

## ANGELA D. KENT

*University of Illinois at Urbana-Champaign  
Natural Resources and Environmental Sciences  
1102 S. Goodwin Avenue, Urbana, IL*

*Telephone: 217-333-4216  
Fax: 217-244-3219  
E-mail: akent@illinois.edu*

### EDUCATION

**Ph.D., Bacteriology** **December, 2000**

*University of Wisconsin-Madison*

*Dissertation: "Manipulating rhizosphere microbial community structure using antibiotic-producing bacteria."*

*Advisor: Eric Triplett*

**M.S., Bacteriology** **August, 1996**

*University of Wisconsin-Madison*

**B.A., Biology** **May, 1992**

*Grinnell College*

### EXPERIENCE

**Director, Program in Ecology, Evolution, and Conservation Biology** 2014-present  
*University of Illinois at Urbana-Champaign*

**Associate Professor, Dept. of Natural Resources and Environmental Sciences** 2011-present  
*University of Illinois at Urbana-Champaign*

**Assistant Professor, Dept. of Natural Resources and Environmental Sciences** 2005-2011  
*University of Illinois at Urbana-Champaign*

**Research Associate, Civil and Environmental Engineering** December 2003 - 2005  
*University of Wisconsin-Madison*

**Research Associate, Center for Limnology** 2001-2005  
*University of Wisconsin-Madison*

**Research Assistant, Department of Bacteriology** 1996-2000  
*University of Wisconsin-Madison*

**Research Assistant, Department of Medical Microbiology and Immunology** 1992-1996  
*University of Wisconsin-Madison*

### RESEARCH EXPERIENCE

**Postdoctoral Research:** North Temperate Lakes Microbial Observatory, Center for Limnology, University of Wisconsin-Madison, 2001- present. Research advisors: Eric Triplett and Katherine McMahon

- Characterization of spatial and temporal variability in microbial community structure in temperate aquatic ecosystems
- Investigation of biogeochemical, physical and biological mechanisms that influence microbial community structure in aquatic systems

- Experimental manipulation of aquatic microbial food webs to examine the effect of trophic interactions on the composition and dynamics of microbial populations
- Characterization of microbial communities associated with mercury methylation activity in hypolimnetic waters
- Development of bioinformatics tools to aid microbial ecologists' ability to derive phylogenetic information from DNA fragment analyses ("community fingerprints")

**Doctoral Research:** Department of Bacteriology, University of Wisconsin-Madison, 1996- 2000.  
Research advisor: Eric Triplett

- Microbial ecology of the plant rhizosphere
- Ecological impact of antibiotic production by rhizosphere microorganisms, in particular rhizobial and biocontrol inoculants
- Impact of phytopathogen colonization on the structure of rhizosphere microbial communities
- Improvement of the competitiveness and yield-increasing capacity of commercial rhizobial inoculants

**Masters Research:** Department of Medical Microbiology and Immunology, University of Wisconsin-Madison, 1992- 1996. Research advisor: Rodney Welch

- Investigation of the structure and function of the hemolysin (HlyA) protein of uropathogenic *E. coli*, with particular attention to the region containing the glycine-rich repeated amino acid sequences that are the signature motif for the RTX family of cytolytic toxins
- Development of a structural model of the carboxy-terminal region of the hemolysin protein containing the RTX motif
- Investigation of the role of Ca<sup>2+</sup> binding in stabilization of the HlyA protein structure

## PUBLICATIONS

Zilles, J., L.F. Rodriguez, N.A. Bartolero, and **A.D. Kent**. 201\_. Microbial ecosystem modeling using reliability theory. *ISME Journal* (in revision).

Hathaway, S.K., M.D. Porter, L.F. Rodríguez, **A.D. Kent**, and J.L. Zilles. 201\_. Impact of the contemporary environment on denitrifying bacterial communities. *Ecological Engineering*. Accepted for publication.

He Z, Deng Y, Xiong J, Yu H, Xu M, Wu L, Xue K, Shi S, Van Nostrand JD, Hobbie SE, Reich PB, Schadt CW, **Kent A**, Pendall E, Wallenstein M, and Zhou, J. 201\_. Soil microbial genes predict ecosystem functioning and stability under elevated carbon dioxide. *Nature Climate Change* (in revision).

Xiong J, He Z, Shi S, **Kent A**, Deng Y, Wu L, Van Nostrand JD, and Zhou J. 2015. Elevated CO<sub>2</sub> shifts the functional structure and metabolic potentials of soil microbial communities in a C4 agroecosystem. *Scientific Reports* 5, Article number: 9316. doi:10.1038/srep09316.

Porter, M.D., J.M. Andrus, N.A. Bartolero, L.F. Rodriguez, R.A.C. Cooke, Y. Zhang, J.L. Zilles, and **A.D. Kent**. 2015. Seasonal patterns in microbial community composition in denitrifying biofilters treating subsurface agricultural drainage. *Microbial Ecology*, in press.

- Li, D. T.B. Voigt, A.D. Kent. 201\_. Plant and soil effects on bacterial communities associated with *Miscanthus × giganteus* rhizosphere and rhizomes. *GCB Bioenergy*, in press. DOI: 10.1111/gcbb.12252
- Amato, K.R., S.R. Leigh, **A.D. Kent**, R. Mackie, C.J. Yeoman, R.M. Stumpf, M. Gillis, B.A. Wilson, K.E. Nelson, B.A. White, P.A. Garber. 2015. The gut microbiota appears to compensate for seasonal diet variation in the wild black howler monkey (*Alouatta pigra*). *Microbial Ecology* 69:434-443. doi: 10.1007/s00248-014-0554-7
- Peralta, A.L., S. Ludmer, J.W. Matthews, A.D. Kent. 2014. Bacterial community response to changes in soil redox potential along a moisture gradient in restored wetlands. *Ecological Engineering* 73: 246–253.
- Peralta, A.L., D. Stuart, **A.D. Kent**, J.T. Lennon. 2014. A social-ecological framework for ‘micromanaging’ microbial services. *Frontiers in Ecology and the Environment* 12:524-531.
- Amato, K.R., S.R. Leigh, **A.D. Kent**, R.I. Mackie, C.J. Yeoman, R.M. Stumpf, B.A. Wilson, K.E. Nelson, B.A. White, P.A. Garber. The role of gut microbes in satisfying the nutritional demands of adult and juvenile wild, black howler monkeys (*Alouatta pigra*). *American Journal of Physical Anthropology* 155:652-664.
- Keymer, D. P. and A. D. Kent. 2014. Contribution of nitrogen fixation to first year *Miscanthus x giganteus*. *GCB Bioenergy*, 6: 577–586. doi: 10.1111/gcbb.12095
- Paver, S.F., N.D. Youngblut, R.J. Whitaker, **A.D. Kent**. 2015. Phytoplankton succession affects the composition of *Polynucleobacter* subtypes in humic lakes. *Environmental Microbiology* 17:816-28. doi:10.1111/1462-2920.12529
- Peralta, A.L., J.W. Matthews, **A.D. Kent**. 2014. Habitat specialization along a wetlands moisture gradient differs between ammonia-oxidizing and denitrifying microorganisms. *Microbial Ecology* 68:339-350. doi: 10.1007/s00248-014-0407-4
- Yang, L., **A.D. Kent**, X. Wang, T.L. Funk, R.S. Gates, Y. Zhang. 2014. Moisture effects on gas-phase biofilter ammonia removal efficiency, nitrous oxide generation, and microbial communities. *Journal of Hazardous Materials* 271: 292-301.
- Andrus, J.M., M.D. Porter, L.F. Rodriguez, T. Kuehlhorn, Y. Zhang, **A.D. Kent**, and J.L. Zilles. 2014. Spatial variation in the bacterial and denitrifying bacterial community in a biofilter treating subsurface agricultural drainage. *Microbial Ecology* 67: 265-272.
- Peralta, A.L., S. Ludmer, **A.D. Kent**. 2013. Hydrologic history constrains microbial community composition and nitrogen transformations under experimental drying/wetting treatments. *Soil Biology & Biochemistry* 66: 29-37.
- He, Z., J. Xiong, **A.D. Kent**, Y. Deng, K. Xue, G. Wang, L. Wu, J.D. Van Nostrand, and J. Zhou. 2014. Distinct responses of soil microbial communities to elevated CO<sub>2</sub> and O<sub>3</sub> in a soybean agroecosystem. *ISME Journal* 8:714–726.
- Paver, S.F., K.R. Hayek, A. Giongo, K.A. Gano, J.R. Fagen, C.R. Brown, A.G. Davis-Richardson, D.B. Crabb, R. Rosario. E.W. Triplett, **A.D. Kent**. 2013. Taxon-specific responses to phytoplankton assemblages contribute to lake bacterial community succession. *Environmental Microbiology* 15:2489-2504.

