

Curriculum Vita

Gary M. King

A. Education.

University of Georgia -
B.S. with Honors in Zoology
Ph.D. Microbiology

B. Academic Positions.

Professor of Microbial Biology, Louisiana State University, 2007-present
Andrew C. Pereboom Professor of Microbial Biology, Louisiana State University, 2009-2012
Clare S. Darling Distinguished Professor of Oceanography and Professor of Marine Science and Microbiology,
University of Maine, 1999-2007
Professor of Microbiology, Oceanography and Marine Studies, University of Maine,
1992-2007
Lektor, Institute of Ecology and Genetics, University of Aarhus, Denmark, 1988-1990
Assist. – Assoc. Prof. Microbiol., Oceanogr., and Mar. Stud., University of Maine, 1984-1992
Research Assistant Professor of Microbiol. and Oceanogr., University of Maine, 1982-1984
Visiting Asst. Prof. of Microbiol. and Public Health, Michigan State University, 1981-1982
Research Associate, Kellogg Biological Station of Michigan State University, 1978-1981

C. Honors and Awards.

Fulbright Research Scholar, Denmark
Distinguished Service Award, Natural Resources Council of Maine
Who's Who in Science and Engineering
American Men and Women of Science
College of Science, University of Maine, Graduate Teaching and Research Award
Presidential Research and Creative Achievement Award, University of Maine
Hitchner Outstanding Research Award, University of Maine
Fellow, American Academy of Microbiology
Lindbergh Foundation Grantee
Distinguished Alumnus Speaker, Department of Microbiology, University of Georgia
College of Natural Sciences, Forestry and Agriculture Outstanding Research Award, Univ. Maine
Dedication speaker, University of Connecticut, Marine Science Building; September, 2001
Distinguished Ecologist Lecture Series, Michigan Technological University, 2002
Keynote speaker, Brazilian Society for Microbiology, 2003
Keynote speaker, Progress and future of geomicrobiology; Aarhus University; Aarhus, Denmark
Invited speaker, Terra Microbiology: 2nd Okazaki Conference; Nagoya, Japan
Chair, Environmental Committee, American Society for Microbiology, 2004-2012
Appointed to Science Advisory Board, U.S. EPA, 2004-2010
Invited visiting professor, 2007-2012, Ibaraki University
CAMERA Scientific Advisory Board, 2008-2012
LSU "Rainmaker"
Glaser Distinguished Lecturer, Florida International University
Invited keynote speaker, Microbiological Society of Korea
Invited keynote speaker, American Society of Microbiology, Intermountain Branch

E. Research Interests.

Benthic marine biogeochemistry and animal-microbe interactions
Biology, phylogeny and ecology of marine acorn worms (Hemichordata: Enteropneusta)
Role of microorganisms in the dynamics of atmospheric trace gases (methane, carbon monoxide)
Plant-microbe interactions, carbon cycling, trace gases in marine & freshwater ecosystems

Microbial ecology of soils and community dynamics in volcanic soils
Structure and function of lithotrophic bacterial communities
Microbiology, physiology and ecology of aerobic CO-oxidizing bacteria

F. Instructional Assignments (current and past).

Principles of Microbial Ecology (graduate/undergraduate; UMaine and LSU)
Prokaryotic Diversity (undergraduate/graduate; LSU)
Marine Biogeochemistry (graduate; UMaine)
Introduction to Systems Modeling (undergraduate/graduate; UMaine, LSU)
Global Change Microbiology (undergraduate/graduate; UMaine, LSU)
Marine Conservation Biology (undergraduate; UMaine)

G. Refereed Publications (> 138)

Trace gas dynamics:

Production-

King, G.M. and W.J. Wiebe. 1978. Methane release from soils of a Georgia salt marsh. *Geochim. Cosmochim. Acta.* 42:342-348.

King, G.M. and W.J. Wiebe. 1980. Regulation of sulfate concentrations and methanogenesis in salt marsh soils. *Est. Coastal Mar. Sci.* 10:215-223.

King, G.M. and W.J. Wiebe. 1980. A tracer analysis of methanogenesis in salt marsh soils. *Appl. Environ. Microbiol.* 39:877-881.

King, G.M., W.J. Wiebe, and T. Berman. 1981. Methane formation in acidic peats of the Okefenokee Swamp, GA. *Am. Mid. Nat.* 105:380-387.

Wiebe, W.J. et al. 1981. Anaerobic metabolism of salt marsh soils. pp. 137-162. In L.R. Pomeroy and R.G. Wiegert, eds. *The ecology of a salt marsh.* Springer-Verlag, New York.

King, G.M., M.J. Klug, and D.R. Lovley. 1983. Metabolism of acetate, methanol, and methylated amines in intertidal sediments of Lowes Cove, Maine. *Appl. Environ. Microbiol.* 46:1848-1853.

King, G.M. 1984. Utilization of hydrogen, acetate, and "non-competitive" substrates by methanogenic bacteria in marine sediments. *Geomicrobiol. J.* 3:275-306.

King, G.M. 1984. Metabolism of trimethylamine, choline, and glycine betaine by sulfate reducing and methane producing bacteria in intertidal marine sediments. *Appl. Environ. Microbiol.* 48:719-725.

King, G.M. 1984. Methane production in Okefenokee peats. pp. 371-380. In Cohen et al. (eds.). *The Okefenokee Swamp: its natural history, geology, and geochemistry.* Wetland Surveys, Los Alamos.

Dacey, J.W.H., G.M. King, and S. Wakeham. 1987. Controls of dimethylsulfide release from salt marshes. *Nature.* 330:643-645.

King, G.M. 1988. Methanogenesis from methylated amines in a hypersaline algal mat. *Appl. Environ. Microbiol.* 54:130-136.

Oremland, R.S. and G.M. King. 1989. Methanogenesis in hypersaline environments. pp. 180-190, In Y. Cohen and E. Rosenberg (eds.). *Microbial mats: physiological ecology of benthic microbial communities.* American Society for Microbiology, Washington, D.C.

Finster, K., G.M. King, and F. Bak. 1990. Degradation of methoxy aromatic acids and production of volatile sulfur gases in anoxic sediments. *FEMS Microbiol. Ecol.* 74:295-302.

Oremland, R.S., et al. 1993. Aspects of the biogeochemistry of methane in Mono Lake and the Mono Lake Basin of California. pp. 704-744. In: R.S. Oremland (ed.), *Biogeochemistry of global change: radiatively active trace gases*. Chapman Hall, New York.

King, G.M. 2001. Aspects of carbon monoxide production and consumption by marine macroalgae. *Mar. Ecol. Prog. Ser.* 224:69-75.

Utsumi, M., S.E. Belova, G.M. King and H. Uchimaya. 2003. Phylogenetic comparison of methanogen diversity in different wetland soils. *J. Gen. Appl. Microbiol.* 49:75-83.

Consumption-

King, G.M. 1990. Regulation by light of methane emission in a wetland. *Nature.* 345:513-515.

King, G.M., P. Roslev, and H. Skovgaard. 1990. The distribution and rate of methane oxidation in sediments of the Florida Everglades. *Appl. Environ. Microbiol.* 56:2902-2911.

King, G.M. 1990. Dynamics and controls of methane oxidation in a Danish wetland sediment. *FEMS Microbiol. Ecol.* 74:309-323.

King, G.M. 1992. Ecological aspects of methane oxidation, a key determinant of global methane dynamics. *Adv. Microbial Ecol.* 12:431-468.

King, G.M. and A.P.S. Adamsen. 1992. Response to temperature of methane oxidation in a forest soil and in a culture of the methanotroph, *Methylobacter rubra*. *Appl. Environ. Microbiol.* 58:2758-2763.

Adamsen, A.P.S. and G.M. King. 1993. Methane consumption in temperate and sub-arctic forest soils: rates, vertical zonation and response to water and nitrogen. *Appl. Environ. Microbiol.* 59:485-490.

King, G.M. 1993. Ecophysiological characteristics of obligate methanotrophic bacteria and methane oxidation in situ. pp. 303-313. In: Murrell, J. C. and Kelly, D.P. (eds.), *Microbial growth on C1 compounds*. Intercept Scientific Publications, Andover.

Roslev, P. and G.M. King. 1993. TTC, a new water-soluble formazan dye, and applications in starvation responses of bacteria. *Appl. Environ. Microbiol.* 59:2891-2896.

King, G.M. and S. Schnell. 1994. Enhanced ammonium inhibition of methane consumption in forest soils by increasing atmospheric methane. *Nature.* 370:282-284.

