

GERALD E. SPEITEL JR.

EDUCATION

Ph.D.	University of North Carolina	1985	Environmental Engineering
M.S.E.E.	University of North Carolina	1979	Environmental Engineering
B.S.C.E. (summa cum laude)	Union College	1976	Civil Engineering

PROFESSIONAL EXPERIENCE

2014-	C.W. Cook Professor in Environmental Engineering and Associate Dean for Academic Affairs, Cockrell School of Engineering, University of Texas at Austin.
2008-2014	John J. McKetta Professor and Associate Dean for Academic Affairs, Cockrell School of Engineering, University of Texas at Austin.
2001-2008	John J. McKetta Professor and Chairman, Dept. of Civil, Architectural and Environmental Engineering, University of Texas at Austin.
1998-2001	Professor, Dept. of Civil Engineering, University of Texas at Austin.
1992-1998	Associate Professor, Dept. of Civil Engineering, University of Texas at Austin.
1988-1992	Assistant Professor, Dept. of Civil Engineering, University of Texas at Austin.
1985-1988	Assistant Professor, Dept. of Civil Engineering, University of Houston.
1981-1985	Graduate Research Assistant, University of North Carolina at Chapel Hill.
1980-1981	Process Engineer, Malcolm Pirnie, Inc., consulting engineering firm.
1978-1979	Graduate Research Assistant, University of North Carolina at Chapel Hill.
1977-1978	Design Engineer, C. T. Male Associates, P.C., consulting engineering firm.
1976-1977	Intern Engineer, Stearns and Wheler Engineers, consulting engineering firm.

AWARDS AND HONORS

Distinguished Alumnus Award, Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill (2012).

Faculty Advisor for USEPA Doctoral Fellowship awarded to one of my students (2010).

Faculty Advisor for USEPA Doctoral Fellowship awarded to one of my students (2004).

Best Paper Award, Water Science and Technology Division, American Water Works Association (2002).

Distinguished Service Award, Association of Environmental Engineering and Science Professors, for outstanding service as a Board Member of AEESP (2002).

Faculty Advisor for USEPA Doctoral Fellowship awarded to one of my students (2001).

Faculty Co-Advisor for Abel Wolman Doctoral Fellowship awarded to one of my Ph.D. students by the American Water Works Association (2000-02).

Best of Sessions Award, Texas Section, American Society of Civil Engineers, for paper presented at annual meeting (1999).

Faculty Advisor for USEPA Doctoral Fellowship awarded to one of my students (1998).

Thesis Advisor Award, Association of Environmental Engineering Professors, for advising recipient of first place award in the Montgomery Watson/AEEP Master's Thesis competition (1996).

Major Advisor Award, American Water Works Association, for advising recipient of first place award in the Master's Thesis competition (1994).

Faculty Advisor for Abel Wolman Doctoral Fellowship awarded to one of my Ph.D. students by the American Water Works Association (1991-93).

Faculty Excellence Award, College of Engineering, University of Texas (1990).

Rudolph Hering Medal, American Society of Civil Engineers, for paper which contains the most valuable contribution to the increase of knowledge in environmental engineering (1988).

Bernard G. Greenberg Award for excellence in doctoral research, University of North Carolina (1986).

Board of Governors Fellow in Science and Technology, University of North Carolina (1984).

George C. Bunker Award for scholastic excellence and professional promise in environmental engineering, University of North Carolina (1980).

Ethel Kirschenbaum Memorial Prize for most promise in civil engineering, Union College (1976).

REFEREED ARCHIVAL PUBLICATIONS

Wahman, D.W. and Speitel, G.E. Jr. "Hydroxylamine Addition Impact to *Nitrosomonas europaea* Activity in the Presence of Monochloramine," *Water Research*, 68: 719-730, 2015.

Wahman, D.W., Speitel, G.E. Jr., and Machavaram, M.V. "A Proposed Abiotic Reaction Scheme for Hydroxylamine and Monochloramine under Chloramination Relevant Drinking Water Conditions," *Water Research*, 60: 218-227, 2014.

Carter, E.M., Jackson, M.C., Katz, L.E., and Speitel, G.E. Jr. "A Coupled Sensor-Spectrophotometric Device for Continuous Measurement of Formaldehyde in Indoor Environments," *Journal of Exposure Science and Environmental Epidemiology*, 24: 305-310, 2014.