Amato, K.R., C.J. Yeoman, **A.D. Kent**, N. Righini, A. Estrada, R.M. Stumpf, S. Yildirim, M. Torralba, M. Gillis, B.A. Wilson, K.E. Nelson, B.A. White, S.R. Leigh. 2013. Habitat degradation impacts primate gastrointestinal microbiomes. *ISME Journal*, 7: 1344-1353.

Khullar, E., **A.D. Kent**, T.D. Leathers, K.M. Bischoff; K.D. Rausch, M.E. Tumbleson, V. Singh. 2013. Contamination issues in a continuous ethanol production corn wet milling facility. *World Journal of Microbiology and Biotechnology* 29:891-898.

Paver, S.F., C.E. Nelson, **A.D. Kent**. 2013. Temporal succession of glycolate-utilizing bacterioplankton tracks changes in dissolved organic matter in a high-elevation lake. *FEMS Microbiology Ecology* 83:541-551.

Rigonato, J., **A.D. Kent**, D.O. Alvarenga, F.D. Andreote, R.M. Beirigo, B. Vidal-Torrado, M.F. Fiore. 2013. Drivers of cyanobacterial diversity and community composition in mangrove soils in southeast Brazil. *Environmental Microbiology* 15:1103-1114.

Peralta, A.L., J.W. Matthews, D. N. Flanagan, and **A.D. Kent**. 2012. Environmental factors at dissimilar spatial scales influence plant and microbial communities in restored wetlands. *Wetlands* 32(6):1125-1134.

Rigonato, J., D. Alvarenga, F.D. Andreote, A. Dias, I. Melo, **A.D. Kent**, M. Fiore. 2012. Cyanobacterial diversity in the phyllosphere of a mangrove forest. *FEMS Microbiology Ecology* 80:312-322.

Brawn, J., M.P. Ward, **A.D. Kent**. 2012. Biodiversity, Species Loss, and Ecosystem Function. In *Sustainability: A Comprehensive Foundation*. T. Theis and J. Tomkin, eds. University of Illinois Open Source Textbook Initiative, Connexions <http://cnx.org/content/col11325/latest>

Yeoman, C.J., N. Chia, S. Yildirim, M.E. Berg Miller, **A.D. Kent**, R. Stumpf, S.R. Leigh, K.E. Nelson, B.A. White, and B.A. Wilson. 2011. Towards an evolutionary model of animal-associated microbiomes. *Entropy* 13(3):570-594.

Paver, S.F. and **A.D. Kent**. 2010. Temporal patterns in glycolate-utilizing bacterial community composition correlate with phytoplankton population dynamics in humic lakes. *Microbial Ecology* 60:406-418.

Peralta, A.L., J.W. Matthews, and **A.D. Kent**. 2010. Microbial community structure and denitrification function in a wetland mitigation bank. *Applied and Environmental Microbiology* 76:4702-4215.

**Kent, A.D.** and Z.L. Bayne. 2010. Degraded water quality influences microbial community composition and perception of health risks in the Chattooga River. *DNA and Cell Biology*, 29: 509-517.

Davis, S.C., W.J. Parton, F.G. Dohleman, C.M. Smith, S. Del Grosso, **A.D. Kent**, and E.H. DeLucia. 2010. Comparative biogeochemical cycles and sustainability of bioenergy crops. *Ecosystems*. 13:144-156

Yannarell, A.C. and **A.D. Kent**. 2010. Bacteria, distribution and community structure. In *Plankton of Inland Waters*, G. Likens, ed. Elsevier, San Diego, CA. pp 35-44.

Johnston, A.R., T.R. Gillespie, I.B. Rwego, T.L. Tranby-McLachlan, **A.D. Kent**, T.L.

- Goldberg. 2010. Molecular epidemiology of cross-species *Giardia duodenalis* transmission among people, livestock, and wild non-human primates in western Uganda. *PLoS Neglected Tropical Diseases* 4: e683. doi:10.1371/journal.pntd.0000683
- Matthews, J.W., A.L. Peralta, D.N. Flanagan, P.M. Baldwin, A. Soni, **A.D. Kent**, and A.G. Endress. 2009. Relative influence of landscape versus local factors on plant community assembly in restored wetlands. *Ecological Applications* 19: 2108-2123.
- Matthews, J.W., A.L. Peralta, A. Soni, P. Baldwin, **A.D. Kent**, and A.G. Endress. 2009. Local and landscape correlates of non-native species invasion in restored wetlands. *Ecography*, 32:1031-1039.
- Yannarell, A.C., and **A.D. Kent**. 2009. Bacteria, distribution and community structure. *Encyclopedia of Inland Waters*, Gene Likens (ed.). Oxford: Elsevier.
- Rusak, J.A., S.E. Jones, **A.D. Kent**, A.L. Shade, K.D. McMahon. 2009. Spatial synchrony in microbial community dynamics: testing among-year and lake patterns. *Verhandlungen der Internationalen Vereinigung für Theoretische und Angewandte Limnologie* 30(6):936-940.
- Kent, A.D.**, A.C. Yannarell, J.A. Rusak, E.W. Triplett, and K.D. McMahon. 2007. Synchrony in aquatic microbial community dynamics. *The ISME Journal* 1:38-47.
- Roesch, L.F.W., R.R. Fulthorpe, A. Riva, G. Casella, A.K.M. Hadwin, **A.D. Kent**, S.H. Daroub, F.A.O. Camargo, W.G. Farmerie, and E.W. Triplett 2007. Pyrosequencing enumerates and contrasts soil microbial diversity. *The ISME Journal* 1: 283-290.
- Shade, A.L., **A.D. Kent**, S.E. Jones, R.J. Newton, E.W. Triplett, and K.D. McMahon. 2007. Inter-annual dynamics and phenology of bacterial communities in a eutrophic lake. *Limnology and Oceanography* 52: 487-494.
- Jones, S.E., A.L. Shade, K.D. McMahon, **A.D. Kent**. 2007. Comparison of primer sets for use in automated ribosomal intergenic spacer analysis (ARISA) of aquatic bacterial communities: an ecological perspective. *Applied and Environmental Microbiology* 73:659-662.
- Kent, A.D.**, S.E. Jones, G.H. Lauster, J.M. Graham, R.J. Newton, and K.D. McMahon. 2006. Experimental manipulations of microbial food web interactions in a humic lake: shifting biological drivers of bacterial community structure. *Environmental Microbiology* 8:1448-1459.
- Newton, R. J., **A. D. Kent**, E. W. Triplett, and K. D. McMahon. 2006. Microbial community dynamics in a humic lake: differential persistence of common freshwater phylotypes. *Environmental Microbiology* 8:956-970.
- Balser, T., K. McMahon, D. Bart, D. Bronson, D.R. Coyle, N. Craig, M. Flores-Mangual, K. Forshay, S. Jones, **A. Kent**, A. Shade. 2006. Bridging the gap between micro- and macro-scale perspectives on the role of microbial communities in global change ecology. *Plant and Soil* 289:59-70.
- Watras, C.J., K.A. Morrison, **A.D. Kent**, N. Price, O. Regnell, C. Eckley, H. Hintelmann, and T. Hubacher. 2005. Sources of methylmercury to a wetland-dominated lake in northern Wisconsin. *Environmental Science and Technology* 39:4747-4758.