Roslev, P. and G.M. King. 1994. Survival and recovery of methanotrophic bacteria under oxic and anoxic conditions. *Appl. Environ. Microbiol.* 60:2602-2608.

King, G.M. and S. Schnell. 1994. Ammonium and nitrite inhibition of methane oxidation by *Methylobacter albus* BG8 and *Methylosinus trichosporium* OB3b at low methane concentrations. *Appl. Environ. Microbiol.* 60:3508-3513.

Schnell, S. and G.M. King. 1994. Mechanistic analysis of ammonium inhibition of atmospheric methane consumption in forest soils. *Appl. Environ. Microbiol.* 60:3514-3521.

King, G.M. 1994. Associations of methanotrophic bacteria with and methane consumption by the roots of aquatic macrophytes. *Appl. Environ. Microbiol.* 60:3220-3227.

Roslev, P. and G.M. King. 1995. Aerobic and anaerobic utilization of endogenous substrate and anaerobic glucose metabolism in a methanotrophic bacterium. *Appl. Environ. Microbiol.* 61:1563-1570.

- Schnell, S. and G.M. King. 1995. Stability of methane oxidation capacity to variations in methane and nutrient concentrations. *FEMS Microbiol. Ecol.* 17:285-294.
- King, G.M. and T.H. Blackburn. 1996. Controls of methane oxidation in sediments. *Mitt. Internat. Verein. Limnol.* 25:1-14.
- King, G.M. 1996. Physiological controls of atmospheric methane oxidation. p. 17-32. In, J.C. Murrell and D.P. Kelley (eds.), *Microbiology of trace gases: sources, sinks and global change processes*. NATO-ASI Series.
- Roslev, P. and G.M. King. 1996. Regulation of methane oxidation in a freshwater wetland by water table changes and anoxia. *FEMS Microbiol. Ecol.* 19:105-116.
- King, G.M. 1996. Environmental parameters that control methane oxidation in situ. pp. 318-325. In, M.E. Lidstrom (ed.), *Microbial growth on C₁ compounds*. Kluwver Press, Inc.
- Schnell, S and G.M. King. 1996. Responses of methanotrophic activity in soils and cultures to water stress. *Appl. Environ. Microbiol.* 62:3203-3209.
- King, G.M. 1996. *In situ* analyses of methane oxidation associated with the roots and rhizomes of a Bur Reed, *Sparganium eurycarpum*, in a Maine wetland. *Appl. Environ. Microbiol.* 62:4548-4555.
- King, G.M. 1997. Stability of trifluoromethane to methanotrophic degradation in pure cultures and soils. *FEMS Microbiol. Ecol.* 22:103-110.
- King, G.M. 1997. Responses of atmospheric methane consumption by soils to global climate change. *Glob. Change Biol.* 3:351-362.
- Calhoun, A. and G.M. King. 1997. Regulation of root-associated methanotrophy by oxygen availability in the rhizosphere of two aquatic macrophytes. *Appl. Environ. Microbiol.* 63:3051-3058.
- Benstead, J. and G.M. King. 1997. Response of methanotrophic activity in forest soil to methane availability. *FEMS Microbiol. Ecol.* 23:333-340.
- King, G.M. and S. Schnell. 1998. Effects of ammonium and non-ammonium salt additions on methane oxidation by *Methylosinus trichosporium* OB3b and Maine forest soils. *Appl. Environ. Microbiol.* 64:253-257.
- Calhoun, A. and G.M. King. 1998. Characterization of root-associated methanotrophs from three freshwater macrophytes: *Pontederia cordata*, *Sparganium eurycarpum*, and *Sagittaria latifolia*. methanotrophic isolates from the roots of aquatic macrophytes. *Appl. Environ. Microbiol.* 64:1099-1105.
- Benstead, J., G.M. King and H.G. Williams. 1998. Methanol promotes atmospheric methane oxidation by methanotrophic cultures and soils. *Appl. Environ. Microbiol.* 64:1091-1098.
- Rich, J.J. and G.M. King. 1998. Carbon monoxide oxidation by bacteria associated with the roots of freshwater macrophytes. *Appl. Environ. Microbiol.* 64:4939-4943.
- Rich, J.J. and G.M. King. 1999. Aerobic and anaerobic transformations of carbon monoxide in freshwater peats. *FEMS Microbiol. Ecol.* 28:215-224.
- King, G.M. 1999. Characteristics and significance of atmospheric carbon monoxide consumption by soils. *Chemosphere: Global Change Sci.* 1:53-63.
- King, G.M. 1999. Attributes of atmospheric carbon monoxide oxidation in Maine forest soils. *Appl. Environ. Microbiol.* 65:5257-5264.

- Nanba, K. and G.M. King. 2000. Response of atmospheric methane consumption by Maine forest soils to exogenous aluminum salts. *Appl. Environ. Microbiol.* 66:3674-3679.
- King, G.M. 2000. Impacts of land use on atmospheric carbon monoxide consumption by soils. *Glob. Biogeochem. Cyc.* 14:1161-1172.
- Milligan, P. and G.M. King. 2000. Carbon monoxide production is not enhanced by nitrogenase activity. *FEMS Microbiol. Ecol.* 34:157-160.
- Benstead, J. and G.M. King. 2001. The effect of acidification on atmospheric methane uptake by a Maine forest soil. *FEMS Microbiol. Ecol.* 34:207-212.
- Hardy, K. and G.M. King. 2001. Enrichment of high affinity CO oxidizers in Maine forest soil. *Appl. Environ. Microbiol.* 67:3671-3676.
- King, G.M. and M. Hungria. 2002. Soil-atmosphere CO exchanges and microbial biogeochemistry of CO transformations in a Brazilian agroecosystem. *Appl. Environ. Microbiol.* 68:4480-4485.
- King, G.M. and H. Crosby. 2002. Impacts of plant roots on soil CO cycling and soil-atmosphere CO exchange. *Glob. Change Biol.* 8:1085-1093.
- King, G.M. 2003. Contributions of atmospheric CO and hydrogen uptake to microbial dynamics on recent Hawaiian volcanic deposits. *Appl. Environ. Microbiol.* 69:4067-4075.
- King, G.M. 2003. Molecular and culture-based analyses of aerobic carbon monoxide oxidizer diversity. *Appl. Environ. Microbiol.* 69:7257-7265.
- King, G.M. 2003. Uptake of carbon monoxide and hydrogen at environmentally relevant concentrations by mycobacteria. *Appl. Environ. Microbiol.* 69:7266-7272.
- Dunfield, K. and G.M. King. 2004. Molecular analysis of carbon monoxide-oxidizing bacteria associated with recent Hawaiian volcanic deposits. *Appl. Environ. Microbiol.* 70:4242-4248.
- Nanba, K., G.M. King and K. Dunfield. 2004. Analysis of the distribution and diversity of lithotrophic bacterial populations on recent Hawaiian volcanic deposits. *Appl. Environ. Microbiol.* 70:2245-2253.
- Moran, M.A., A. Buchan, J.M. Gonzalez, J.F. Heidelberg, W.B. Whitman, R.P. Kiene, J.R. Henriksen, G.M. King, R. Belas, C. Fuqua, L. Brinkac, M. Lewis, S. Johri, B. Weaver, G. Pai, J.A. Eisen, E. Rahe, W.M. Sheldon, W. Ye, T.R. Miller, J. Carlton, D.A. Rasko, I.T. Paulsen, Q. Ren, S.C. Daugherty, R.T. Deboy, R.J. Dodson, A.S. Durkin, R. Madupu, W.C. Nelson, S.A. Sullivan, M.J. Rosovitz, D.H. Haft, J. Selengut and N. Ward. 2004. Genome sequence of *Silicibacter pomeroyi* reveals adaptations to the marine environment. *Nature (Lond.)* 432:910-913.
- Dunfield, K. and G.M. King. 2005. Analysis of the distribution and diversity in recent Hawaiian volcanic deposits of a putative carbon monoxide dehydrogenase large sub-unit gene. *Environ. Microbiol.* 7:1405-1412.
- Tolli, J. and G.M. King. 2005. Lithotrophic community structures in agroecosystem and unmanaged pine forest soils based on analyses of the large subunit of form I ribulose-1,5-bisphosphate carboxylase/oxygenase. *Appl. Environ. Microbiol.* 71:8411-8418.
- King, G.M. 2006. Nitrate-dependent anaerobic oxidation of carbon monoxide. *FEMS Microbiol. Ecol.* 56:1-7
- King, G.M. 2007. Microbial consumption of carbon monoxide by salt marsh sediments. *FEMS Microbiol. Ecol.*
- Weber, C.F. and G.M. King. 2007. Physiological, ecological and phylogenetic characterization of *Stappia*, a marine CO-oxidizing bacterial genus. *Appl. Environ. Microbiol.* 73:1266-1276.