London, M.R., Wahman, D.W., Katz, L.E., and Speitel, G.E. Jr. "Zero-Valent Iron/Biotic Treatment System for Perchlorate-Contaminated Water: Lab-Scale Performance, Modeling, and Full-Scale Implications," *Journal of Environmental Engineering*, American Society of Civil Engineers, 139 (11):1361-1367, 2013.

Gomez-Alvarez, V., Schrantz, K.A., Pressman, J.G., Speitel, G.E. Jr., and Wahman, D.W. "Pyrosequencing Analysis of Bench-Scale Nitrifying Biofilters Removing Trihalomethanes," *Environmental Engineering Science*, 30(9): 582-588, 2013.

Maestre, J.P., Wahman, D.W. and Speitel, G.E. Jr. "Monochloramine Cometabolism by *Nitrosomonas europaea* under Drinking Water Conditions," *Water Research*, 47: 4701-4709, 2013.

Wahman, D.W. and Speitel, G.E. Jr. "Relative Importance of Nitrite Oxidation by Hypochlorous Acid under Chloramination Conditions," *Environmental Science and Technology*, 46(11): 6056-6064, 2012.

London, M.R., Strahota, M.D., De Long, S.K., Katz, L.E., and Speitel, G.E. Jr. "Autohydrogenotrophic Perchlorate Reduction Kinetics of a Microbial Consortium in the Presence and Absence of Nitrate," *Water Research*, 45(19): 6593-6601, 2011.

Carter, E.M., Katz, L.E., Speitel, G.E. Jr., and Ramirez, D. "Gas-Phase Formaldehyde Adsorption Isotherm Studies on Activated Carbon: Correlations of Adsorption Capacity to Surface Functional Group Density," *Environmental Science and Technology*, 45(15): 6498-6503, 2011.

Wahman, D.W., Kirisits, M.J., Katz, L.E., and Speitel, G.E. Jr. "Ammonia-Oxidizing Bacteria in Biofilters Removing Trihalomethanes Are Related to *Nitrosomonas oligotropha*," *Applied and Environmental Microbiology*, 77(7): 2537-2540, 2011.

Wahman, D.W., Katz, L.E., and Speitel, G.E. Jr. "Performance and Biofilm Activity of Nitrifying Biofilters Removing Trihalomethanes," *Water Research*, 45(4): 1669-1680, 2011.

Speitel, G.E., Jr., Kannappan, R., and Bayer, B.M. "Nitrification Index: a Unified Concept for Quantifying the Risk of Distribution System Nitrification," *Journal American Water Works Association*, 103(1): 69-80, 2011.

Alsulaili, A., Katz, L.E., and Speitel, G.E. Jr. "Monochloramine and Total Haloamine Decay After a Short Prechlorination Time in the Presence of Bromide," *Water Science and Technology: Water Supply*, 10(4): 512-516, 2010.