Eckley, C., C. Watras, H. Hintelmann, **A.D. Kent**, and O. Regnell. 2005. Mercury methylation in the hypolimnetic waters of lakes with and without connection to wetlands in northern Wisconsin. *Canadian Journal of Fisheries and Aquatic Science* 62:400-411.

Jacob, C., **A.D. Kent**, B.J. Benson, R.J. Newton, and K.D. McMahon. 2005. Biological databases for linking large microbial and environmental datasets. *Proc. 9th World Multiconference on Systematics, Cybernetics and Informatics* Vol VII: Informatics Systems Development II, July 14-18, 2002, Orlando, FL.

**Kent, A.D.**, S.E. Jones, A.C. Yannarell, J.M. Graham, G.H. Lauster, T.K. Kratz, and E.W. Triplett. 2004. Annual patterns in bacterioplankton community variability in a humic lake. *Microbial Ecology* 48(4):550-560.

Graham, J.G., **A.D. Kent**, G.H. Lauster, A.C. Yannarell, L.E. Graham, T.K. Kratz, and E.W. Triplett. 2004. Seasonal dynamics of phytoplankton and protoplankton communities in a northern temperate humic lake: diversity in a dinoflagellate dominated system. *Microbial Ecology* 48(4):528-540.

Iniguez, A.L., E.A. Robleto, **A.D. Kent**, and E.W. Triplett. 2004. Significant yield increase in *Phaseolus vulgaris* obtained by inoculation with a trifolitoxin-producing, Hup<sup>+</sup> strain of *Rhizobium leguminosarum* bv. phaseoli. *Crop Management*. Online: <http://www.plantmanagementnetwork.org/sub/cm/review/2004/yield/>

**Kent, A.D.**, D.J. Smith, B.J. Benson, and E.W. Triplett. 2003. A web-based phylogenetic assignment tool for analysis of terminal restriction length polymorphism profiles of microbial communities. *Applied and Environmental Microbiology* 69:6768-6776.

Yannarell, A.C., **A.D. Kent**, G.H. Lauster, T.K. Kratz, and E.W. Triplett. 2003. Temporal patterns in bacterial communities in three temperate lakes of different trophic status. *Microbial Ecology* 46:391-405.

**Kent, A.D.** and E.W. Triplett. 2002. Microbial communities and their interactions in soil and rhizosphere ecosystems. *Annual Review of Microbiology* 56:211-236.

**Kent, A.D.**, M.L. Wojtasiak, E.A. Robleto, and E.W. Triplett. 1998. A transposable partitioning locus used to stabilize plasmid-borne hydrogen oxidation and trifolitoxin production genes in a *Sinorhizobium* strain. *Applied and Environmental Microbiology* 64:1657-1662.

Welch R.A., M.E. Bauer, **A.D. Kent**, J.A. Leeds, M. Moayeri, L.B. Regassa, and D.L. Swenson. 1995. Battling against host phagocytes: the wherefore of the RTX family of toxins? *Infectious Agents and Disease* 4:254-272.

#### *Submitted manuscripts*

Peralta, A.L., E.R. Johnston, J.W. Matthews, A.D. Kent. Abiotic correlates of microbial community structure and nitrogen cycling functions vary within wetlands. Submitted to *Freshwater Science*.

Jessop, J., G. Spyreas, G.E. Pociask, T.J. Benson, M.P. Ward, A.D. Kent, and J.W. Matthews. Tradeoffs among ecosystem services in restored wetlands. *Biological Conservation*, in revision.

**FUNDING**

Angela D. Kent. Investigating the Biological Basis of Soil Fertility: The Effect of Sustainable Management Practices on Microbial Populations That Contribute to Efficient Nutrient Cycling. Illinois Department of Agriculture. 2007. \$13,750

Angela D. Kent and Rachel J. Whitaker. Forces driving microbial community diversity and composition in humic lakes. NSF Microbial Observatories. 2007-2011. \$687,284.

Angela D. Kent. Ecology and exploitation of endophytic diazotrophic bacteria in biofuel crops. Energy Biosciences Institute. 2008-2011. \$608,291.

Angela D. Kent and Rachel J. Whitaker. Forces driving microbial community diversity and composition in humic lakes (REU Supplement). NSF Microbial Observatories. 2008. \$12,000.

Angela D. Kent and Rachel J. Whitaker. Forces driving microbial community diversity and composition in humic lakes (REU Supplement). NSF Microbial Observatories. 2009. \$9,500.

Angela D. Kent. Linking microbial community structure to water quality function: Investigating nitrogen cycling during early floodplain development. UIUC Research Board Arnold O. Beckman Award. 2009. \$9,784.

Julie Zilles, Angela D. Kent, and Luis Rodriguez. Identifying design principles for engineered ecosystems: denitrifying biofilters for sustainable agriculture, NSF: Environmental Sustainability. 2009-2012. \$399,276.

Luis Rodriguez and Angela D. Kent. Role of microbial community dynamics in sequestration of carbon in soil columns. Environmental Change Institute. 2009-2010. \$24,955.

Angela D. Kent. Linking microbial community structure to water quality function: investigating nitrogen cycling during early floodplain development. Illinois Water Resource Center. 2010-2011. \$37,662.

Luis Rodriguez and Angela D. Kent. Development of a Soil Organic Carbon Model Targeting Sustainability. UIUC Research Board. 2010-2011. \$21,000.

Angela D. Kent and Rachel J. Whitaker. Forces driving microbial community diversity and composition in humic lakes (ROA Supplement). NSF Microbial Observatories. 2010. \$25,000.

Angela D. Kent and Rachel J. Whitaker. Forces driving microbial community diversity and composition in humic lakes (REU Supplement). NSF Microbial Observatories. 2010. \$7,000.

Angela D. Kent. Monitoring redox potential and the response of soil microbial communities along an environmental gradient during early floodplain management. National Great Rivers Research and Education Center. 2010. \$6,000.

Daniel W. Schneider and Angela D. Kent. Using Ecological Theory of Alternate Stable States to Improve Sewage Treatment Plant Operation (Seed Grant). Illinois-Indiana Sea Grant. 2010. \$9,962.

Angela D. Kent and Sara F. Paver. Effects of phytoplankton on bacterial community structure across varying temperature and light contexts. NSF Doctoral Dissertation Improvement Grant. 2011. \$14,890.

Angela D. Kent. Forces driving microbial community diversity and composition in humic lakes (REU Supplement). NSF Microbial Observatories. 2011. \$7,000.

Angela D. Kent. Forces driving microbial community diversity and composition in humic lakes (REU Supplement). NSF Microbial Observatories. 2012. \$7,000.

Angela D. Kent. Forces driving microbial community diversity and composition in humic lakes (ROA Supplement). NSF Microbial Observatories. 2012. \$25,371.

Richard S. Gates, Ted Funk, Angela D. Kent, Laura Pepple. Microbial community analysis to identify risk factors in manure foaming. National Pork Board. 2011. \$29,983.

Angela D. Kent. Understanding the role of nitrogen-fixing bacterial communities in invasion by *Miscanthus sinensis*. UIUC Research Board. 2012. \$29,620.