- King, G.M. and C.F. Weber. 2007. Distribution, diversity and ecology of aerobic CO-oxidizing bacteria. *Nature Reviews Microbiol.* 5:107-118
- King, G.M. and C.F. Weber. 2008. Interactions between bacterial carbon monoxide and hydrogen consumption and plant development on recent volcanic deposits. *ISME Journal.* 2:195-203
- King, G.M. and K. Nanba. 2008. Distribution of atmospheric methane oxidation and methanotrophic communities on Hawaiian volcanic deposits and soils. *Microb. Environ.* 23:326-330.
- King, G.M., C.F. Weber, K. Nanba, Y. Sato and H. Ohta. 2008. Atmospheric CO and hydrogen uptake and CO oxidizer phylogeny for Miyake-jima, Japan volcanic deposits. *Microb. Environ.* 23:299-305.
- Weber, C.F. and G.M. King. 2009. Water stress impacts on bacterial carbon monoxide oxidation on recent volcanic deposits. *ISME-J.* 3:1325-1334.
- Weber, C.F. and G.M. King. 2010. Distribution and diversity of carbon monoxide-oxidizing bacteria and bulk bacterial communities across a succession gradient on a Hawaiian volcanic deposit. *Environ. Microbiol.* 12:1855-1867.
- Weber, C.F. and G.M. King. 2010. Quantification of *Burkholderia coxL* in Hawaiian volcanic deposits. *Appl. Environ. Microbiol.* 76:2212-2219.
- Weber, C.F. and King, G.M. 2012. The phylogenetic distribution and ecological role of carbon monoxide oxidation in the genus *Burkholderia*. *FEMS Microbiol. Ecol.* 79:167-175
- King, C.E. and King, G.M. 2012. Temperature responses of carbon monoxide and hydrogen uptake by vegetated and unvegetated volcanic cinders. *Int. Soc. Microb. Ecol. J.* 6:1558-1565
- King, C.E. and G.M. King. 2013. Description of *Thermogemmatispora carboxidivorans* sp. nov., a carbon monoxide-oxidizing member of the Ktedonobacteria isolated from a geothermally-heated biofilm, and CO oxidation by members of the Ktedonobacteria. *Int. J. Syst. Evol. Microbiol.* 64:1244-1251.
- King, C.E. and G.M. King. 2014. *Thermomicrobium carboxidovorans* KI3^T sp. nov., and *Thermorudis peleae* KI4^T gen. nov., sp. nov., carbon monoxide-oxidizing bacteria from geothermally-heated biofilms. *Int. J. Syst. Evol. Microbiol.* 64:2586-2592.
- Dieser, M., E. Broemsen, K.A. Cameron, G.M. King, A. Achberger, K. Choquette, B. Hagedorn, R. Sletten, K. Junge and B.C. Christner. 2014. Molecular and biogeochemical evidence for methane cycling beneath the western margin of the Greenland Ice Sheet. *ISME-J* doi:10.1038/ismej.2014.59
- King, G.M. 2015. Carbon monoxide as a metabolic energy source for extremely halophilic microbes: Implications for microbial activity in Mars regolith. *Proc. Natl. Acad. Sci. USA*

Sulfur transformations:

- King, G.M. and M.J. Klug. 1980. Sulfohydrolase activity in anoxic sediments of Wintergreen Lake, Kalamazoo County, Michigan. *Appl. Environ. Microbiol.* 39:950-956.
- King, G.M., M.J. Klug, R.G. Wiegert, and A.G. Chalmers. 1982. Relation of soil water movement and sulfide concentration to *Spartina alterniflora* production in a Georgia salt marsh. *Science* 218:61-63.
- King, G.M. and M.J. Klug. 1982. Total and ester sulfate sulfur in the yellow water-lily, *Nuphar advena*. *Aquat. Bot.* 12:297-304.
- King, G.M. and M.J. Klug. 1982. Comparative aspects of sulfur mineralization in sediments of a eutrophic lake basin. *Appl. Environ. Microbiol.* 44:1406-1412.

King, G.M. 1983. Sulfate reduction in Georgia salt marsh soils: an evaluation of pyrite formation with ^{55}Fe and ^{35}S tracers. *Limnol. Oceanogr.* 28:987-995.

Howes, B.L., J.W.H. Dacey, and G.M. King. 1984. Carbon flow through oxygen and sulfate reduction pathways in salt marsh sediments. *Limnol. Oceanogr.* 29:1037-1051.

King, G.M., B.L. Howes, and J.W.H. Dacey. 1985. Short term endproducts of sulfate reduction: formation of acid volatile sulfides, elemental sulfur, and pyrite. *Geochim. Cosmochim. Acta.* 49:1561-1566.

King, G.M. 1988. The dynamics of sulfur and sulfate reduction in a South Carolina salt marsh. *Limnol. Oceanogr.* 33:376-390.

King, G.M., R.G. Carlton, and T.E. Sawyer. 1990. Anaerobic metabolism and oxygen distribution in carbonate sediments of a submarine canyon. *Mar. Ecol. Prog. Ser.* 58:275-285.

King, G.M. 1990. Effects of added manganic and iron oxides on sulfate reduction and sulfide oxidation in intertidal sediments. *FEMS Microbiol. Ecol.* 73:131-138.

Kristensen, E., G.M. King, M. Holmer, G. Banta, M.J. Jensen, K. Hansen, and N. Bussawarvit. 1994. Sulfate reduction, acetate turnover and carbon metabolism in sediments of the Ao Nam Bor mangrove forest, Thailand. *Mar. Ecol. Prog. Ser.* 109:245-255.

Hansen, K., G.M. King, and E. Kristensen. 1996. Impact of the soft-shell clam, *Mya arenaria* burrows on sulfate reduction in an intertidal sediment. *Aquatic Microbial Ecol.* 10:181-194.

Organic matter transformations:

King, G.M. and M.J. Klug. 1982. The kinetics of glucose uptake and endproduct formation in Wintergreen Lake sediments. *Appl. Environ. Microbiol.* 44:1308-1317.

King, G.M. and T. Berman. 1984. Potential effects of isotopic dilution on apparent respiration in ^{14}C -heterotrophy experiments. *Mar. Ecol. Prog. Ser.* 19:175-180.

King, G.M., G.G. Guist, and G.L. Lauterbach. 1985. Anaerobic degradation of carrageenan from the red macroalga, *Eucheuma cottonii*. *Appl. Environ. Microbiol.* 49:588-592.

King, G.M., G.G. Guist, and G.E. Lauterbach. 1986. Stability of carrageenan during anaerobic digestion. *Nova Hedwiga* 83:116-123.

King, G.M. 1986. Characterization of glucosidase activity in intertidal marine sediments. *Appl. Environ. Microbiol.* 51:373-380.

King, G.M. and G.E. Lauterbach. 1987. Protein nitrogen associated with carrageenan from the red macroalgae, *Eucheuma cottonii* and *Chondrus crispus*. *Bot. Mar.* 30:33-35.

King, G.M. 1987. An enzymatic synthesis of specifically radiolabelled derivatives of the common osmolyte, glycine betaine. *J. Exp. Mar. Biol. Ecol.* 107:145-154.

King, G.M. 1988. Distribution and metabolism of quaternary amines in marine sediments. In T.H. Blackburn and J. Sorensen (eds.), *Nitrogen Cycling in Coastal Marine Ecosystems*. John Wiley & Sons, New York. pp. 143-173.

Findlay, R.L., G.M. King, and L. Watling. 1989. Efficacy of phospholipid analysis in determining microbial biomass in sediments. *Appl. Environ. Microbiol.* 55:2888-2893.

Brinch-Iversen, J. and G.M. King. 1990. Effects of substrate concentration, growth state, and oxygen availability on relationships among bacterial carbon, nitrogen and phospholipid phosphorous content. *FEMS Microbiol. Ecol.* 74:345-355.

Petersen, S.O., K. Henriksen, T.H. Blackburn, and G.M. King. 1991. A comparison of phospholipid and chloroform fumigation analyses for biomass in soil: potentials and limitations. *FEMS Microbiol. Ecol.* 85:257-268.

King, G.M. 1991. Measurement of acetate in marine porewaters by using an enzymatic approach. *Appl. Environ. Microbiol.* 57:3476-3481.