- Russell, C.G., Lawler, D.F., Speitel, G.E. Jr., and Katz, L.E. "Effect of Softening Precipitate Composition and Surface Characteristics on Natural Organic Matter Adsorption," *Environmental Science and Technology*, 43(20): 7873-7842, 2009.
- Russell, C.G., Lawler, D.F. and Speitel, G.E. Jr., "NOM Coprecipitation with Solids Formed during Softening," *Journal American Water Works Association*, 101(4): 112-124, 2009.
- Pope, P.G. and Speitel, G.E. Jr. "Reactivity of Bromine-Substituted Haloamines in Forming Haloacetic Acids," in *Disinfection By-Products in Drinking Water: Occurrence, Formation, Health Effects and Control*, T. Karanfil, S.W. Krasner, P. Westerhoff, Y. Xie (eds.), ACS Symposium Series, 995, American Chemical Society, Washington, DC, 2008.
- Pope, P.G., Martin Doole, M., Speitel, G.E., Jr., and Collins, M.R. "Relative Significance of Factors Influencing DXAA Formation during Chloramination," *Journal American Water Works Association*, 99(9): 144-156, 2007.
- Fairey, J.L., Katz, L.E., and Speitel, G.E. Jr. "Monochloramine Destruction with Granular Activated Carbon in Drinking Water Filters," *Journal American Water Works Association*, 99(7): 110-120, 2007.
- Lampert, D.J., Frisch, M.A., and Speitel, G.E. Jr. "Removal of Perfluorooctanoic Acid and Perfluorooctane Sulfonate from Wastewater by Ion Exchange," *Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management*, 11(1): 60-68, 2007.
- Wahman, D.W., Katz, L.E., and Speitel, G.E. Jr. "Modeling of Trihalomethane Cometabolism in Nitrifying Biofilters," *Water Research*, 41(2): 449-457, 2006.
- Wahman, D.W., Katz, L.E., and Speitel, G.E. Jr. "Cometabolism of Trihalomethanes by a Mixed-Culture Nitrifying Biofilter," *Journal American Water Works Association*, 98 (12): 48-60, 2006.
- Pope, P.G., Speitel, G.E., Jr., and Collins, M.R. "DXAA Formation Kinetics during Chloramination," *Journal American Water Works Association*, 98 (11): 107-120, 2006.
- Wahman, D.W., Katz, L.E., and Speitel, G.E. Jr. "Cometabolism of Trihalomethanes by Mixed Culture Nitrifiers," *Water Research*, 40 (18): 3349-3358, 2006.
- Kalscheur, K.N., Gerwe, C.G., Kweon, J.H., Lawler, D.F., and Speitel, G.E., Jr., "Enhanced Softening: Effects of Source Water Quality on Natural Organic Matter Removal and Disinfection By-Product Formation," *Journal American Water Works Association*, 98 (11): 93-106, 2006.
- Fairey, J.L., Speitel, G.E. Jr., and Katz, L.E. "Impact of Natural Organic Matter on Monochloramine Reduction by Granular Activated Carbon: The Role of Porosity and Electrostatic Surface Properties," *Environmental Science and Technology*, 40 (13): 4268-4273, 2006.
- Morley, M.C., Yamamoto, H., Speitel, G.E., Jr., and Clausen, J. "Fate and Transport of High Explosives in a Saturated Sandy Soil: Particle Dissolution Kinetics," *Journal of Contaminant Hydrology*, 85: 141-158, 2006.
- Morley, M.C., Speitel, G.E., Jr. and Fatemi, M. "Enhanced Desorption of RDX from Granular Activated Carbon," *Water Environment Research*, 78 (3): 312-320, 2006.
- Wahman, D.W., Katz, L.E., and Speitel, G.E. Jr. "Cometabolism of Trihalomethanes by *Nitrosomonas europaea*," *Applied and Environmental Microbiology*, 71 (12): 7980-7986, 2005.
- Pressman, J.G., Georgiou, G., and Speitel, G.E. Jr., "Scale-Up Considerations for a Hollow Fiber Membrane Bioreactor Treating Trichloroethylene-Contaminated Water," *Water Environment Research*, 77 (5): 533-542, 2005.
- Putz, A.H., Losh, D.E., and Speitel, G.E., Jr., "Removal of Nonbiodegradable Chemicals from Mixtures during GAC Bioregeneration," *Journal of Environmental Engineering*, American Society of Civil Engineers, 131 (2): 196-205, 2005.
- Morley, M.C., Henke, J.L., and Speitel, G.E., Jr., "Adsorption of RDX and HMX in Rapid Small-Scale Column Tests: Implications for Full Scale Adsorbers," *Journal of Environmental Engineering*, American Society of Civil Engineers, 131 (1): 29-37, 2005.