Jeff Dangl, Angela D. Kent, Rob Knight, Ruth Ley, Tom Mitchell-Olds, Peter Reich, Susannah Tringe, Tanja Woyke. Plant associated metagenomes – Microbial community diversity and host control of community assembly across model and emerging plant ecological genomics systems. DOE Joint Genome Institute Community Sequencing Program. 2012. Sequencing of microbial rRNA genes associated with >50,000 plant-associated microbial samples. No funding is awarded, just sequencing capacity at JGI. [Kent submitted 1800 *Miscanthus*-associated samples for microbial sequence analysis. This sequencing capacity would be worth ~\$150,000 at the UIUC Keck Center for Functional Genomics.]

Angela D. Kent. Trajectories of microbial community structure and function in restored wetlands. National Great Rivers Research and Education Center. 2012. \$6,000.

Richard S. Gates, Angela D. Kent, Ted Funk, Laura Pepple. Identifying the cause and subsequent remediation of foaming in swine manure management systems. Iowa Pork Board. 2012-2014. \$271,475.

Angela D. Kent. Restoration trajectories of restored floodplain forests and their ecosystem services. USDA McIntire-Stennis Cooperative Forestry Research Program. 2012-2015. \$100,000.

Angela D. Kent. Response of floodplain microbial communities to altered hydrological regimes. National Great Rivers Research and Education Center. 2013. \$6,000.

Angela D. Kent. Restoration trajectories of restored floodplain wetlands and their ecosystem services. Illinois Water Resources Center. 2013-2014. \$10,000.

Angela D. Kent and Natalie Stevenson. Year-round wetland microbial activity impacts on nitrogen cycling annual budgets: is restoration impacting greenhouse gas emissions in wetlands? Illinois Water Resources Center. 2014-2015. \$10,000.

Angela D. Kent. NGRREC Faculty Fellow. 2014-2015. \$25,000.

Richard S. Gates, Angela D. Kent, Laura Pepple. 2015-2016. National Pork Board. Microbial ecology evaluation of foam production in swine deep-pit manure storages. \$113,877.

Julie Zilles, Sotiria Koloutsou-Vakakis, and Angela Kent. Nitrogen emissions associated with nutrient management practices: measurements, modeling, and microbial communities. USDA-AFRI Program Area: Renewable Energy, Natural Resources, and Environment, Priority 1.



Nitrogen and Phosphorus Cycling, Sub-priority Area – Management practices and/or processes. 2015-2018. \$475,000.

#### AWARDS AND RECOGNITION

- 1998 Gurine Gjermundson-Gulsteen Graduate Research Fellowship. *Awarded annually to a UW-Madison graduate student seeking to solve practical problems that Wisconsin farmers confront in their daily lives.*
- 2008 ACES Academy for Global Engagement Scholar. *A year-long experience focusing on enhancing participation in global activities at the campus, state, and national levels.*
- 2006 – 2012 Included on the “List of Teachers Ranked as Excellent by Their Students,” Spring 2006, Fall 2008, Spring 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011, Spring 2012.
- 2009 Arnold O. Beckman Research Award. *Awarded by the University of Illinois Research Board to support projects of special distinction or special promise.*
- 2011 College of ACES Faculty Award for Excellence in Teaching
- 2012 Teacher Fellow Award, North American Colleges and Teachers of Agriculture
- 2014 NGRREC Faculty Fellow

#### INVITED PRESENTATIONS

**Kent, A.D.** Harnessing the plant microbiome: pathways toward sustainable crop production. Invited presentation for Phytobiomes 2015: Designing a New Paradigm for Crop Improvement, hosted by the Phytobiomes Initiative, Washington, DC. June 30 – July 2, 2015.

**Kent, A.D.** Disentangling drivers of aquatic microbial community dynamics. Invited presentation for the Distinguished Speakers in Microbiology series, Microbiology Department at the University of Wisconsin-La Crosse. November 7, 2014.

**Kent, A.D.** Microbial ecology of marine mammal habitats. Invited presentation for the Department of Biological Sciences, Western Michigan University. April 18, 2014.

**Kent, A.D.** Assessing the *Miscanthus*-associated microbiome: prospects for improving sustainability. Invited presentation for the Cluster of Excellence in Plant Sciences, University of Cologne, Germany. September 6, 2013.

**Kent, A.D.** Microbial ecology of marine mammal habitats. Invited presentation for the Animal Health Group at the Shedd Aquarium, Chicago, IL. August 22, 2013.

**Kent, A.D.** Micro-managing sustainability: Ecology of diazotrophs associated with *Miscanthus*. Invited presentation for the 2<sup>nd</sup> Workshop on Genetics of Maize-Microbe Interactions. Donald Danforth Plant Science Center, Saint Louis, MO. February 24-27, 2013.

**Kent, A.D.** Disentangling drivers of aquatic microbial community dynamics. Invited presentation for the Department of Biological Sciences, Eastern Illinois University, Charleston, IL. November 26, 2012.

**Kent, A.D.** Animal House: Microbial ecology of animal housing environments. Invited presentation for the Institute of Ecology and Evolution and the Center for Biology of the Built Environment, University of Oregon, Eugene, OR. November 13, 2012.

**Kent, A.D.** Micro-managing sustainability: Ecology of diazotrophs associated with *Miscanthus*. Invited presentation for the 13<sup>th</sup> Symposium on Nitrogen Fixation with Non-Legumes, Munich, Germany. September 6-7, 2012.

**Kent, A.D., A.R. Green, C. Chu, G.T. Sales and R.S. Gates.** Management factors influence microbial ecology in commercial poultry housing. Invited oral presentation at the 97<sup>th</sup> Ecological Society of America Annual Meeting, Portland, OR. August 5-10, 2012.

**Kent, A.D.** Micro-managing sustainability: Ecology of the *Miscanthus*-associated microbiome. Invited presentation for the 28<sup>th</sup> New Phytologist Symposium: Functions and ecology of the plant microbiome. Rhodes, Greece, 18–21 May, 2012.

**Kent, A.D.** Micro-managing sustainability: Ecology of diazotrophic bacteria associated with perennial grasses. Invited presentation for the School of Biological Sciences, Illinois State University. Bloomington, IL. March 1, 2012.

**Kent, A.D.** Disentangling drivers of aquatic microbial community dynamics. Invited presentation at the Keystone Symposia on Molecular and Cellular Biology focused on Microbial Communities as Drivers of Ecosystem Complexity. Breckenridge, CO. March 25-30, 2011.

**Kent, A.D.** Micro-managing sustainability: Ecology of diazotrophic bacteria associated with perennial grasses. Invited presentation for the Molecular Biology, Microbiology, and Biochemistry Seminar, Southern Illinois University, Carbondale, IL. September 10, 2010.

**Kent, A.D.** Potential for nitrogen fixation to contribute to sustainability of biofuel feedstock production. Invited oral presentation at the 95<sup>th</sup> Ecological Society of America Annual Meeting, Pittsburgh, PA. August 1-6, 2010.

**Kent, A.D.** Assessing the effects of land use change on microbial communities and their activities. Oral presentation to the Illinois State Geological Survey, Champaign, IL. October 5, 2009.

**Kent, A.D.** Exploring the broader impacts of bioenergy: ACES Global Academy Immersion Trip to Brazil. Presentation at the ACES Academy for Global Engagement graduation reception. December 16, 2008.

**Kent, A.D.** Ecology and exploitation of endophytic diazotrophic bacteria in biofuel crops. Invited oral presentation at University of São Paulo Escola Superior de Agricultura Luiz de Queiroz (ESALQ), Piracicaba, Brazil. November 19, 2008.

**Kent, A.D.** Biological drivers of microbial community dynamics: Using molecular biology to understand links between phytoplankton and aquatic microbial communities. Invited oral presentation in the Young Investigators in Aquatic and Fisheries Science Seminar Series, University of Washington, Seattle, WA. October 16, 2008.