Sawyer, T.E. and G.M. King. 1993. Glucose uptake in an intertidal marine sediment: metabolism and end-product formation. *Appl. Environ. Microbiol.* 59:120-128.

Therkildsen, M.S., G.M. King and B.A. Lomstein. 1996. Urea production and turnover following the addition of AMP, CMP, RNA and a protein mixture to a marine sediment. *Aquatic Microb. Ecol.* 10:173-179.

King, G.M. 1996. Applications of ^{14}C and ^3H radiotracers for analysis of benthic organic matter transformations. pp. 317-323. In, Hurst, C.J. et al. (eds.). *Manual of Environmental Microbiology*. ASM, Washington, D.C.

Kristensen, E., M.H. Jensen, G.T. Banta, K. Hansen, M. Holmer, G.M. King. 1998. Transformation and transport of inorganic nitrogen in sediments of a southeast Asian mangrove forest. *Aquat. Microb. Ecol.* 15:165-175.

Chung, W.K. and G.M. King. 1999. Potential polyaromatic hydrocarbon degradation and biogeochemical transformations in macrofaunal burrow sediments. *Aquat. Microb. Ecol.* 19:285-295.

King, G.M. and M.A. Garey. 1999. Ferric iron reduction by bacteria associated with the roots of freshwater and marine macrophytes. *Appl. Environ. Microbiol.* 65:4393-4398.

King, G.M. 2001. Radiotracer assays (^{35}S) of sulfate reduction rates in marine and freshwater sediments. pp. 489-500. In, J. Paul (ed.), *Methods in Marine Microbiology*. Academic Press.

King, G.M. 2001. Radiotracer (^{14}C and ^3H) assays in benthic biogeochemistry. pp. 419-426. In, Hurst, C.J. et al. (eds.). *Manual of Environmental Microbiology*. ASM, Washington, D.C.

Chung, W.-K. and G.M. King. 2001. Isolation, characterization and polyaromatic hydrocarbon degradation potential of aerobic bacteria from marine macrofaunal burrow sediments and description of *Lutibacterium anuloderans* gen. nov., sp. nov., and *Cycloclasticus spirillensis* sp. nov. *Appl. Environ. Microbiol.* 67:5585-5592.

Other topics:

King, G.M. 1986. Inhibition of microbial activity in marine sediments by a bromophenol from a hemichordate. *Nature* 323:257-259.

King, G.M. 1988. Dehalogenation in marine sediments containing natural sources of halophenols. *Appl. Environ. Microbiol.* 54:3049-3058.

King, G.M., C. Giray, and I. Kornfield. 1994. A new hemichordate, *Saccoglossus bromophenolosus* (Enteropneusta: Harrimaniidae), from North America. *Proc. Biol. Soc. Wash.* 107:383-390.

Dacey, J.W.H., G.M. King, and P.S. Lobel. 1994. Herbivory by reef fishes and the production of dimethylsulfide. *Mar. Ecol. Prog. Ser.* 12:67-74.

King, G.M., C. Giray, and I. Kornfield. 1995. Aspects of the biogeography and phylogeny of North American enteropneusts (Hemichordata: Enteropneusta) *Mar. Biol.* 123:369-378.

Giray, C. and G.M. King. 1996. *Protoglossus graveolens*, a new hemichordate species (Hemichordata: Enteropneusta: Harrimaniidae) from the Gulf of Maine. *Proc. Biol. Soc. Wash.* 109:430-445.

- Plante, C.J., L.M. Mayer, and G.M. King. 1996. The kinetics of bacteriolysis in the gut of the deposit feeder, *Arenicola marina*. *Appl. Environ. Microbiol.* 62:1051-1057.
- Giray, C. and G.M. King. 1997. Effect of naturally-occurring bromophenols on sulfate reduction and ammonia oxidation in sediments from a Maine mudflat. *Aquat. Microb. Ecol.* 13:295-301.
- Giray, C. and G.M. King. 1997. Predator deterrence and 2,4-dibromophenol conservation by the enteropneusts, *Saccoglossus bromophenolosus* and *Protoglossus graveolens*. *Mar. Ecol. Prog. Ser.* 159:229-238.
- Snelgrove, P.V.R., T.H. Blackburn, P.A. Hutchings, D.M. Alongi, J.F. Grassle, H. Hummel, G.M. King, I. Koike, P.J.D. Lamshead, N.B. Ramsing and V. Solis-Weiss. 1997. The importance of marine sediment biodiversity in ecosystem processes. *Ambio* 26:578-583.
- King, G.M. 1998. Reproduction in the Hemichordata. p. 599-603. In, Knobil, E. and Neill, J., (eds.), *Encyclopedia of Reproduction*. Vol 2. Academic Press, San Diego.
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- Weidong, Z., C.F. Weber, C.L. Zhang, C.S. Romanek, G.M. King, G. Mills, T. Sokolova, J. Wiegel. 2006. *Thermalkalibacillus uzonensis* gen. nov. sp. nov., a novel aerobic thermophilic carbon-monoxide-tolerant bacterium isolated from a hot spring in Uzon Caldera, Kamchatka *Extremophiles* 10:337-345
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- Gomez-Alvarez, V., G.M. King and K. Nüsslein. 2007. Comparative bacterial diversity in recent Hawaiian volcanic deposits of different ages. *FEMS Microbiol. Ecol.* 60:60-73
- Hoefl, S.E., J.S. Blum, J.F. Stolz, F.R. Tabita, B. Witte, G.M. King, J.M. Santini and R.S. Oremland. 2007. *Alkalilimnicola ehrlichii* sp. nov., a novel arsenite-oxidizing haloalkaliphilic gammaproteobacterium capable of chemoautotrophic or heterotrophic growth with nitrate or oxygen as the electron acceptor. *Int. J. Syst. Evol. Microbiol.* 57:504-512.
- King, G.M. 2007. Chemolithotrophic bacteria: distributions, functions and significance in volcanic environments. *Microb. Environ.* 22:309-319.
- Fissore, C. C.P. Giardina, R.Kolla, C. Trettin, G.M. King, M.F. Jurgensen, C. Barton, and S.D. McDowell. 2008. Temperature and vegetation effects on soil organic carbon quality along a forested mean annual temperature gradient in North America. *Glob. Change Biol.* 14:193-205.
- Fissore, C., C.P. Giardina, C.W. Swanston, G.M. King and R.K. Kolka. 2009. Temperature sensitivity of soil organic carbon in North American forests. *Glob. Change. Biol.* doi: 10.1111/j.1365-2486.2009.01903.x

Giongo, A., Crabb, D.B. et al. 2010. PANGEA: pipeline for analysis of next generation amplicons. ISME J. 4:852-861.

Bianchi, T.S., Cook, R.L., Perdue, E.M., Kolic, P.E., Green, N., Zhang, Y., Smith, R.W., Kolker, A.S., Ameen, A., King, G.M., Ojwang, L.C., Schneider, C.L., Normand, A.E., Hetland. 2011. Impacts of diverted freshwater on dissolved organic matter and microbial communities in Barataria Bay, Louisiana, U.S.A. Mar. Environ. Res. 72:248-257

Smith, C.B., Johnson, C.N. and King, G.M. 2011. Assessment of polyaromatic hydrocarbon degradation by potentially pathogenic environmental *Vibrio parahaemolyticus* isolates from coastal Louisiana, USA. Mar. Pollu. Bull. 64:138-143

King, G.M. 2011. Enhancing soil carbon storage for carbon remediation: potential contributions and constraints by microbes. Trends Microbiol. 19:75-84

King, G.M., Judd, C., Kuske, C.R., Smith, C. 2012. Analysis of the stomach and gut microbiomes of the Eastern oyster (*Crassostrea virginica*) from coastal Louisiana, USA. PLoS ONE 7(12): e51475. doi:10.1371/journal.pone.0051475

King, G.M. Smith, C., Tolar, B., Hollibaugh, J.T. 2013. Analysis of the composition and structure of coastal to mesopelagic bacterioplankton communities in the northern Gulf of Mexico. Front. Microbiol. doi: 10.3389/fmicb.2012.00438

Tolar, B., King, G.M., Hollibaugh, J.T. 2013. An analysis of Thaumarchaeota populations from the Northern Gulf of Mexico. Front. Microbiol. doi: 10.3389/fmicb.2013.00072

Smith, C., Tolar, B., Hollibaugh, J.T. and G.M. King. 2013. Alkane hydroxylase gene (*alkB*) phylotype composition and diversity in northern Gulf of Mexico bacterioplankton. Front. Microbiol. doi: 10.3389/fmicb.2013.00370

Malvankar, N., G.M. King and D.R. Lovley. 2014. Centimeter-long electron transport in marine sediments via conductive minerals. ISME-J doi:10.1038/ismej.2014.131

King, G.M. 2014. Urban microbiomes and urban ecology: how do microbes in the built environment affect human sustainability in cities? J. Microbiol. DOI 10.1007/s12275-014-4364-x

King, G.M. 2014. Urban microbiomes and urban agriculture: what are the connections and why should we care?

