestern University, October 1996.

5. Banaszak*, J.E., J.M. VanBriesen, B.E. Rittmann, G.Joshi-Tope, and A.J. Francis, "Speciation Dependent Degradation of Citrate by *Pseudomonas fluorescens*." Presented at the *19th Annual Environmental Chemistry Workshop*, Purdue University, October 12-13, 1996.

6. Banaszak, J.E., J.M. VanBriesen*, and B.E. Rittmann in collaboration with G. Joshi-Tope and A.J. Francis, "Mathematical Modeling of Speciation Dependent Biodegradation," Presented at *Mathematical Issues in Bioremediation*, Los Alamos National Laboratory, June 11-13, 1997.

7. VanBriesen*, J.M., J.E. Banaszak, J.Quinn, D.T. Reed, and B.E. Rittmann. "A Systematic Study of Coupled Chemical and Biological Reactions in the Aerobic Degradation of Nitrilotriacetic Acid by *Chelatobacter heintzii*." Presented at the *Symposium on the Influence of Coupled Processes on Contaminant Fate and Transport* at the Soil Science Society of America Annual Meeting, Anaheim CA, October 26-30, 1997.

8. Banaszak*, J.E., J.M. VanBriesen, B.E. Rittmann, and D.T. Reed, "Effects of Aerobic and Anaerobic Chelate Biodegradation on Actinide Speciation." Presented at *MIGRATION '97, Sixth International Conference on the Chemistry and Migration Behavior of Actinides and Fission Products in the Geosphere*, Sendai, Japan, October 26-31, 1997.

9. VanBriesen, J.M. "Modeling Intermediate Formation in Biological Degradation Reactions," presented at Environmental Health Engineering Seminar, Northwestern University, March 11, 1998.

10. VanBriesen,J.M. "Modeling Intermediate Formation in Reactions Involving Biological Catalysts," presented *New Frontiers in Environmental Catalysis: chemical processing, emissions treatment, and the natural environment*, the 1998 Annual Scientific Meeting, Center for Catalysis and Surface Science, Northwestern University, September 9, 1998.

11. VanBriesen*, J.M., B.E. Rittmann, H. Bolton, Jr., D.C. Girvin. "Model Analysis of Intermediate Formation in the Biodegradation of Nitrilotriacetic Acid by *Chelatobacter heintzii* ," Presented at the *21th Annual Environmental Chemistry Workshop*, University of Michigan, October 18, 1998.

12. VanBriesen, J.M., "Modeling Complex Biogeochemical Reactions: An exploration of controlling factors in the biodegradation of synthetic chelating agents" presented at Oak Ridge National Laboratory, January 11, 2000.

13. VanBriesen, J.M., and B.E. Rittmann, "Modeling Recalcitrant intermediate formation during biodegradation," 2nd International Conference on the Remediation of Chlorinated and Recalcitrant Compounds (Monterey, CA May 22-25, 2000).

14. VanBriesen, J.M., "Intermediate Formation in the Biodegradation of Anthropogenic Compounds," presented at Graduate seminar in Department of Biology, Duquesne

University , April 7, 2000.

15. VanBriesen, J.M. “Risk Issues in the U.S. Department of Energy,” presented for graduate seminar in Engineering and Public Policy Program, Carnegie Mellon University, April 18,2000.

16. VanBriesen, J.M., “Putting Graduate Research in Perspective,” presented at Regional Duquesne University Chemistry Symposium, Invited Keynote Speaker. August 11, 2000.

17. VanBriesen, J.M. and B.E. Rittmann, “Modeling Biogeochemical Interactions in Co-Contaminant Systems,” American Chemical Society (Washington, DC, August 21st, 2000)

18. VanBriesen, J.M., “Teaching and Research: What’s the Connection,” Presented to Research Experience for Teachers, at Johns Hopkins University, July 14, 2001.

19. VanBriesen, J.M., “Putting Graduate Research in Perspective,” presented at Graduate Womens’ Connecting Lunch, Carnegie Mellon University, Invited Guest Speaker. Fall 2001

20. VanBriesen, J.M. “Biodegradation of Recalcitrant Organics,” Presented at graduate seminar in Environmental Engineering, Stanford University, December 3, 2001.

21. VanBriesen, J.M. “Biodegradation of Recalcitrant Organics,” Presented at Environmental Science Seminar, Chatham College, January 16, 2002.

22. Yuan, Z. and VanBriesen*, J.M. “Yield Prediction and Modeling for Multi-Step biodegradation catalyzed by oxygenase enzymes,” Abstracts of the American Society for Microbiology 102nd Annual Meeting, May 19-23, 2002, Salt Lake City, UT.