**Kent, A.D.** Understanding links between phytoplankton and aquatic microbial communities. Invited oral presentation at International Workshop on Aquatic Microbial Community Dynamics, Uppsala University, Sweden. September 29 – October 4, 2008.

**Kent, A.D.** Examining drivers of microbial community dynamics in aquatic ecosystems. Invited oral presentation to the Ecology, Evolutionary and Behavior program at Indiana University, Bloomington, IL. December 7, 2007.

Peralta, A.L., J.W. Matthews, D.N. Flanagan, and **A.D. Kent**. 2007. Microbial community structure and function in restored floodplain forest wetlands. Invited presentation for the International Symposium on Soil Biodiversity and Ecology. Taipei, Taiwan, September 9-14, 2007.

**Kent, A.D.**, A.C. Yannarell, J.A. Rusak, E.W. Triplett, K.D. McMahon. Synchrony in aquatic microbial community dynamics. Invited colloquium presentation at the 107<sup>th</sup> General Meeting of the American Society for Microbiology, in Toronto, Ontario. May 21-25, 2007.

**Kent, A.D.** Comparing microbial community composition in natural and managed aquatic ecosystems. Invited presentation, Managing Cetaceans for Optimal Health workshop, Shedd Aquarium, Chicago, Illinois, May 17-18, 2007.

**Kent, A.D.** Opening the “black box” of microbial ecology: examining drivers of microbial community dynamics in aquatic ecosystems. Program in Ecology & Evolutionary Biology, University of Illinois at Urbana-Champaign. December 6, 2006.

**Kent, A.D.** Using the tools of informatics for planning collaborative research. Gamma Sigma Delta Graduate Fellowship Recognition Reception, University of Illinois at Urbana-Champaign. November 2, 2006.

**Kent, A.D.** Two microbial tales: bacterial dynamics and mercury methylation in Wisconsin waters. Institute of Marine Sciences, University of North Carolina at Chapel Hill, May 20, 2005.

**Kent, A.D.**, K.D. McMahon, L. Torrey. Integrating the three pillars: drawing upon the DELTA learning community to design, implement, and assess an interactive "virtual lab" to support a variety of learning styles. University of Wisconsin-Madison, April 27, 2005.

**Kent, A.D.**, C. Jacob, A.C. Yannarell, R.J. Newton, B.J. Benson, E.W. Triplett, and K.D. McMahon. Linking fingerprints, phylogeny and environmental data at the North Temperate Lakes Microbial Observatory. Oral presentation at the 3<sup>rd</sup> Annual Microbial Observatories PI Workshop, Big Sky, MT. September 12-14, 2004.

## PRESENTATIONS

Li, D. and **A.D. Kent**. The effects of plant genotypes and local soil on diazotrophs associated with *Miscanthus*. Oral presentation at the 14th International Symposium on Nitrogen Fixation with Non-Legumes, Chengdu, China. October 30 – November 3, 2014.

Li, D. and **A.D. Kent**. Plant genotype affects the structure of the *Miscanthus*-associated microbiome. Oral presentation at the 99<sup>th</sup> Annual Meeting of the Ecological Society of America, Sacramento, CA. August 10-15, 2014.

Cohen, D.B., N.A. Stevenson, **A.D. Kent**. Patterns in microbial community assembly in restored wetlands have ramifications for denitrification capacity. Poster presentation at the Joint Aquatic Sciences Meeting, Portland, OR. May 18-23, 2014.

Paver, S.F. and **A.D. Kent**. Changes in temperature and light availability affect phytoplankton-bacterial interactions in humic lakes. Oral presentation to the Joint Aquatic Sciences Meeting, Portland, OR. May 18-23, 2014.

Li, D., T. Voigt, and **A.D. Kent**. Plant and soil effects on bacterial communities associated with *Miscanthus × giganteus* rhizosphere and rhizomes. Poster presentation at the 98<sup>th</sup> Annual Meeting of the Ecological Society of America, Minneapolis, MN. August 4-9, 2013.

Cohen, D.B. and **A.D. Kent**. Environmental variability shapes microbial community response to altered hydrology in an Illinois wetland. Poster presentation at the 98<sup>th</sup> Annual Meeting of the Ecological Society of America, Minneapolis, MN. August 4-9, 2013.

Paver, S.F. and **A.D. Kent**. Temporal patterns in aquatic bacterial communities: what do phytoplankton have to do with it? Oral presentation at the 98<sup>th</sup> Annual Meeting of the Ecological Society of America, Minneapolis, MN. August 4-9, 2013.

Paver, S.F. and **A.D. Kent**. Effects of phytoplankton interactions on bacterial community composition are temperature-dependent. Oral presentation at the 2013 ASLO Aquatic Sciences Meeting, New Orleans, LA. February 17-22, 2013.

Paver, S.F., **A.D. Kent**, and R.J. Whitaker. Phytoplankton affect the composition of bacterial within the *Polynucleobacter* genus. Poster presentation at the 2013 ASLO Aquatic Sciences Meeting, New Orleans, LA. February 17-22, 2013.

**Kent, A.D.** Micro-managing sustainability: Ecology of the *Miscanthus*-associated microbiome. Oral presentation at the 4<sup>th</sup> Annual Argonne Soil Metagenomics Meeting, Chicago, IL. October 3–5, 2012.

Paver, S.F., **A.D. Kent**. Context matters: Effects of phytoplankton on bacterial community composition change across varying temperature and light conditions. Oral presentation at the 97<sup>th</sup> Annual Meeting of the Ecological Society of America, Portland, OR. August 5-10, 2012.

Peralta, A.L. C.M. Ugarte, M.M. Wander, **A.D. Kent**. The biological basis of soil fertility: Microbial community response to organic transition strategy. Oral presentation at the 97<sup>th</sup> Annual Meeting of the Ecological Society of America, Portland, OR. August 5-10, 2012.

Amato, K. R., C.J. Yeoman, **A.D. Kent**, N. Righini, F. Carbonero, A. Estrada, H.R. Gaskins, R.M. Stumpf, S. Yildirim, M. Torralba, M. Gillis, B.A. Wilson, K.E. Nelson, B.A. White, S.R. Leigh. Spatial and temporal variation in the gut microbiome of wild, black howler monkeys (*Alouatta pigra*). Oral presentation at the 97<sup>th</sup> Annual Meeting of the Ecological Society of America, Portland, OR. August 5-10, 2012.

Li, D. and **A.D. Kent**. Ecology of diazotrophs associated with *Miscanthus*. Poster presentation at the 28<sup>th</sup> New Phytologist Symposium: Functions and ecology of the plant microbiome. Rhodes, Greece, May 18–21, 2012.

**Kent, A. D.**, L. Pepple, T. Funk, R. Gates. Analysis of microbial communities associated with manure foaming. Oral presentation to PIs and stakeholders, Iowa Pork Board, May 8-9, 2012.

Peralta, A.L., J.W. Matthews, E. Johnston, S. Ludmer, and **A.D. Kent**. Abiotic controls on community structure and function of nitrogen cycling microorganisms in wetland ecosystems.

Oral presentation at the 96<sup>th</sup> Annual Meeting of the Ecological Society of America, Austin TX. August 7-12, 2011.

Paver, S.F., K.R. Hayek, E.W. Triplett and **A.D. Kent**. Phytoplankton succession and lake bacterial community dynamics. Oral presentation at the 96<sup>th</sup> Annual Meeting of the Ecological Society of America, Austin TX. August 7-12, 2011.

Chang, Y., W.R. Hill, and **A.D. Kent**. Bacterial community composition in stream biofilms is influenced by algal response to light and nutrient ratios. Poster presentation at the 111th General Meeting of the American Society for Microbiology, New Orleans, LA. May 21-24, 2011.