King, G.M., J. Kostka, T.C. Hazen, and P.E. Sobecky. 2015. Microbial responses to the *Deepwater Horizon* oil spill: from coastal wetlands to the deep sea. Annu. Rev. Mar. Sci. 7:377-401

Weber, C.F., G.M. King and K. Aho. 2015. Relative abundance of and composition within fungal orders differ between cheatgrass (*Bromus tectorum*) and sagebrush (*Artemisia tridentata*)-associated soils. PloS One DOI: 10.1371/journal.pone.0117026

H. Books and miscellaneous publications.

Fenchel, T., G.M. King and T.H. Blackburn. 1998. Bacterial biogeochemistry: an ecophysiological analysis of mineral cycling, 2nd edition. Academic Press, New York. 307 p.

Fenchel, T., G.M. King and T.H. Blackburn. 2012. Bacterial biogeochemistry: an ecophysiological analysis of mineral cycling, 3rd edition. Academic Press, New York. (also in translation for a Japanese edition)

King, G.M., D. Kirchman, A.A. Saylers, W. Schlesinger, J.M. Tiedje. 2002. Global environmental change: microbial contributions, microbial solutions. ASM Press, Washington, D.C.

Stetzenbach, L.D., H. Amman, E. Hohanning, G.M. King and R.J. Shaughnessy. 2005. Microorganisms, mold and indoor air quality. ASM Press, Washington, D.C.

Pepper, I., J. Brooks, S. Brown, C. Gerba, G. O'Connor, G.M. King. 2011. Land application of organic residuals: public health threat or environmental benefit. ASM Press, Washington, D.C.

Workshop participants. 2011. Incorporating microbial processes into climate models. ASM Press, Washington, D.C.

I. Presentations.

Published abstracts:

King, G.M. and L.R. Pomeroy. 1976. Methane release from soils of a Georgia salt marsh. Annual meetings of the American Society for Limnology and Oceanography. Savannah, GA.

King, G.M. and W.J. Wiebe. 1976. Aspects of methane production in salt marshes. Annual meetings of the Southeastern Branch of the American Society for Microbiology. Athens, GA.

King, G.M. and G.W. Skyring. 1977. A seasonal study of methanogenesis in a Georgia salt marsh. Annual meetings of the American Society for Microbiology. New Orleans, LA.

King, G.M. and W.J. Wiebe. 1978. Effect of sulfate on methanogenesis in a Georgia salt marsh. Annual meetings of the American Society for Microbiology. Las Vegas, NV.

Sherr, B.F., J.J. Rowe, G.M. King, W. Zumft, and W.J. Payne. 1978. Partial purification and characterization of the nitric oxide reductase complex of *Paracoccus denitrificans*. Annual meetings of the American Society for Microbiology. Las Vegas, NV.

King, G.M. and M.J. Klug. 1979. Sulfohydrolase activity in anoxic freshwater sediments. Annual meetings of the American Society for Microbiology. Los Angeles, CA.

King, G.M. and M.J. Klug. 1980. Dynamics of sulfur in Wintergreen Lake, MI. Annual meetings of the American Society for Limnology and Oceanography. Knoxville, TN.

Klug, M.J., G.M. King, R.L. Smith, D. Lovley, and J.W.H. Dacey. 1980. Differences in anaerobic microbial processes in sediments along a transect of a lake basin. Annual meetings of the American Society for Limnology and Oceanography. Knoxville, TN.

Klug, M.J., G.M. King, R.L. Smith, D. Lovley, and J.W.H. Dacey. 1980. Comparative aspects of anaerobic microbial metabolism in sediments along a transect of a lake basin. International Symposium on Microbial Ecology. Warwick, England.

King, G.M. and M.J. Klug. 1981. Role of thermodynamics in anaerobic carbon metabolism. Annual meetings of the American Society for Microbiology. Dallas, TX.

King, G.M. and M.J. Klug. 1981. Controls of primary production in salt marshes. Annual meetings of the American Society for Limnology and Oceanography. Milwaukee, WI.

King, G.M. and M.J. Klug. 1981. Interactions between microbial activity and *Spartina alterniflora* production. Annual meetings of the American Institutes for Biological Sciences, Ecological Society of America. Bloomington, IN.

King, G.M. and M.J. Klug. 1982. Glucose turnover in Wintergreen Lake sediments. Annual meetings of the American Society for Microbiology. Atlanta, GA.

King, G.M. 1983. Nitrogen mineralization by methanogenic bacteria in marine sediments. Annual meetings of the American Society for Microbiology. New Orleans, LA.

- King, G.M., M.J. Klug, and T. Berman. 1983. The potential effects of isotopic equilibrium on apparent respiration in ^{14}C -heterotrophy experiments. International Symposium on Microbial Ecology. East Lansing, MI.
- King, G.M. 1983. Glycine betaine metabolism in anoxic intertidal sediments of Lowes Cove, ME. Annual meetings of the American Society for Limnology and Oceanography. St. Johns, Newfoundland.
- Howes, B.L., G.M. King, and J.W.H. Dacey. 1983. Partitioning of carbon flow through O_2 and SO_4 reduction pathways in vegetated salt marsh sediments. Annual meetings of the American Society for Limnology and Oceanography. St. Johns, Newfoundland.
- King, G.M., B.L. Howes, and J.W.H. Dacey. 1983. Assessment of sulfate reduction methods in salt marsh soils. Biennial meetings of the Estuarine Research Foundation. Virginia Beach, VA (invited).
- King, G.M. 1984. Methanol oxidation by sulfate reducers and methanogens in anoxic marine sediments. Annual meetings of the American Society for Limnology and Oceanography. Vancouver, British Columbia.
- King, G.M. and J.T. Morris. 1985. Sulfate reduction and sulfur distribution in a South Carolina salt marsh. Annual meetings of the American Society for Limnology and Oceanography. Minneapolis, MN (invited).
- King, G.M. 1985. Distribution and metabolism of quaternary amines in salt marshes. Biennial meetings of the Estuarine Research Foundation. Durham, NH (invited).
- King, G.M. and G. Gleichauf. 1985. Polysaccharide hydrolysis in marine sediments. Annual meetings of the American Society for Microbiology. Las Vegas, NV.
- King, G.M. 1986. Metabolism of halophenols in marine sediments. Annual meetings of the American Society for Microbiology. Washington, D.C.
- King, G.M. 1986. Distribution and ecology of bromophenols from a hemichordate. Annual meetings of the American Society for Limnology and Oceanography. Kingston, R.I.
- King, G.M. 1986. Polysaccharide hydrolysis in marine sediments. International Committee on Microbial Ecology, Fourth Triennial Meeting. Ljubljana, Yugoslavia.
- Dacey, J.W.H., S. Wakeham, and G.M. King. 1986. Controls of dimethylsulfide release from salt marshes. Annual meetings of the Ecological Society of America. Syracuse, N.Y.
- King, G.M. 1987. Methane production from methylated amines in hypersaline sediments. Annual Meetings of the American Chemical Society. Denver, CO (invited; session chairman/ organizer).
- King, G.M. 1987. Dehalogenation in marine sediments. Biennial meetings of the International Society for Environmental Biogeochemistry. Nancy, France.
- King, G.M. 1987. Methanogenesis in a hypersaline algal mat system. Annual Meetings of the American Society for Microbiology. Atlanta, GA.
- King, G.M., L. Hall, R.L. Irving, and T.E. Sawyer. 1988. Aspects of polysaccharide metabolism in intertidal sediments. Biennial Meetings of the American Geophysical Union and American Society for Limnology and Oceanography. New Orleans (invited).
- King, G.M. 1988. Dehalogenation in anoxic marine sediments. Annual Meetings of the American Society for Microbiology. Miami.
- King, G.M. 1988. Effects of manganic and iron oxides on sulfur cycling. Fall Meetings of the American Geophysical Union. San Francisco (invited; session chairman/organizer).

Findlay, R.L., T.E. Sawyer, R.L. Irving, and G.M. King. 1989. International Committee on Microbial Ecology, Fifth Triennial Meeting. Kyoto, Japan.