23. Yuan, Z. and VanBriesen*, J.M. “Analysis of intermediates of EDTA biodegradation by HPLC,” American Chemical Society Annual Meeting Abstracts, August 2002, Boston, MA.

24. Rittmann, B.E., VanBriesen*, J.M., Schwartz, A. “Modeling Coupled Biogeochemical Processes,” Association for Environmental Engineering and Science Professors Research and Education Conference, Meeting Abstracts, August 2002, Toronto, Canada.

25. Sidari*, F.P., Stout, J.E. , VanBriesen, J.M., Bowman, A.M., Grubb, D., Neuner, A., Yu, V.L., “Chlorine Dioxide: A point of entry treatment technology for the control of Legionella in sensitive secondary distribution systems,” American Water Works Association Water Quality Technology Conference, November 2002, 1st Place in Poster Competition.

26. Escoriza*, M.F., VanBriesen, J.M., Stewart, S., Maier, J., Dzombak, D., Treado, P. “Raman Chemical Imaging for Detection of Biological Agents in Water.” University of Pittsburgh Science 2003. Improving the Human Condition. September 2003.

27. Yuan, Z. and J.M. VanBriesen*. “Measuring Cell Yields on NTA, EDTA and Their Biodegradation Intermediates Using Batch Reactors.” American Chemical Society (ACS) National Meeting. September 2003, New York, NY.

28. VanBriesen,J.M.* “Advisors, Mentors, Friends.” presented at Graduate Women’s Connecting Lunch, Carnegie Mellon University, Invited Guest Speaker, November 18,

2003.

29. VanBriesen,J.M.* “Biodegradation of Chelating Agents,” presented at Environmental Engineering Graduate Seminar, Carnegie Mellon University, April 2004.

30. VanBriesen, J.M.*, “Smart Women’s Job Search: The two body problem,” presented at Graduate Women’s Connecting Lunch, Carnegie Mellon University, Invited Guest Speaker, April 2004.

31. Wang, C.*, Minkley, E., Jr., VanBriesen, J.M., Blough, M., Brown, W., “Characterization of the anaerobic dechlorinating microorganisms in two PCB contaminated river sediments,” at the 104th Annual Meeting of the American Society of Microbiology. May 2004.

32. VanBriesen, J.M.* “Pittsburgh Water Quality Data,” presented at “Water: Assets and Liabilities,” a conference sponsored by the Engineering Society of Western Pennsylvania. May 4, 2004

33. VanBriesen, J.M.*, Blough, M., Brown, W., and Minkley, E., “Critical oxygen concentrations for biodegradation of PCBs,” Poster presentation at the 228th American Chemical Society National Meeting. August 2004.

34. Wang, C*., VanBriesen, J.M., Brown, W.E., Minkley, E.G., Jr., “Microbial communities in two river sediments demonstrate distinct anaerobic PCB dechlorination patterns,” at the 228th American Chemical Society National Meeting. August 2004.

35. Karcher, S.C.*, Small, M.J., VanBriesen, J.M., “Statistical method to evaluate the occurrence of PCB transformations in river sediments,” at the 228th American Chemical Society National Meeting. August 2004. Certificate of Merit: outstanding for material content and manner of presentation by the ACS division of environmental chemistry.

36. Escoriza, M., Stewart, S., Maier, J., VanBriesen, J.M*., “Raman spectroscopy and digital imaging for identification and enumeration of bacteria in water,” Poster Presentation at Biomedical Engineering Society Annual Meeting. October 2004.

37. Kim, H-J, Dorn, V.L., VanBriesen, J.M.*, “The efficacy of ethylenediaminetetraacetic acid (EDTA) against biofilm bacteria,” Poster Presentation at Biomedical Engineering Society Annual Meeting. October 2004.

38. VanBriesen, J.M. “Biodegradation of Chelating Agents,” presented at Lehigh University, Graduate Seminar, February 2005.

39. VanBriesen, J.M. “Biodegradation of Polychlorinated Biphenys – can we realize the potential,” presented at Arizona State University, March 2005.

40. VanBriesen, J.M. “Control of pathogenic biofilms on medical devices using EDTA,” presented at Arizona State University, Biodesign Institute, March 2005.

41. VanBriesen, J.M. “Southwestern PA Water Quality,” presented to the Departmental Graduate Research Seminar, Civil and Environmental Engineering, Carnegie Mellon University. April 2005.