Hayek, K. S. Paver, **A. Kent**. Influence of light and carbon source on bacterial community structure. Poster and oral presentation at the 111th General Meeting of the American Society for Microbiology, New Orleans, LA. May 21-24, 2011. *First author is an ASM Undergraduate Research Fellow.*

Lemke, M.J. and **A.D. Kent**. Comparison of Microbial Community Dynamics in Sediments from an Established and a Restored Illinois River Floodplain Lake. Poster presentation at the 111th General Meeting of the American Society for Microbiology, New Orleans, LA. May 21-24, 2011.

Li, D., D.P. Keymer, **A.D. Kent**. Ecology of nitrogen-fixing bacteria associated with a perennial grass biofuel crop. Poster presentation at the 111th General Meeting of the American Society for Microbiology, New Orleans, LA. May 21-24, 2011.

Peralta, A.L., J.W. Matthews, **A.D. Kent**. Assessment of abiotic controls on microbial community structure and function: Linking microbial community structure and water quality function in restored floodplain wetlands. Oral presentation at the Midwest Society for Ecological Restoration Chapter Annual Meeting, University of Illinois, Springfield, IL. April 1-3, 2011.

Amato, K.R, **A.D. Kent**, R.I. Mackie, A. Estrada, P.A. Garber. The gut microbes and foraging behavior of wild, black howler monkeys (*A. pigra*) in Palenque National Park, Mexico. Poster presentation at the 13th International Symposium on Microbial Ecology, Seattle, WA. August 22-27, 2010.

Paver, S., K. Hayek, **A. Kent**. Algal populations influence lake bacterial community structure. Poster presentation at the 13th International Symposium on Microbial Ecology, Seattle, WA. August 22-27, 2010.

Paver, S., **A. Kent**. Particle attachment as a habitat filter for lake freshwater bacterial assemblages. Poster presentation at the 13th International Symposium on Microbial Ecology, Seattle, WA. August 22-27, 2010.

Peralta, A.L., J.W. Matthews, **A.D. Kent**. Linking microbial community structure to water quality function: Investigating nitrogen cycling influenced by hydrology in wetland ecosystems. Poster presentation at the 13th International Symposium on Microbial Ecology, Seattle, WA. August 22-27, 2010.

Porter, M, L. Rodriguez, J. Andrus, **A. Kent**, J. Zilles. Temporal dynamics of fungal communities in denitrifying biofilters receiving agricultural runoff. Poster presentation at the 13th International Symposium on Microbial Ecology, Seattle, WA. August 22-27, 2010.

Keymer, D.P., Y. Mao, R.I. Mackie, and **A.D. Kent**. Species-specific bacterial assemblages associated with potential bioenergy grasses. Poster presentation at the 13th International Symposium on Microbial Ecology, Seattle, WA. August 22-27, 2010.

Lemke, M, J. **A.D. Kent**, F. Velho, M. Randle, D. Kellerhals. Microbial communities in two Illinois River floodplain lakes differing in restoration status. Poster presentation at the 95th Ecological Society of America Annual Meeting, Pittsburgh, PA. August 1-6, 2010.

**Kent, A.D.**, D.P. Keymer, Y. Mao. Ecology of nitrogen-fixing bacteria associated with a perennial grass biofuel crop. Invited oral presentation at the 95th Ecological Society of America Annual Meeting, Pittsburgh, PA. August 1-6, 2010.

**Kent, A.D.** Micro-managing wetland restoration. Oral presentation in a special session at the 95th Ecological Society of America Annual Meeting, Pittsburgh, PA. August 1-6, 2010.

Peralta, A.L., J.W. Matthews, and **A.D. Kent**. Investigating variation in microbial community composition along a moisture gradient. Poster presentation at the Emiquon Science 2010 Conference, Dickson Mounds Museum, Lewistown, IL. March 4, 2010.

Lemke, M. F. Velho, **A.D. Kent**, K. Dungey, D. Kellerhaus, and M. Randle. Water quality and microbial ecology of Thompson Lake. Poster presentation at the Emiquon Science 2010 Conference, Dickson Mounds Museum, Lewistown, IL. March 4, 2010.

**Kent, A.D.**, A.R. Green, C. Chu, G.T. Sales, and R.S. Gates. Microbial community composition, pathogen prevalence, and environmental conditions within cage and cage-free egg laying facilities. Oral presentation at the International Poultry Scientific Forum, Atlanta, GA. January 25-26, 2010.

Chu, C., G. Sales, N. Gottel, R. Gates, A. Green, **A.D. Kent**. Microbial ecology and environmental quality in egg-laying facilities. Poster presentation at the 2009 Merck-Merial NIH National Veterinary Scholars Symposium. North Carolina State University, Raleigh, NC. August 6 - 8, 2009.

**Kent, A.D.**, N.R. Gottel, and J.M. Cooper. Ecology of microbial assemblages associated with a perennial grass biofuel crop. Oral presentation at the 94th Ecological Society of America Annual Meeting, Albuquerque, NM. August 2-7, 2009.

Chang, Y., W.R. Hill, and **A.D. Kent**. Bacterial community composition in stream biofilms is influenced by algal response to light and nutrient ratios. Poster presentation at the 94<sup>th</sup> Ecological Society of America Annual Meeting, Albuquerque, NM. August 2-7, 2009.

**Kent, A.D.** Assessing the effects of land use change on microbial communities and their activities. Oral presentation at the 2009 Great Lakes Regional Biogeochemistry Conference, Kellogg Biological Station, Hickory Corners, MI. May 28-29, 2009.

Peralta, A.L., J.W. Matthews, **A.D. Kent**. Investigating microbially-mediated nitrogen cycling during early floodplain development. Poster presentation at the 2009 Great Lakes Regional Biogeochemistry Conference, Kellogg Biological Station, Hickory Corners, MI. May 28-29, 2009.

Gottel, N.R., J.M. Cooper; **A.D. Kent**. Ecology of microbial assemblages associated with a perennial grass biofuel crop. Poster presentation at the 109<sup>th</sup> General Meeting of the American Society for Microbiology, Philadelphia, PA. May 17-21, 2009.

**Kent, A.D.**, A.L. Peralta, D.N. Flanagan, J.W. Matthews. A Soil Microbial Ecology Perspective of Wetland Restoration. Poster presentation at the 109<sup>th</sup> General Meeting of the American Society for Microbiology, Philadelphia, PA. May 17-21, 2009.

Paver, S.F. and **A.D. Kent**. Contribution of Phytoplankton-Associated Bacteria to Aquatic Microbial Community Dynamics. Poster presentation at the 109<sup>th</sup> General Meeting of the American Society for Microbiology, Philadelphia, PA. May 17-21, 2009.

Peralta, A.L., J.W. Matthews, **A.D. Kent**. Investigating microbially-mediated nitrogen cycling during early floodplain development. Poster presentation at the 94<sup>th</sup> Ecological Society of America Annual Meeting, Albuquerque, NM. August 2-7, 2009. Refereed.

**Kent, A.D.**, S.F. Paver, Y. Chang. Molecular characterization of microbial food web interactions. Poster presentation at the 12<sup>th</sup> International Symposium on Microbial Ecology, Cairns, Australia. August 17-22, 2008.

Peralta, A.L., D.N. Flanagan, J.W. Matthews, A.G. Endress, **A.D. Kent**. A microbial community ecology approach to wetland mitigation assessment. Poster presentation at the 12<sup>th</sup> International Symposium on Microbial Ecology, Cairns, Australia. August 17-22, 2008.

Miller, T.R., S.F. Paver, **A.D. Kent**, K.D. McMahon. Molecular characterization of glycolate-degrading freshwater bacteria. Poster presentation at the 12<sup>th</sup> International Symposium on Microbial Ecology, Cairns, Australia. August 17-22, 2008. Refereed.

Peralta, A.L., D.N. Flanagan, J.W. Matthews, A.G. Endress, **A.D. Kent**. A microbial community ecology approach to wetland mitigation assessment. Poster presentation at the 93<sup>rd</sup> Ecological Society of America Annual Meeting, Milwaukee, Wisconsin. August 3-8, 2008.