King, G.M. and T.H. Blackburn. 1989. Controls of methane oxidation in sediments. Reduced gases in aquatic ecosystems workshop, 24th Congress of the International Society for Theoretical and Applied Limnology, Munich, FRG (invited; keynote speaker).

King, G.M. and P.R. Roslev. 1991. Determinants of aerobic methane oxidation in wetland sediments. 10th International Symposium for Environmental Biogeochemistry, San Francisco, CA.

King, G.M., I. Kornfield, C. Giray. 1991. Distribution of bromoorganics and speciation in *Saccoglossus kowalevskyi*. American Society for Limnology and Oceanography, Halifax, Nova Scotia.

King, G.M., A.P. Adamsen, and P. Roslev. 1991. Controls of methane oxidation in a Canadian wetland and forest soils. Spring meetings of the American Geophysical Union, Baltimore, MD.

King, G.M., P. Roslev, A.P.S. Adamsen, and S. Schnell. 1992. Ecophysiological characteristics of obligate methanotrophic bacteria and methane oxidation *in situ*. 7th International Symposium on C₁ Compounds. Warwick, England.

Roslev, P. and G.M. King. 1993. Effect of oxygen regimes and non-growth substrates on methane oxidation and survival of methanotrophic bacteria. Annual Meetings of the American Society for Microbiology, Atlanta.

Schnell, S. and G.M. King. 1993. Depth distribution of methanotrophic and ammonia-oxidizing activities in a forest soil. Annual Meetings of the American Society for Microbiology, Atlanta.

King, G.M. 1993. Methanotrophic activity associated with aquatic plant roots. Annual Meetings of the American Society for Microbiology, Atlanta.

King, G.M. and S. Schnell. 1994. Inhibition of methane oxidation by ammonium and nitrite in pure cultures of methanotrophs. Annual Meetings of the American Society for Microbiology, Las Vegas.

Schnell, S. and G.M. King. 1994. Mechanism for ammonium inhibition of atmospheric methane consumption in forest soils. Annual Meetings of the American Society for Microbiology, Las Vegas.

King, G.M. and B.R. Campbell. 1995. *In situ* methane oxidation associated with the roots and rhizomes of aquatic macrophytes. Annual Meetings of the American Society for Microbiology, Washington, D.C.

Campbell, B.R. and G.M. King. 1995. Fate of trifluoromethane in methanotrophic cultures and soils. Annual Meetings of the American Society for Microbiology, Washington, D.C.

Schnell, S. and G.M. King. 1995. Response of atmospheric methane oxidation by soils to water stress. Annual Meetings of the American Society for Microbiology, Washington, D.C.

Williams, J.B. and G.M. King. 1996. Response of forest soils to methane deprivation. Annual Meetings of the American Society for Microbiology, New Orleans, LA.

Williams, H.G., J.B. Williams and G.M. King. 1996. Methanotrophic bacteria associated with plant roots. Annual Meetings of the American Society for Microbiology, New Orleans, LA.

Calhoun, A.J.K. and G.M. King. 1996. Controls of methane oxidation by plant roots. Annual Meetings of the Ecological Society of America, Kingston, RI.

King, G.M. 1997. Microbial controls of atmospheric carbon monoxide. Annual Meetings of the American Society for Microbiology, Miami, FL.

- Benstead, J. and G.M. King. 1997. Role of methanol in the oxidation of atmospheric methane by soils and pure cultures of methanotrophic bacteria. Annual Meetings of the American Society for Microbiology, Miami, FL.
- Chung, W.K. and G.M. King. 1997. Polyaromatic hydrocarbon degradation in the burrow wall sediment of marine macrofauna. Annual Meetings of the American Society for Microbiology, Miami, FL.
- Rich, J.J. and G.M. King. 1998. Carbon monoxide oxidation by bacteria associated with the roots of aquatic macrophytes. Annual Meetings of the American Society for Microbiology, Atlanta, GA.
- King, G.M. and M.A.Garey. 1998. Associations of iron-reducing bacteria with aquatic plant roots. Annual Meetings of the American Society for Microbiology, Atlanta, GA.
- Hardy, K.R. and G.M. King. 1998. Microbial ecology of atmospheric methane oxidation by soils. Annual Meetings of the American Society for Microbiology, Atlanta, GA.
- Chung, W.-K. and G.M. King. 1998. Controls of PAH degradation in the burrow wall sediments of marine macrofauna. Annual Meetings of the American Society for Microbiology, Atlanta, GA.
- Chung, W.-K. and G.M. King. 1999. Characterization of novel marine PAH-degrading isolates from animal burrows. NEMPET, Blue Mountain Lake, NY.
- King, G.M. 2000. Trace gas exchange between the atmosphere and recent lava-derived soils. Annual Meetings of the American Society for Microbiology, Los Angeles, CA.
- Hardy, K. and G.M. King. 2000. Enrichment of high-affinity CO oxidizers from a Maine forest soil. Annual Meetings of the American Society for Microbiology, Los Angeles, CA.
- Nanba, K. and G.M. King. 2000. Inhibition of atmospheric methane consumption in forest soils by aluminum. Annual Meetings of the American Society for Microbiology, Los Angeles, CA.
- Chung, W.-K. and G.M. King. 2000. Isolation and characterization of novel PAH degraders from macrofaunal burrow sediments. Annual Meetings of the American Society for Microbiology, Los Angeles, CA.
- King, G.M. 2001. Atmospheric trace gases (CO, H₂, CH₄) as substrates for bacterial metabolism on recent Hawaiian lava and tephra. Annual Meetings of the American Society for Microbiology, Orlando, FL.
- King, G.M. and H.Crosby. 2001. Carbon monoxide and hydrogen dynamics associated with legume and non-legume roots. Annual Meetings of the American Society for Microbiology, Orlando, FL.
- King, G.M. and M.A. Hungria. 2002. Soil-atmosphere CO exchange in a Brazilian agroecosystem. Annual Meetings of the American Society for Microbiology, Salt Lake City, UT.
- King, G.M. and H. Crosby. 2002. Isolation and characterization of novel aerobic CO-oxidizing bacteria. Annual Meetings of the American Society for Microbiology, Salt Lake City, UT.
- Crosby, H., K. Roache, G.M. King. 2003. Anaerobic carbon monoxide oxidation by denitrifying and nitrate-respiring carboxydophilic cultures and by soils. Annual Meetings of the American Society for Microbiology, Washington, D.C.
- Rau, D. and G.M. King. 2003. Carbon monoxide biogeochemistry in intertidal marine sediments. Annual Meetings of the American Society for Microbiology, Washington, D.C.
- Dunfield, K.E. and G.M. King. 2003. Molecular analysis of carbon monoxide-oxidizing bacteria colonizing recent Hawaiian volcanic deposits. Annual Meetings of the American Society for Microbiology, Washington, D.C.

Nanba, K., K.E. Dunfield, and G.M. King. 2003. Application of bacterial rubisco for analysis of lithotrophic communities on recent volcanic deposits. Annual Meetings of the American Society for Microbiology, Washington, D.C.

Gomez-Alvarez, V., G.M. King and K. Nüsslein. 2003. Microbial composition and the role of atmospheric trace gases on recent lava flows. Annual Meetings of the American Society for Microbiology, Washington, D.C.

King, G.M. 2003. Carbon monoxide oxidation by pathogenic mycobacteria and possible roles in pathogenicity. Annual Meetings of the American Society for Microbiology, Washington, D.C.

King, G.M. 2004. Spatial and temporal patterns of microbial diversity at mesoscales. Annual Meetings of the American Society for Microbiology, New Orleans, LA.

Dunfield, K., G.M. King, S. Cleave and C.M. Murrell. 2004. Molecular analysis of rhizosphere-associated carbon monoxide oxidizers. Annual Meetings of the American Society for Microbiology, New Orleans, LA.

Gomez-Alvarez, V., G.M. King, K. Nusslein. 2004. Bacterial and archaeal community structure in recent Hawaiian volcanic deposits. Annual Meetings of the American Society for Microbiology, New Orleans, LA.

Weber, C.F and G.M. King. 2004. Enrichment and characterization of novel CO-oxidizing bacteria from marine macroalgae. Annual Meetings of the American Society for Microbiology, New Orleans, LA.