42. VanBriesen, J.M., Small, M.S., Brown, W., Minkley, E., Karcher, S. , Wang, C. ”Collaborative Statistical and Molecular Microbiological Research to Elucidate Complex Systems involving Polychlorinated Biphenyls, “ presented at the Association of Environmental Engineering and Science Professors (AEESP) conference. Clarkson University, Potsdam NY. July 2005.

43. Yuan, Z. and VanBriesen, J.M., “Intermediate formation in the biodegradation of chelating agents, “Poster presentation and poster brief presented at the Association of Environmental Engineering and Science Professors (AEESP) conference. Clarkson University, Potsdam NY. July 2005.

44. VanBriesen, J.M. “Southwestern PA Water Quality – the National Research Council Study,” presented to the Science Advisory Board, Three Rivers Wet Weather, Inc. September 2005.

45. VanBriesen, J.M. “Water Quality in Southwestern PA – where do we go from the NRC study,” presented at the Ohio River Basin Consortia for Research and Education (ORBCRE) Meeting. Marshall University. West Virginia. October 2005.

46. VanBriesen, J.M. “Biodegradation of Polychlorinated biphenls – can we realize the potential,” presented at Cornell University, November 2005.

47. VanBriesen, J.M. “Biodegradation of Polychlorinated biphenls – can we realize the potential,” presented at Washington University in St. Louis, February 2006.

48. VanBriesen, J.M. “Raman Spectroscopy for enumeration and viability assessment of pathogens in drinking water,” presented at University of Illinois, Urbana-Champaign, February 2006.

49. VanBriesen, J.M. “Control of pathogenic biofilms on medical devices using EDTA,” presented at Carnegie Mellon University, Biomedical Engineering Department Seminar, February 2006.

50. VanBriesen, J.M. “Water Supply and Distribution System Vulnerabilities,” presented at Carnegie Mellon University Homeland Security Briefing, Washington DC, February, 2006.

51. VanBriesen, J.M. “Water QUEST: State of the Center,” presented at Annual Steinbrenner Institute for Environmental Education and Research retreat, March, 2006.

52. VanBriesen, J.M. “Water Supply and Distribution System Vulnerabilities,” presented University of Cincinnati, April 2006.

53. VanBriesen, J.M. “Water QUEST: An introduction,” presented at the Ohio River Valley Water Sanitation Commission (ORSANCO), April 2006.

54. VanBriesen, J.M. “Water QUEST: An introduction,” presented at the Carnegie Mellon University, Department of Civil and Environmental Engineering Seminar for Visiting Students, April 2006.

55. VanBriesen, J.M. “Water Supply and Distribution System Vulnerabilities,” presented to University Research Administrators Meeting, Carnegie Mellon University, April 2006.

56. VanBriesen, J.M. “Water Distribution System Vulnerabilities and Sensor Networks,” presented at Ohio State University, April 2006.

57. VanBriesen, J.M. “Water QUEST: an introduction,” presented to the Pittsburgh Water and Sewer Authority, July 2006.

58. VanBriesen, J.M. “Water QUEST: an introduction,” presented to the Southwestern PA Water Quality Roundtable, July 2006.

59. VanBriesen, J.M., “Battle of Water Sensor Networks,” presented at the Water Distribution System Conference, Cincinnati Ohio, August, 2006.

60. VanBriesen, J.M. and Faloustos, C., “KDD: Water quality sensors tutorial,” presented at the Knowledge Discovery in Databases (KDD) Conference, Philadelphia PA, August 2006.

61. VanBriesen, J.M., “Water QUEST: an introduction,” presented at the Three Rivers Wet Weather Annual Conference, Mars, PA, September 2006.

62. VanBriesen, J.M. “The NRC Report on Southwestern PA,” presented to the Southwestern PA Water Quality, October 2006.

63. VanBriesen, J.M., “Water QUEST: an introduction,” presented at the Ohio River Basin Consortia for Research and Education (ORBCRE) annual meeting in Murray, Kentucky, October 2006.

64. VanBriesen, J.M., “CORON: Collaborative Ohio River Observatory Network,” presented at the Ohio River Basin Consortia for Research and Education (ORBCRE) annual meeting in Murray, Kentucky, October 2006.

65. VanBriesen, J.M., “CLEANER: cyberinfrastructure planning for the environment,” presented at the Ohio River Basin Consortia for Research and Education (ORBCRE) annual meeting in Murray, Kentucky, October 2006.

66. VanBriesen, J.M., “Panther Hollow Bacterial Water Quality,” presented at the Ohio River Basin Consortia for Research and Education (ORBCRE) annual meeting in Murray, Kentucky, October 2006.