- Yamamoto, H., Morley, M.C., Speitel, G.E., Jr., and Clausen, J., "Fate and Transport of High Explosives in a Sandy Soil: Adsorption and Desorption," *Soil and Sediment Contamination*, 13:361–379, 2004.
- Nishijima, W. and Speitel, G.E., Jr., "Fate of Biodegradable Dissolved Organic Carbon Produced by Ozonation on Biological Activated Carbon," *Chemosphere*, 56: 113–119, 2004.
- Roalson, S.R., Kweon, J.H., Lawler, D.F., and Speitel, G.E., Jr., "Enhanced Softening: Effects of Lime Dose and Chemical Additions," *Journal American Water Works Association*, 95 (11): 85-96, 2003.
- Morley, M.C., Shammass, S.N., and Speitel, G.E., Jr., "Biodegradation of RDX and HMX Mixtures: Batch Screening Experiments and Sequencing Batch Reactors," *Environmental Engineering Science*, 19 (4): 237-250, 2002.
- Alvarez-Cohen, L. and Speitel, G.E. Jr., "Kinetics of Aerobic Cometabolism of Chlorinated Solvents," *Biodegradation*, 12 (2): 105-126, 2001.
- Liu, C.Y., Speitel, G.E. Jr., and Georgiou, G., "Kinetics of MTBE Cometabolism at Low Concentrations by Pure Cultures of Butane Degrading Bacteria," *Applied and Environmental Microbiology*, 67 (5): 2197-2201, 2001.
- Shull, T.L., Speitel, G.E. Jr., and McKinney, D.C., "Biodegradation of RDX in Unsaturated Soil," *Bioremediation Journal*, 5 (1): 1-11, 2001.
- Speitel, G.E. Jr., Symons, J.M., Davis, J.M., and Wanielista, M.M., "AOP/Biofilm Processes for DOX Precursors," *Journal American Water Works Association*, 92 (10): 59-73, 2000.
- Diehl, A.C., Speitel, G.E. Jr., Symons, J.M., Krasner, S.W., Hwang, C.J., and Barrett, S.E., "Disinfection By-Product Formation During Chloramination" *Journal American Water Works Association*, 92 (6): 76-90, 2000.
- Pressman, J.G., Georgiou, G., and Speitel, G.E. Jr., "A Hollow Fiber Membrane Bioreactor for the Removal of Trichloroethylene from the Vapor Phase," *Biotechnology and Bioengineering*, 68 (5): 548-556, 2000.
- Aziz, C.E., Georgiou, G. and Speitel, G.E. Jr. "Cometabolism of Chlorinated Solvents and Binary Chlorinated Solvent Mixtures Using *M. trichosporium* OB3b PP358," *Biotechnology and Bioengineering*, 65: 100-107, 1999.
- Pressman, J.G., Georgiou, G., and Speitel, G.E. Jr., "Demonstration of Efficient Trichloroethylene Biodegradation in a Hollow Fiber Membrane Bioreactor," *Biotechnology and Bioengineering*, 62 (6): 681-692, 1999.
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- Fitch, M.W., Weissman, D., Phelps, P., Georgiou, G., and Speitel, G.E. Jr., "Trichloroethylene Degradation by *Methylosinus trichosporium* OB3b in a Sequencing Biofilm Reactor," *Water Research*, 30 (11): 2655-2664, 1996.
- Symons, J.M., Xia, R., Diehl, A.C., Speitel, G.E. Jr., Hwang, C.J., Krasner, S.W., and Barrett, S.E., "The Influence of Operational Variables on the Formation of Dissolved Organic Halogen During Chloramination," in *Water Disinfection and Natural Organic Matter: Characterization and Control*, R.A. Minear and G.L. Amy (eds.), ACS Symposium Series 649, American Chemical Society: Washington, DC: 78-104, 1996.
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- Dvorak, B.I., Herbeck, C.J., Meurer, C.P., Lawler, D.F., and Speitel, G.E. Jr., "Selecting Among Physical/Chemical Processes for Removing Synthetic Organics from Water," *Journal of Environmental Engineering*, American Society of Civil Engineers, 122 (7): 571-580, 1996.
- Fitch, M.W., Speitel, G.E. Jr., and Georgiou, G., "Degradation of Trichloroethylene by Methanol-Grown Cultures of *Methylosinus trichosporium* OB3b PP358," *Applied and Environmental Microbiology*, 26 (3): 1124-1128, 1996.
- Symons, J.M., Krasner, S.W., Scimienti, M.J., Simms, L.A., Sorensen, H.W. Jr., Speitel, G.E. Jr. and Diehl, A.C. "Influence of Bromide Ion on Trihalomethane and Haloacetic Acid Formation," in *Disinfection By-Products in Water Treatment, The Chemistry of Their Formation and Control*, R.A. Minear and G.L. Amy (eds.), Lewis Publishers/CRC Press, Inc., Boca Raton, FL: 91-130, 1996.
- Aziz, C.E., Fitch, M.W., Linquist, L.K., Georgiou, G. and Speitel, G.E. Jr. "Methanotrophic Biodegradation of Trichloroethylene in a Hollow Fiber Membrane Bioreactor," *Environmental Science and Technology*, 29 (10): 2574-2582, 1995.
- Segar, R.L. Jr. and Speitel, G.E. Jr., "Cometabolism of Chloroethene Mixtures by Biofilms Grown on Phenol," *Bioremediation of Chlorinated Chemicals*, R.E. Hinchee, A. Leeson, and L. Semprini (eds.), Battelle Press, Columbus, OH, p. 245-253, 1995.
- Segar, R.L. Jr., DeWys, S.L. and Speitel, G.E. Jr., "Sustained Trichloroethylene Cometabolism by Phenol-Degrading Bacteria in Sequencing Biofilm Reactors," *Water Environment Research*, 67 (5): 764-774, 1995.
- Speitel, G.E. Jr. and Segar, R.L. Jr., "Cometabolism in Biofilm Reactors," *Water Science and Technology*, 31 (1): 215-225, 1995.
- Symons, J.M., Speitel, G.E. Jr., Diehl, A.C. and Sorensen, H.W., "Precursor Control in Water Containing Bromide," *Journal American Water Works Association*, 86 (6): 48-60, 1994.
- Speitel, G.E. Jr., Segar, R.L. Jr. and DeWys, S.L., "Trichloroethylene Cometabolism by Phenol-Degrading Bacteria in Sequencing Biofilm Reactors," in *Bioremediation of Chlorinated and Polycyclic Aromatic Hydrocarbon Compounds*, R.E. Hinchee, A. Leeson, L. Semprini, and S.K. Ong (eds.), Lewis Publishers, Boca Raton, FL, p. 333-338, 1994.
- Fitch, M.W., Graham, D.W., Arnold, R.G., Agarwal, S.K., Phelps, P., Speitel, G.E. Jr. and Georgiou, G., "Phenotypic Characterization of Copper-Resistant Mutants of *Methylosinus trichosporium* OB3b," *Applied and Environmental Microbiology*, 59: 2771-2776, 1993.
- Dvorak, B.I., Lawler, D.F., Speitel, G.E. Jr., Jones, D.L., and Boadway, D.A., "Selection Among Treatment Technologies for Waters Contaminated with Synthetic Organic Chemicals," *Water Environment Research*, 65 (7): 827-838, 1993.
- Speitel, G.E. Jr. and McLay, D.S., "Biofilm Reactors for the Treatment of Gas Streams Containing Chlorinated Solvents," *Journal of Environmental Engineering*, American Society of Civil Engineers, 119 (4): 658-678, 1993.
- Speitel, G.E. Jr., Symons, J.M., Diehl, A.C., Sorensen, H.W., and Cipparone, L.A., "Effect of Ozone Dose and Subsequent Biodegradation on Removal of Disinfection By-Product Precursors," *Journal American Water Works Association*, 85 (5): 86-95, 1993.
- Speitel, G.E. Jr., Thompson, R.C. and Weissman, D., "Biodegradation Kinetics of *Methylosinus trichosporium* OB3b at Low Concentrations of Chloroform in the Presence and Absence of Enzyme Competition by Methane," *Water Research*, 27 (1): 15-24, 1993.
- Phelps, P., Agarwal, S., Speitel, G.E. Jr. and Georgiou, G., "*Methylosinus trichosporium* OB3b Mutants Having Constitutive Expression of Soluble Methane Monooxygenase in the Presence and Absence of High Levels of Copper," *Applied and Environmental Microbiology*, 58 (11): 3701-3708, 1992.
- Speitel, G.E. Jr. and Leonard, J.M., "A Sequencing Biofilm Reactor for the Treatment of Chlorinated Solvents Using Methanotrophs," *Water Environment Research*, 64 (5): 712-719, 1992.
- Speitel, G.E. Jr. and Alley, E.R. Jr., "Bioremediation of Unsaturated Soils Contaminated with Chlorinated Solvents," *Journal of Hazardous Materials*, 28: 81-90, 1991.