**Kent, A.D.**, A.L. Peralta, D.N. Flanagan, J.W. Matthews. Wetland assessment from a soil microbial ecology perspective. Oral presentation at the 2008 ASLO Summer Meeting, St. John's, Newfoundland, Canada. June 8-13, 2008.

Paver, S.F., Y. Chang, **A.D. Kent**. Molecular characterization of microbial food web interactions. Poster presentation at the 2008 ASLO Summer Meeting, St. John's, Newfoundland, Canada. June 8-13, 2008.

Flanagan, D.N., J.W. Matthews, **A.D. Kent**. Can constructed wetlands replace natural wetlands? A study into microbial community structure and function in constructed vs. natural wetlands. Poster presentation at the Society of Wetland Scientists 2008 Conference, Washington, DC. April 4-5, 2008.

**Kent, A.D.** Mentoring undergraduate researchers: turning curiosity into scientific inquiry. Poster presentation at the UIUC Undergraduate Research Symposium, Urbana, Illinois. April 29, 2008.

Flanagan, D.N., J.W. Matthews, **A.D. Kent**. Can constructed wetlands replace natural wetlands? A study into microbial community structure and function in constructed vs. natural wetlands. Poster presentation at the 100<sup>th</sup> Annual Meeting of the Illinois State Academy of Sciences, Urbana, Illinois. April 4-5, 2008.

Peralta, A.L., J.W. Matthews, **A.D. Kent**. Wetland mitigation bank assessment from a soil microbial ecology perspective. Poster presentation at the 100<sup>th</sup> Annual Meeting of the Illinois State Academy of Sciences, Urbana, Illinois. April 4-5, 2008.

**Kent, A.D.** Ecology and exploitation of endophytic diazotrophic bacteria in biofuel crops. Poster presentation at the 2008 Energy Biosciences Institute research retreat. Bodega Bay, California, February 1 – 3, 2008.

**Kent, A.D.**, A.C. Yannarell, K.D. McMahon. Synchrony in aquatic microbial community dynamics. Poster presentation at the 2007 FIBR Interdisciplinary Workshop: Do Species Matter in Microbial Communities? Bozeman, Montana, July 30 – August 1, 2007.

**Kent, A.D.**, A.C. Yannarell, J.R. Rusak, E.W. Triplett, and K.D. McMahon. Synchrony and temporal concordance in microbial community succession in a suite of north temperate humic lakes. Oral presentation at the 11<sup>th</sup> International Symposium on Microbial Ecology, Vienna, Austria. August 20-25, 2006.

**Kent, A.D.**, C.J. Watras, C. Eckley, O. Regnell, K.D. McMahon, H. Hintelmann. Microbial community structure is correlated with mercury methylation in northern Wisconsin lakes. Oral presentation at the Mercury 2006 meeting, Madison, WI. August 6-11, 2006.

**Kent, A.D.**, E.W. Triplett, K.D. McMahon. Synchrony and temporal concordance in phytoplankton and bacterioplankton community succession in a suite of north temperate humic lakes. Presented at the 2006 ASLO Summer Meeting, Victoria, British Columbia. June 4-9, 2006.

**Kent, A.D.**, C.J. Watras, C. Eckley, O. Regnell, K.D. McMahon, H. Hintelmann. Microbial community composition and mercury methylation in the anoxic hypolimnia of stratified Wisconsin lakes. Presented at the 18th Annual Cell and Molecular Biology/Molecular Biophysics Research Symposium, University of Illinois at Urbana Champaign, October 14, 2005.

**Kent, A.D.**, C.J. Watras, C. Eckley, O. Regnell, K.D. McMahon, H. Hintelmann. Microbial community composition and mercury methylation in the anoxic hypolimnia of stratified Wisconsin lakes. Oral presentation at the 2005 ASLO Summer Meeting, Santiago de Compostela, Spain. June 19-24, 2005.

**Kent, A.D.**, C.J. Watras, C. Eckley, O. Regnell, K.D. McMahon, H. Hintelmann. Microbial community composition and mercury methylation in the anoxic hypolimnia of stratified Wisconsin lakes. Oral presentation at the 2005 Annual Meeting of the International Association for Great Lakes Research, Ann Arbor, MI. May 23-27, 2005.

**Kent, A.D.**, C.J. Watras, O. Regnell, C. Eckley, K.D. McMahon, H. Hintelmann. Microbial community structure is correlated with mercury methylation in northern Wisconsin lakes. Presented at the 2005 ASLO Aquatic Sciences Meeting, Salt Lake City, UT. February 20-25, 2005.

Shade, A.L., **A. D. Kent**, E. W. Triplett, K. D. McMahon. Freshwater bacterioplankton communities exhibit interannual patterns in composition in a eutrophic temperate lake. Poster presentation at the 105<sup>th</sup> General Meeting of the American Society for Microbiology, Atlanta, GA, June 5-9, 2005.

**Kent, A.D.**, E.W. Triplett, K.D. McMahon. Examination of synchrony in phytoplankton and bacterioplankton populations in humic lakes. Poster presented at the 105<sup>th</sup> General Meeting of the American Society for Microbiology, Atlanta, GA, June 5-9, 2005.



**Kent, A.D.**, and K.D. McMahon. Microbial foodweb interactions. Oral presentation at the Science in the Northwoods meeting, Boulder Junction, WI. September 16-17, 2004.

**Kent, A.D.**, S.E. Jones, G.H. Lauster, A.C. Yannarell, J.M. Graham, T.K. Kratz, E.W. Triplett, and K.D. McMahon. 2004. Examination of microbial food web interactions in relation to annual patterns of bacterioplankton community variability in a humic lake. Presented at the 10<sup>th</sup> International Symposium on Microbial Ecology, Cancun, Mexico. August 22-27, 2004.

R.J. Newton, **A.D. Kent**, A.C. Yannarell, E.W. Triplett, and K.D. McMahon. 2004. Inside Crystal Bog: a glimpse at the temporally dynamic composition of freshwater bacterial communities. Presented at the 10<sup>th</sup> International Symposium on Microbial Ecology, Cancun, Mexico. August 22-27, 2004.

**Kent, A.D.**, A.C. Yannarell, E. Kim, G.H. Lauster, S.E. Jones, R.J. Newton, J.M. Graham, B.J. Benson, D.E. Armstrong, K.D. McMahon, L.K. Graham, T.K. Kratz, S.R. Carpenter, and E.W. Triplett. 2003. Describing microbial communities, their drivers, and their dynamics in Wisconsin temperate lakes. Presented at the 2<sup>nd</sup> Annual Microbial Observatories PI Workshop, Alexandria, VA. September 14-16, 2003.

**Kent, A.D.**, A.C. Yannarell, G.H. Lauster, J.M. Graham, D.E. Armstrong, L.K. Graham, T.K. Kratz, S.R. Carpenter, and E.W. Triplett. 2002. A Microbial Observatory for the North Temperate Lakes LTER. Presented at the Microbial Observatory/LEExEn PI Workshop, Alexandria, VA. September 23-25, 2002.

Yannarell, A.C., **A.D. Kent**, G.H. Lauster, J.M. Graham, D.E. Armstrong, L.K. Graham, T.K. Kratz, S.R. Carpenter, and E.W. Triplett. 2002. Factors influencing bacterial community composition and dynamics in three temperate lakes of diverse trophic status. Presented at the 102<sup>nd</sup> General Meeting of the American Society of Microbiology.

**Kent, A.D.**, A.C. Yannarell, G.H. Lauster, J.M. Graham, D.E. Armstrong, L.K. Graham, T.K. Kratz, S.R. Carpenter, and E.W. Triplett. 2001. Seasonal variation in bacterial communities from four temperate lakes of diverse trophic status. Oral presentation at the 9<sup>th</sup> International Symposium on Microbial Ecology, Amsterdam, The Netherlands. August 26-31, 2001.