67. VanBriesen, J.M., “Statistical and Molecular Microbiological Research to Elucidate Complex Systems involving Polychlorinated Biphenyls,” presented at University of Texas, Austin, November 2006.

68. VanBriesen, J.M., “Water QUEST: an introduction,” presented to the Carnegie Mellon University Alumni Group in Austin, Texas, November 2006.

69. Yu, Y., J.M. VanBriesen*, E.G. Minkley Jr., and W.E. Brown. “Identification of microbial diversity in PCB contaminated sediments from Hudson and Grasse rivers by various molecular biology tools”, Environmental Technology Technical Symposium & Workshop, Washington, D.C., November 28-30, 2006 (Poster presentation).

70. Hughes, A., J.M. VanBriesen*, M.J. Small. “Bayesian Modeling of PCB Dechlorination in Sediment for Remediation Decision Support,” Environmental Technology Technical Symposium & Workshop, Washington, D.C., November 28-30, 2006 (Poster presentation).

71. VanBriesen, J.M., “Sensors for drinking water distribution systems,” presented at NSF workshop on Sensor Networks, December 2006.

72. VanBriesen, J.M., “Intermediate formation in the biodegradation of EDTA and NTA,” presented at the International conference on Complexing Agents Science, Industry, Authorities in Ascona Switzerland, March 2007.

73. VanBriesen, J.M., “Water supply and distribution system vulnerabilities,” presented to Regional University Research Administrators Meeting, March 2007.

74. VanBriesen, J.M.*, Montgomery, J., Haas, C., Minsker, B., Schnoor, J., “Integrated Hydrologic Science and Environmental Engineering Observatory: A preliminary program plan for the WATERS Network,” Engineering Sustainability Conference, Pittsburgh PA, April 2007.

75. VanBriesen, J.M., “Global Water Sustainability: urban issues in clean water, “ Global Academic Partnership Workshop, Research in Sustainable community Development, sponsored by the Center for Latin American Studies and the Mascaro Sustainability Initiative, Pittsburgh PA April 2007.

76. VanBriesen, J.M., “CORON: collaborative Ohio River observatory network,” ASCE World Environmental and Water Resources Congress 2007, Tampa Florida.

77. Escoriza, M.F., *VanBriesen, J.M., Stewart, S., Maier, J., Treado, P., “Raman spectroscopy for detection, identification, quantification and viability assessment of bacteria in water,” Association of Environmental Engineering and Science Professors (AEESP) Biannual Meeting, July 2007.

78. VanBriesen, J.M., “Bacterial Thermodynamics and Yield Prediction,” presented to Biotechnology Seminar Series University of Minnesota, October 2007.

79. Xu, Yan, J.M. VanBriesen and K. Gregory, “Physical Source Tracking Using Multiple Molecular Microbial Methods in Pine Creek Watershed, Allegheny County PA,” Ohio River Basin Conference 2007, October 2007.

80. Schoen, M, Small, M and VanBriesen, J.M. “Panther Hollow Watershed Assessment Part II,” Ohio River Basin Conference 2007, October 2007.

81. Schoen, M., Small, M. and VanBriesen, J.M., “Bayesian Load Duration Curves for Water Quality Decision Making, Ohio River Basin Conference 2007, October 2007.

82. VanBriesen, J.M. and Walker, D. and Brainsteitter, A. “Case Study: Bacterial Monitoring and Contaminant Source Tracking in Pine Creek Watershed,” Proceedings of the 9th Annual Three Rivers Wet Weather Sewer Conference, October 2007.

83. Amanda S. Hughes, Jeanne M. VanBriesen and Mitchell J. Small, “Bayesian Modeling of PCB Dechlorination in Sediment for Remediation Decision Support,” Environmental Technology Technical Symposium & Workshop, Washington, D.C., December 3-5, 2007 (Poster).

84. Youngseob Yu, Jeanne M. VanBriesen, Edwin Minkley, William Brown “Investigation of Microbial Community Structures and PCB Dechlorination Patterns in River Sediments,” Environmental Technology Technical Symposium & Workshop, Washington, D.C., December 3-5, 2007 (Poster).

85. VanBriesen,J.M. “Urban Water and Global Implications,” presented at Ohio River Basin Consortia for Research and Education, October 2008.

86. VanBriesen, J.M.*, “Work Family Balance and Juggling,” presented at Graduate Women’s Connecting Lunch, Carnegie Mellon University, Invited Guest Speaker, November 2008.