- Speitel, G.E. Jr. and Closmann, F.B., "Chlorinated Solvent Biodegradation by Methanotrophs in Unsaturated Soils," *Journal of Environmental Engineering*, American Society of Civil Engineers, 117, (5): 541-558, 1991.
- Lu, C.J. and Speitel, G.E. Jr., "Effect of Natural Organic Matter on Biodegradation of a Recalcitrant Synthetic Organic Chemical," *Journal American Water Works Association*, 83 (2): 56-61, 1991.
- Speitel, G. E. Jr. and Zhu, X. J., "Sensitivity Analyses of Biodegradation/Adsorption Models," *Journal of Environmental Engineering*, American Society of Civil Engineers, 116 (1): 32-48, 1990.
- Speitel, G. E. Jr., Turakhia, M. H. and Lu, C. J., "Initiation of Micropollutant Biodegradation in Virgin GAC Columns," *Journal American Water Works Association*, 81 (4): 168-176, 1989.
- Speitel, G. E. Jr., Lu, C. J., Turakhia, M. H. and Zhu, X. J., "Biodegradation and Adsorption of a Bisolute Mixture in GAC Columns," *Journal Water Pollution Control Federation*, 61 (2): 221-229, 1989.
- Speitel, G. E. Jr., Lu, C. J. and Turakhia, M. H., "Biodegradation of Trace Concentrations of Substituted Phenols in GAC Columns," *Environmental Science and Technology*, 23 (1):68-74, 1989.
- Speitel, G. E. Jr., Lu, C. J. and Turakhia, M. H., "Biodegradation of Synthetic Organic Chemicals in GAC Beds," *Water Science and Technology*, 20 (11/12): 463-465, 1988.
- Speitel, G. E. Jr. and DiGiano, F. A., "Determination of Microbial Kinetic Coefficients through Measurement of Initial Rates by Radiochemical Techniques," *Water Research*, 22 (7): 829-835, 1988.
- Speitel, G. E. Jr. and DiGiano, F. A., "Biofilm Shearing under Dynamic Conditions," *Journal of Environmental Engineering*, American Society of Civil Engineers, 113 (3): 464-475, 1987.
- Speitel, G. E., Jr., Dovantzis, K. and DiGiano, F. A., "Mathematical Modeling of Bioregeneration in GAC Columns," *Journal of Environmental Engineering*, American Society of Civil Engineers, 113 (1): 32-48, 1987.
- Speitel, G. E. Jr. and DiGiano, F. A., "The Bioregeneration of GAC Used to Treat Micropollutants," *Journal American Water Works Association*, 79 (1): 64-73, 1987.
- Speitel, G. E. Jr. and Hughes, M. M., "Considerations in Modeling Activated Sludge Process," *Journal of the Environmental Engineering Division*, American Society of Civil Engineers, 108 (5): 990-1002, 1982.