**Kent, A.D.**, G.H. Lauster, A.C. Yannarell, J.M. Graham, D.E. Armstrong, L.K. Graham, T.K. Kratz, S.R. Carpenter, and E.W. Triplett. 2001. Analysis of microbial community dynamics in response to annual fluctuations in nutrient availability in a temperate oligotrophic lake. Presented at the 9<sup>th</sup> International Symposium on Microbial Ecology, Amsterdam, The Netherlands. August 26-31, 2001.

Lauster, G.H., **A.D. Kent**, A.C. Yannarell, J.M. Graham, D.E. Armstrong, L.K. Graham, T.K. Kratz, S.R. Carpenter, and E.W. Triplett. 2001. Changes in bacterial community composition over time in a humic lake compared to changes in several limnological parameters. Presented at the 9<sup>th</sup> International Symposium on Microbial Ecology, Amsterdam, The Netherlands. August 26-31, 2001.

Yannarell, A.C., G.H. Lauster, **A.D. Kent**, J.M. Graham, D.E. Armstrong, L.K. Graham, T.K. Kratz, S.R. Carpenter, and E.W. Triplett. 2001. Bacterial community composition over time in a eutrophic lake linked to the dynamics of the algal community. Presented at the 9<sup>th</sup> International Symposium on Microbial Ecology, Amsterdam, The Netherlands. August 26-31, 2001.

Yannarell, A.C., **A.D. Kent**, G.H. Lauster, J.M. Graham, D.E. Armstrong, L.K. Graham, T.K. Kratz, S.R. Carpenter, and E.W. Triplett. 2001. Seasonal variation in bacterioplankton community composition in three temperate lakes of diverse trophic condition. Presented at the 86<sup>th</sup> Annual Meeting of the Ecological Society of America, Madison, Wisconsin. August 5-10, 2001.

Iniguez, A.L., E.A. Robleto, **A.D. Kent**, P.J. Riggs, and E.W. Triplett. 2001. Significant yield increase in *Phaseolus vulgaris* obtained by inoculation with a trifolixin-producing, Hup<sup>+</sup> strain of *Rhizobium leguminosarum* bv. phaseoli. Presented at the 13<sup>th</sup> International Conference on Nitrogen Fixation, Hamilton, Ontario, Canada. July 2-7, 2001.

**Kent, A.D.** and E.W. Triplett. 2000. Effects of *Burkholderia vietnamiensis* AMMDR1 on the microbial ecology of the pea rhizosphere. Presented at the 92<sup>nd</sup> Annual Meeting of the American Phytopathological Society, New Orleans, Louisiana. August 12-16, 2000.

**Kent, A.D.**, J.L. Parke, and E.W. Triplett. 1998. Role of antibiotic production in biocontrol by *Burkholderia vietnamiensis* AMMDR1. Presented at the 8<sup>th</sup> International Symposium on Microbial Ecology, Halifax, Canada. August 9-14, 1998.

**Kent, A.D.**, M.L. Wojtasiak, E.A. Robleto, and E.W. Triplett. 1998. A stably-maintained broad host range plasmid that confers uptake hydrogenase activity and increased nodulation competitiveness in *Rhizobium* and *Sinorhizobium*. Presented at the 16<sup>th</sup> North American Symbiotic Nitrogen Fixation Conference, Cancún, Mexico. Feb. 1-6, 1998.

**Kent, A.D.**, M.L. Wojtasiak, and E.W. Triplett. 1997. A transposable element containing genes for increased nodulation competitiveness and a plasmid partitioning locus for stabilization of large *hup*-containing cosmids in *Rhizobium* and *Sinorhizobium*. Presented at the 11<sup>th</sup> International Congress on Nitrogen Fixation. Institute Pasteur, Paris, France. July 20-25, 1997.

#### **BULLETINS, REPORTS, OR CONFERENCE PROCEEDINGS**

L.M. Pepple, R.S. Gates, T.L. Funk, A.D. Kent. Microbial community analysis on liquid swine manure for foaming and non-foaming deep-pits. 2012. Proc. Of International Congress of Agricultural Engineering Conference. Valencia, Spain. Paper Number # C1353. Refereed.

G.K. Menezes, L.F. Rodriguez, A.D. Kent. 2011. Design of soil carbon models informed by a soil column experiment. ASABE Annual International Meeting 2011, Technical Paper Number 1111617. American Society of Agricultural and Biological Engineers Annual International Meeting. Louisville, KY. August 7-10, 2011. Refereed.

Bartolerio, N., L.F. Rodriguez, M. Porter, J.M. Andrus, A.D. Kent, J.L. Zilles. 2011. ASABE Annual International Meeting 2011, Technical Paper 1111014. (SUPPL.), pp. 12-26. American Society of Agricultural and Biological Engineers Annual International Meeting. Louisville, KY. August 7-10, 2011. Refereed.

Porter, M.D., L.F. Rodriguez, N. Bartolerio, J.M. Andrus, **A.D. Kent**, J.L. Zilles. 2011. Temporal microbial dynamics and reliability of denitrifying biofilters receiving agricultural runoff. 2011 Association of Environmental Engineering and Science Professors Education and Research Conference. Tampa, FL. July 10-12, 2011.

- Appleford, J. M., L. F. Rodriguez, R. A. C. Cooke, Y. Zhang, **A.D. Kent**, and J. L. Zilles. 2008. Characterization of microorganisms contributing to denitrification in tile drain biofilters in Illinois. Paper presented at 2008 ASABE Annual International Meeting, Providence, RI. American Society of Agricultural and Biological Engineers, St. Joseph, MI. Paper Number 084583. Refereed.
- Andrus, J. M., L. F. Rodriguez, M. Porter, R. A. C. Cooke, Y. Zhang, **A.D. Kent**, and J. L. Zilles. 2010. Microbial community patterns in tile drain biofilters in Illinois. Abstract. Presented at the 21st Century Watershed Technology Conference; Improving Water Quality and the Environment, Costa Rica. Abstract Number 701P0210cd. Refereed.
- Andrus, J. M., L. F. Rodríguez, M. Porter, R. A. C. Cooke, Y. Zhang, **A.D. Kent**, and J. L. Zilles. 2009. Microbial community patterns in tile drain biofilters in Illinois. Abstract. Presented at the 2009 American Ecological Engineering Society Annual Meeting, Corvallis, OR. Refereed.
- Peralta, A.L., J.W. Matthews, D.N. Flanagan, and **A.D. Kent**. 2007. Microbial community structure and function in restored floodplain forest wetlands. Proceedings of the International Symposium on Soil Biodiversity and Ecology. Taipei, Taiwan, September 9-14, 2007.
- Appleford, J.M., G.K. Menezes, L.F. Rodriguez, **A.D. Kent**. 2007. Development of a STELLA framework to model microbial communities in humic lakes in Wisconsin. ASABE International Meeting, Vol. 14, Technical Paper Number 077002 (13 pp). American Society of Agricultural and Biological Engineers Annual International Meeting. Minneapolis, MN. June, 17-20, 2007. Refereed.
- Kent, A.D.** Microbial Community Structure and Function in Aquatic Ecosystems. Proceedings of the Managing Cetaceans for Optimal Health Conference. John G. Shedd Aquarium, Chicago, Illinois, May 17-18, 2007.
- Jacob, C., **A.D. Kent**, B.J. Benson, R.J. Newton, and K.D. McMahon. 2005. Biological databases for linking large microbial and environmental datasets. Proc. 9th World Multiconference on Systematics, Cybernetics and Informatics, Vol VI (Informatics Systems Development II): 279-282, July 10-13, 2005, Orlando, FL. Refereed.