King, G.M. 2004. Interactions between vascular plants and CO-oxidizing bacteria colonizing volcanic deposits. Annual Meetings of the American Society for Microbiology, New Orleans, LA

plus a total of > 40 presentations-abstracts at ASM since 2004, including two student award presentations

Invited seminars and presentations:

Michigan State University, 1978
University of Dayton, 1979
University of Mississippi, 1979
U.S. Geological Survey, Reston, VA, 1980; 1984
University of Texas, 1981
University of Maine, 1981; 1983; 1998 (x 2); 2004
University of South Carolina, 1983; 1985; 1987; 2002
University of New Hampshire, 1983, 1986, 1990
State University of New York, Stony Brook, 1985, 1987, 1989, 2013
Bigelow Laboratory for Ocean Sciences, 1986; 1992
Smithsonian Radiation Biology Laboratory, 1986
University of Aarhus, Denmark, 1988, 1989, 1993
University of Alabama, 1986, 1994
Odense University, Denmark, 1990
McGill University, 1990
University of Minnesota, 1991
Marine Biological Laboratory, Woods Hole, 1994
University of Georgia, 1995, 1998, 2001, 2005
Notre Dame University, 1995
Woods Hole Oceanographic Institution, 1995; 2002
California Institute of Technology, 1996
University of Colorado, Boulder, 1996
Max-Planck-Institut für Terrestrische Mikrobiologie, Marburg, Germany, 1996
Georgia Institute of Technology, 1997
Japanese National Institute of Environmental Sciences, Tsukuba, Japan; 1998
Colby College, 1999
University of Massachusetts-Amherst, 2000
Cornell University, 2001

University of Connecticut, 2001
Tokyo University, 2001
Weill Medical College of Cornell University, 2002
Michigan Technological University, 2002
Warwick University, England, 2002
Cornell College, 2004
Aarhus University (Denmark), 2004, 2007
University of Maine, 2004
Louisiana State University, 2006
Argonne National Laboratory, 2008
University of Florida, 2009
University of Oklahoma, 2009
Michigan State University, 2009
Florida International University, 2010
Kansas State University, 2010
Texas A&M University, 2012
Ibaraki University, Japan, 2006, 2010, 2011
Yonsei University, Korea, 2013

Symposia and conferences:

Functional ecology of estuarine ecosystems. University of Georgia, 1978.
International symposium on algal biomass. University of Colorado, 1984.
International symposium on nitrogen cycling in coastal ecosystems, Denmark, 1985.
Global Biospherics conference. NASA, Ames, 1985.
Belowground processes in salt marshes; NSF-sponsored in Edgewater, MD, 1985.
Gordon Research Conference, Estuarine Processes. Plymouth, NH, 1986.
Gordon Research Conference, Organic Geochemistry. Plymouth, NH, 1986.
American Chemical Society Symposium- Atmospheric methane: formation and fluxes from the biosphere/geosphere. Session chairman and speaker; Denver, 1987.
Danish Environ. Biotechnological Conference. Keynote speaker. Denmark, 1988.
CIRAC/NASA Canadian Northern Wetlands Project Workshop; Toronto, 1991.
Microbial Catalysis in Metal Biogeochemistry. Seminar organizer; American Chemical Society, San Francisco; 1992.
International Symposium on C₁ Compounds. Warwick, England; August 1992.
New Perspectives on the Microbial Ecology of Methane Cycling. Seminar organizer; Annual Meetings of the American Society for Microbiology, Atlanta; 1993.
Microbiology of Trace Gases; NATO-ARW; Il Ciocco, Italy, May 1995.
International Symposium on C₁ Compounds. San Diego, CA; August 1995.
NEMPET 1996. Keynote address. Blue Mountain Lake, NY; June 1996.
Processes and structures in marine methane and sulfide biotopes. Winterscheid, Germany; September 1996.
International Symposium on Environ. Biogeochem.; Monopoli, Italy, September 1997.
SCOPE Workshop on Benthic Biodiversity; Wageningen, Netherlands; April 1997.
International Conference on Carbon Monoxide and its Environmental Effects; Portland, OR; December, 1997.
OEUVRE: developing a vision for biological oceanography (NSF-sponsored); Jan 1998.
SCOPE Workshop on Benthic Biodiversity; Lunteren, Netherlands; October, 1998.
ASM Conference on Microbial Biodiversity; Role of C₁ transformations in biogeochemical cycles; Chicago, August 1999.
Gordon Research Conference, Molecular basis of microbial 1-C metabolism, Conn. Coll.; July 2000.
Frontiers in Marine Science, University of Connecticut; September 2001.
LExEn/Microbial Observatory Workshop, Washington, D.C.; September, 2002
22nd Brazilian Congress on Microbiology, Florianopolis, Brazil; keynote speaker, 2003
Frontiers in Geomicrobiology, Aarhus University; keynote speaker, 2004
Okazaki Biology Conference, invited speaker, Nagoya, Japan; 2004
ASM Symposium, Microscope to Macroscopic: scaling in microbial ecology; New Orleans, LA, 2004
Gordon Research Conference, Molecular basis microbial 1-C metabolism, Mt. Holyoke Coll.; Aug 2004.

International Union of Microbiological Sciences. Microbes and Global Change; San Francisco, 2005
 ASM Symposium on Large-scale infrastructure; Atlanta, GA, 2005
 ISEB/ISSM, Carbon Cycling and Carbon Sequestration; Jackson, WY, 2005
 Gordon Research Conference, Molecular basis microbial 1-C metabolism, Oxford Univ.; Aug 2006
 Japanese Society for Microbial Ecology, invited presentation, September, 2007
 Gordon Research Conference, Molecular basis microbial 1-C metabolism, Bates Coll.; Aug 2008
 ESA, NEON symposium, 2009
 American Academic of Microbiology, Scaling biogeochemistry from microbes to the globe; 2010
 Microbes and sustainability in agroecosystems, keynote lecture, Ibaraki University, 2011
 Co-chair, International Society of Soil Science, volcanic soils session, Jeju University, 2014

J. Professional services.

1. Editor, FEMS Microbiology Ecology, 1993-present.
2. Editor, Aquatic Microbial Ecology, 1997-2002.
3. Editorial board, Aquatic Microbial Ecology, 1995-1997; 2002-present.
4. Editorial board, Applied and Environmental Microbiology, 1985-1993.
5. Editorial board, Frontiers in Microbiology, 2011-present
6. Ad hoc reviewer for:

Journals (among others)-

Biogeochemistry	J. Industrial Microbiol.	Atmospheric Environ.
Biological Bulletin	J. Marine Research	Global Change Biology
Environ. Sci. Technol.	J. Microbiol. Methods	Soil Biol. Biochemistry
Estuaries	Limnol. Oceanogr.	J. Geophysical Research
Geochim. Cosmochim. Acta	Marine Biology	Plant, Cell Environ.
Geomicrobiology	Mar. Ecol. Prog. Series	Nature
Global Biogeochem. Cycles	J. Exper. Mar. Biol. Ecol.	Science

Granting agencies -

NSF: Divisions of Ocean Sciences, Earth Sciences, International Programs, and Environmental Biology
 NOAA, Sea Grant Program and National Undersea Research Program
 USEPA
 NASA
 State of Montana, EPSCoR Program
 North Carolina State Board of Science and Technology
 State of Louisiana EPSCoR Program
 Natural Sciences Research and Engineering Council of Canada
 UK Research Councils

3. Panel service (numerous occasions)-

NSF: DEB Ecosystem Studies; Ocean Sciences (Biol. and Chem. Oceanogr.); TECO; Biocomplexity; Microbial Observatories; Macrosystems Ecology
 NSF: STC site-review teams- C-MORE (three panels, chair of one) and C-MOPS
 EPA: Environmental Health Effects; EPA, Mercury Fate and Transport
 NOAA/NURC: (UConn and UNC Wilmington)
 DOE: Sub-surface Science Program review team; INEEL-MIT Program Review Team
 DOE: Carbon sequestration science
 AAAS: Rhode Island climate science program review

In addition, I served a 3-year term for NSF DEB Ecosystem Studies and NSF DEB Field Stations and Marine Laboratories

K. Contracts and Grants.

Principal investigator -

NOAA/Sea Grant. Macroalgal fermentation: an assessment of microbiological and biochemical controls. \$68,490. 1983-1986.

NSF. Ecosystems Studies Program. Effects of sediment chemistry on primary production in salt marshes. \$137,104. 1984-1987. (Funded in conjunction with separate project of Dr. J.T. Morris, Univ. South Carolina).

NSF. Biological Research Resources. Analytical facilities for the Darling Center. \$80,000. 1984-1985. (PI, with L. Mayer and L. Watling).

NASA. Regulation of methylated gas emission from coastal and inland salt marshes. \$130,000. 1984-1987.

FMC Corporation. Susceptibility of carrageenan to anaerobic fermentation. \$12,000. 1983-1984.