REFEREED PROJECT REPORTS

- Speitel, G.E. Jr., Maestre, J.P., and Wahman, D.W. *Monochloramine Cometabolism by Ammonia-Oxidizing Bacteria*, Water Research Foundation, Denver, CO, 2014.
- Speitel, G.E., Jr., Katz, L., Chen, C.C., Stokes, S., Westerhoff, P., and Shafeiean, P., *Surface Complexation and Dynamic Transport Modeling of Arsenic Removal on Adsorptive Media*, American Water Works Association Research Foundation, Denver, CO, 2010.
- Speitel, G.E., Jr., Bayer, B.M. and Kannappan, R., *The Significance of Trihalomethanes in Preventing Distribution System Nitrification in Chloraminated Waters*, American Water Works Association Research Foundation, Denver, CO, 2010.
- Speitel, G.E. Jr., Katz, L.E., Wahman, D.W., and Fairey, J.L. *Cometabolism of Trihalomethanes in Nitrifying Biofilters*, Report No. 91100F, American Water Works Association Research Foundation, Denver, CO, 2005.
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- Speitel, G.E. Jr., Symons, J.M., Davis, J.M., and Wanielista, M.M., *Destruction of TOC and Disinfection By-Product Precursors through Advanced Oxidation and Biodegradation*, American Water Works Association Research Foundation, Denver, CO, 1999.
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NON-REFEREED CONFERENCE AND JOURNAL PUBLICATIONS

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Wahman, D.W. and Speitel, G.E. Jr. "Experiments and Simulations Reveal the Relative Significance of the Free Chlorine/Nitrite Reaction in Chloraminated Systems," *Proceedings of the Water Quality Technology Conference*, American Water Works Association, 2011.

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Katz, L., Chen, C.C., Speitel, G.E., Jr., and Stokes, S. "Modeling of Metal Ion Adsorption in Packed Bed Reactor Systems," *Abstracts of Papers, 237nd American Chemical Society National Meeting*, Salt Lake City, UT, 2009.

Kannappan, R. and Speitel, G.E., Jr. "Combined Effect of Trihalomethanes and Monochloramine on Distribution System Nitrification," *Annual Conference Proceedings*, American Water Works Association, 2008.

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Fairey, J.L., Katz, L.E., and Speitel, G.E., Jr. "Monochloramine Destruction in GAC Beds," *Proceedings of the Water Quality Technology Conference*, American Water Works Association, 2004.

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PATENTS

Constitutive Soluble Methane Monooxygenase Mutants of Methanotrophic Bacteria (May, 1994).

SPONSORED RESEARCH

<u>Title</u>	<u>Funding Agency</u>	<u>Period</u>
Monochloramine Cometabolism: the Missing Link in Understanding Disinfectant Loss during Nitrification Episodes in Distribution Systems	Water Research Foundation	1/1/11 12/31/13
<i>In-situ</i> Microbial Perchlorate Reduction: Using Molecular Biology Tools to Identify Nitrate Inhibition	Gulf Coast Hazardous Substance Research Center	9/1/06 8/31/07
Significance of Trihalomethanes in Preventing Distribution System Nitrification in Chloraminated Waters	American Water Works Association Research Foundation	9/1/05- 6/30/08
Surface Complexation and Dynamic Transport Modeling of Arsenic Removal on Adsorptive Media	American Water Works Association Research Foundation	5/1/05- 6/30/07
Treatment of Perchlorate Contaminated Water Using a Combined Biotic/Abiotic Process	Gulf Coast Hazardous Substance Research Center	9/1/03- 8/31/05
Cometabolism of Trihalomethanes in Nitrifying Biofilters	American Water Works Association Research Foundation	1/15/02 4/30/05
Removal of Trihalomethanes from Drinking Water by Cometabolism in Nitrifying Biofilters	Texas Advanced Technology Program	1/1/02 12/31/03
Acquisition of Core Instrumentation for Treatment Process Technology Research in Environmental Engineering	National Science Foundation	10/1/01- 9/30/03
Building Defined Mixed Cultures to Biodegrade Diverse Mixtures of Chlorinated Solvents in Hollow Fiber Membrane Bioreactors	Gulf Coast Hazardous Substance Research Center	9/1/00- 8/31/02
Disinfection By-Product Control During Chloramination	American Water Works Association Research Foundation	1/1/01- 6/30/03
Laboratory Fate and Transport Studies of High Explosives at the Massachusetts Miliary Reservation	Ogden Environmental and Energy Services	8/1/00- 11/30/01
Enhanced Softening for Disinfection By-Product Precursor Removal	U.S. Environmental Protection Agency	6/1/98- 5/31/01
Role of Microbial Metabolism and Cometabolism in Treating Mixtures of Biodegradable and Nonbiodegradable Chemicals in Granular Activated Carbon Columns	U.S. Environmental Protection Agency	12/1/97- 11/30/00
Microbial Cometabolism of Recalcitrant Chemicals in Contaminated Air Streams	Gulf Coast Hazardous Substance Research Center	9/1/97- 12/31/00
Treatment of High Explosives by Adsorption and Biodegradation on GAC	Dept. of Energy	1/17/97- 1/16/00
Feasibility on In Situ Remediation of High Explosives in the Vadose Zone Beneath the Pantex Plant	Dept. of Energy	1/17/97- 1/16/00
Bioremediation Model Development with UTCHEM	Waterways Experiment Station	10/1/96- 9/31/98

<u>Title</u>	<u>Funding Agency</u>	<u>Period</u>
Cometabolism of MTBE	Shell Development Corp.	9/1/96- 8/31/97
Emission Factors for Refinery Bioreactors	TNRCC	9/1/96- 8/31/97
Anaerobic Biotreatability of Acetaldehyde/Chloroform Waste	Texas Eastman	7/1/96- 5/31/97
Literature Review on the Biological Treatability of Alkylphenol Ethoxylates	Union Carbide Corp.	6/21/95- 5/31/96
Advanced Oxidation/Biodegradation Processes for the Destruction of TOC and Disinfection By-Product Precursors	American Water Works Association Research Foundation	12/1/95- 3/31/98
Treatment of Contaminated Ground Water at the Pantex Site	Dept. of Energy	10/1/94- 1/16/97
Development of Commercial Treatment Process for Chlorinated Solvents Based on Mutants of <i>Methylosinus trichosporium</i> OB3b	Texas Advanced Technology Program	1/1/94- 8/31/96
Three-Dimensional NAPL Fate and Transport Model	U.S. Environmental Protection Agency	10/1/93- 9/30/96
Factors Affecting Disinfection By-Products Formation during Chloramination	American Water Works Association Research Foundation	7/1/93 12/31/95
Hollow Fiber Membrane Reactors for Treating Water and Air Streams	Gulf Coast Hazardous Substance Research Center	5/1/93- 8/31/96
Deep Well Treatability: Migration and Remediation	ARCO Exploration and Production Technology	11/1/92- 6/30/95
Biodegradation of Chlorinated Solvents by <i>M. trichosporium</i> OB3b	Environmental Solutions Program (Univ. of Texas)	1/1/92- 5/31/93
Systematic Approach for the Selection of the Least Cost Treatment Technology for Aqueous Organic Hazardous Wastes	Gulf Coast Hazardous Substance Research Center	6/1/91- 8/31/94
Control of Disinfection By-Products and Biodegradable Organic Carbon through Ozone/GAC Treatment	U.S. Environmental Protection Agency	10/1/90- 6/30/93
Improved Biodegradation of Chlorinated Solvents Using a Methane Degrading Organism	State of Texas	1/1/90- 5/31/92
Development of Bioreactors for the Destruction of Chlorinated Solvents	Gulf Coast Hazardous Substance Research Center	6/1/89- 8/31/93
Biodegradation of Trihalomethanes in Beds Containing Sorptive Media	U.S. Environmental Protection Agency	4/10/88- 4/9/91
Biodegradation of Chlorinated Solvents in Packed Bed Reactors	Gulf Coast Hazardous Substance Research Center	1/1/88- 1/31/89
Biodegradation of Chloroaliphatic Solvents in Unsaturated Soils	U.S. Environmental Protection Agency	10/15/87- 10/15/90
Bioconversion of Solubilized Lignite to Methane	Cambridge Scientific, Inc.	8/1/87- 7/31/88