FMC Corporation. Assessment of carrageenan nitrogen content. \$9,000. 1984-1985.

NSF. Marine Chemistry Program. Aspects of polysaccharide and protein biogeochemistry: controls of polymer hydrolysis and metabolism. \$224,013. 1987-1989. (PI, with L. Mayer).

EPA. Exploratory Research Program. Physiology and genetics of marine halophenol-degrading bacteria. \$145,520; 1987-1989. (PI, with J. Singer).

NASA. Controls of methane emission and oxidation in wetland ecosystems. \$178,000. 1988-1991.

NOAA/NURP. Oxygen dynamics and anaerobic metabolism in sediments of Salt River Canyon. \$11,600. 1988-1989.

NOAA/NURP. Effects of animal disturbance on microbial processes in sediments of Salt River Canyon. \$17,200. 1989-1990.

NSF/DEB. Regulation of methane oxidation in wetlands. \$238,000. 1991-1994.

NASA/Life Sciences. Gas exchange in wetlands: controls and remote sensing. 1992-1994. \$280,000.

NSF/Biological Oceanography. Bacteriolytic activity in the guts of deposit feeders: distribution, environmental influences and mechanisms of differential susceptibility in ingested microbes. 1992-1994. \$131,000. (PI, with L.M. Mayer).

NSF/Biological Oceanography. Ecological and biogeochemical consequences of bromoorganic accumulation in the enteropneust, *Saccoglossus kowalevskyi*. 1992-1995. \$225,000. (PI, with I. Kornfield).

NSF/Ecosystems Studies Program. Significance and controls of methane oxidation in wetlands. 1992-1996. \$238,000.

NASA/Terrestrial Ecosystems (Earth Sciences Division). Root associated methane oxidation and methanogenesis: key determinants of wetland methane emissions. 1993-1996. \$300,000.

USDA/Competitive Grants Program. Atmospheric methane consumption by soils: microbiology, ecology and controls. 1994-1997. \$210,000.

NSF/Ecosystem Studies Program. The dynamics and significance of carbon monoxide exchanges between wetlands and the atmosphere. 1996-1999. \$230,000.

ONR/Marine Environmental Quality Program. Enhanced degradation of aliphatic and aromatic hydrocarbons by the microbiota of animal burrow wall sediments. 1996-1999. \$390,299.

NSF/Ecosystem Studies Program. Carbon monoxide consumption by forest and agroecosystem soils. 1997-2000. \$310,000

USDA/Competitive Grants Program. Carbon monoxide production by legumes and impacts on rhizosphere microbiology. 1999-2001. \$90,000.

Charles A. and Anne Morrow Lindbergh Foundation. Role of legumes in atmospheric CO dynamics. 2000-2001. \$10580 (symbolic award, cost of Lindbergh's "Spirit of St. Louis").

NSF/LexEn. Role of trace gases in early microbial succession on recent lavas. 2000-2003. \$505,000.

NSF/Ecosystem Studies Program. Plant controls of terrestrial trace gas fluxes: legumes, microbes, CO and hydrogen. 2001-2004. \$391,638.

NSF/Ocean Sciences. An ecophysiological analysis of marine lithotrophic and CO-oxidizing bacterial communities. 2004-2007. \$478,399.

NSF/Biology. Microbial Observatories: A Kilauea Volcano Microbial Observatory for CO-oxidizing bacteria. 2004-2009. \$885,993.

NSF/Ecosystem Studies Program. Carbon-monoxide-based ecological interactions between legumes and their rhizobial symbionts. \$310,000. 2005-2008.

NSF/International Programs. U.S.-Korea cooperative research: carbon monoxide as a substrate for microbial maintenance. \$18,900. 2004-2006.

NSF/Emerging Frontiers. Workshop to integrate microbial biology with the National Ecological Observatory Network. \$79085. 2008-2009.

GRI-BP Inc. \$179,000. 2010-2011. Response of Gulf of Mexico bacterioplankton to the Deepwater Horizon oil spill – a pre-spill assessment.

NSF/Biotic Systems and Inventories. \$394,000. 2012-2016. Phylogeny and ecology of aerobic thermophilic CO-oxidizing bacteria.

GoMRI-LSU. \$800,000. 2012-2013. Analysis of oil spill impacts on salt marsh sediment surface biophysical properties.

Co-principal investigator -

NOAA/NURP. Decomposition of drift algae in the sediments of Salt River Canyon. \$9,700. 1985-1986. (with Drs. L. Watling, L. Mayer, R. Steneck).

NSF. Biological Research Resources. Refurbishment of Darling Center analytical and wet laboratory capabilities. \$38,500. 1987. (with Drs. L. Watling and L. Mayer).

NOAA/NURP. Fate of macroalgal biomass in Gulf of Maine sediments. Submersible and shipboard costs only. 1987. (with Drs. L. Watling and R. Steneck).

NSF. Marine Chemistry Program. \$105,000. 1989-1990. (with Dr. L. Mayer).

NSF. RAPID. \$150,000. 2010-2011. Response of *Vibrio* spp. to the Deepwater Horizon oil spill. (with C. Johnson and E. Laws).

NASA. \$1,250,000. 2010-2013. MARS LIFE: role of the atmosphere as a training ground for extremophiles (with Dr. B. Chrisnter et al.).

NSF. EAGER. \$42987. 2012-2014. The role of priming in microbial utilization of terrestrially-derived dissolved organic carbon: a proof of concept (with Dr. T. Bianchi et al.)

L. University Service.

1. Teaching (LSU)-

Principles of Microbial Ecology
Prokaryotic Diversity
Introduction to Systems Modeling
Prokaryotic Diversity
Critical analysis: Human responses to catastrophies and disasters
Critical analysis: the individual and the community

2. Other-

Organized Initiative in Integrative Microbial Biology (www.iimb.lsu.edu)
Search committee, Dean, School of the Coast and the Environment (LSU)
Virology Search Committee (LSU)
Search Committee, Microbial Physiologist, Biochem. Microbiol. Mol. Biol.
Peer Committee, Biochem. Microbiol. Mol. Biol.
Peer Committee, School of Marine Sciences
Search Committee, BMMB Chair
Search Committee, Fish Disease Microbiologist
College of Science Biological Sciences Task Force
President's Task Force on Reorganization of Marine Sciences
Search committee, Marine Molecular Biologist, Dept. Biochem, Microbiol.
Graduate RA Committee, Center for Marine Studies
Chairman, Policy Advisory Committee, Center for Marine Studies
Chairman, Distinguished Lecturers in Marine Science Seminar Series
Senior Staff Committee, Center for Marine Studies
Chairman, Graduate Admissions Committee, Oceanography Program
President's Task Force on Ocean Sciences
Microbiology Peer Review Committee
Biology Ph.D. Program Committee
Graduate Admissions Committee, Oceanography Program
Center for Marine Studies Advisory Committee
Sub-committee chair, Honors College Program Committee
Search committee, Director for Sponsored Programs
Search committee, Algal Physiologist, Department of Botany
Chair, Darling Center Faculty Committee

M. Miscellaneous.

Organized national workshop for microbial biology and NEON; serve on NEON's "Microbiology Working Group"
Elected to the Executive Board, International Symposium for Environmental Biogeochemistry, 1999-2005
Elected to the International Committee of the International Symposium for Environmental Biogeochemistry, 1991-1999
SCOPE (Sweden), Committee on Soil, Sediment and Freshwater Microbial Diversity
Workshop organizer, "Techniques in Molecular Biology", Darling Marine Center, Univ. Maine; July, 1992
Chief Scientist and Aquanaut Team Leader, Underwater Laboratory "Aquarius", Missions 88-2 and 89-2; Aquanaut, Underwater Laboratory "HydroLab", Mission 85-3, 1985

President, South Bristol School Board, South Bristol, ME, 1993-1998
Chair, Union 74 School Board (towns of Bristol, South Bristol, Bremen, Nobleboro,
Damariscotta and Newcastle, ME), 1994-1996
Taught 7th-grade science, Science Fridays, Nobleboro Central School, Nobleboro, ME; 1995-1996
Chair and Founder, Mozart for Mid-coast Maine (host organization for National
Endowment for the Arts Rural Residency Program), 1995-1998
Trustee, Penobscot School, 1997-2002; Treasurer, 2000-2003
Director, Anonimo Foundation, 2000-

M. References.

Dr. C. D'Elia
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Baton Rouge, LA 70803

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DK-3000 Helsingør, Denmark

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Dr. J.M. Tiedje
Center for Microbial Ecology
Michigan State University
East Lansing, MI 48824