<u>Title</u>	<u>Funding Agency</u>	<u>Period</u>
Treatment of Organic Chemical Pollution by the Biodegradation/Adsorption Process	Texas Advanced Technology Research Program	1/1/86-8/31/89

PROFESSIONAL SOCIETIES

American Society of Civil Engineers
 American Water Works Association
 American Society for Microbiology
 American Chemical Society
 Association of Environmental Engineering and Science Professors
 American Society for Engineering Education

SERVICE ACTIVITIES

Journal Reviewer

Journal of Environmental Engineering, 1985-present
Environmental Science and Technology, 1989-present
Journal American Water Works Association, 1985-present
Journal of the Water Pollution Control Federation, 1990-1991
Water Environment Research, 1992-present
Water Research, 1988-present
Biotechnology and Bioengineering, 1990-present
Environmental Engineering Science, 2001-present

Research Proposal Reviewer

National Science Foundation, Environmental Engineering/Environmental Technology Proposal Review Panel, 2005.
 National Institute of Environmental Health Sciences, Superfund Basic Research and Training Program, 2005.
 Great Lakes and Mid-Atlantic Hazardous Substance Research Center, USEPA Review Committee for Continuation Proposal, Chairman, 1997
 Idaho Environmental Research Program, 1994-1995
 American Water Works Association Research Foundation Technical Proposal Review Committee for unsolicited proposals, 1991, 1998
 Great Lakes and Mid-Atlantic Hazardous Substance Research Center, 1992
 South Carolina Environmental Research Program, 1991-1992
 North Carolina Biotechnology Center, 1991

American Society of Civil Engineers

Member, Department Heads Council Executive Committee, 2005-2008.

American Water Works Association

Member, *Journal American Water Works Association* Peer Review Editorial Board, 2006-2010.
 Member, Research Foundation Project Advisory Committee on long term effects of disinfection changes on water quality, 2003-2006.
 Member, Research Foundation Project Advisory Committee on standardizing specific UV-absorbance measurements, 2001-2004.
 Member, Organic Contaminants Committee of Water Science and Technology Division, 1988-2003
 Chairman, University Student Activities Committee, 1996-1999
 Chairman, Academic Achievement Award Committee, 1996-1999
 Vice Chairman, University Student Activities Committee, 1992-1996
 Member, Research Foundation Project Advisory Committee on biological processes in drinking water treatment, 1988-1991

Water Environment Federation

- Member, University Relations Task Force, 2001-2002
- Member, National Conference Program Committee, 1996-2001
- Member, Student Activities Committee, Texas Section, 1991-2001
- Chairman, Student Activities Committee, Texas Section, 1987-1990

International Association of Water Pollution Research and Control

- Reviewer, papers for biennial conference, 1988 and 1990

Association of Environmental Engineering and Science Professors:

- Chair, Audit Committee, 2004-2006
- Member, Audit Committee, 1986, 2002-2004
- Board Member and Treasurer, 1999-2002
- Representative, AWWA Research Foundation Public Council on Drinking Water Research, 1999-2001
- Chairman, Montgomery Master's Thesis Award Committee, 1992
- Member, Montgomery Master's Thesis Award Committee, 1991

American Institute of Chemical Engineers:

- Session Vice Chairman, Summer National Meeting, 1988

Texas Natural Resource Conservation Commission

- Member, committee to update Design Criteria for Sewerage Systems, 1996-97

PROFESSIONAL ENGINEER

- New York, 1981; Texas, 1986