

CURRICULUM VITAE**JOEL E. KOSTKA**

Department of Oceanography
 Florida State University
 Tallahassee, FL 32306-4320

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EDUCATION

1993 Ph.D. Marine Science, University of Delaware, Newark, DE
 1988 M.S. Marine Biology, College of Charleston, SC
 1985 B.S. Biology, Western Illinois University

PROFESSIONAL EXPERIENCE

1999-present Assistant, Associate Professor, Florida State University, Dept. of Oceanography
 2006-2007 Fellow/ Visiting Scientist, Hanse Institute for Advanced Studies (Delmenhorst), Max Planck Institute for Marine Microbiology (Bremen), Germany
 1997-present Adjunct professor, Georgia Inst. of Technology Earth and Atmos. Sciences and Civil Eng. Dept.s
 1998-present Adjunct professor, Univ. of Georgia-Marine Sciences and Microbiology Dept.s
 1996-1999 Assistant professor, Skidaway Institute of Oceanography
 1995-1996 Visiting Scientist, Max Planck Institute for Marine Microbiology
 1993-1995 Research Associate, Postdoctoral Fellow, Center for Great Lakes Studies, University of Wisconsin-Milwaukee
 1987-1992 Research Assistant in Marine Microbiology/Chemistry, Marine Biology/Biochemistry Dept., University of Delaware
 1987 Research Technician in Biological Oceanography, College of Charleston
 1986 Research Assistant, College Center of the Finger Lakes Bahamian Field Station, San Salvador, Bahamas

RESEARCH INTERESTS

Biogeochemistry; Microbial Ecology; Environmental Microbiology; Geomicrobiology

PROFESSIONAL AWARDS

2005 Developing Scholar Award, Florida State University
 2000 Ralph E. Powe Junior Faculty Enhancement Award, U.S. Department of Energy/ Oak Ridge Associated Universities
 1993 National Science Foundation Postdoctoral Fellowship Award, Marine Biotechnology
 1993 Selected to attend Dissertations Symposium in Chemical Oceanography (DISCO; sponsored by NSF, ONR, NOAA)
 1993 Best Dissertation Award, Marine Biology, Univ. of Delaware
 1986 Slocum-Lunz Foundation Competitive Fellowship in Marine Biology
 1985 Honors Scholar in Biology, Western Illinois University
 1985 Phi Kappa Phi Honor Society
 1984 Tri-Beta Biological Honor Society

EDITORIAL BOARD MEMBER

Applied and Environmental Microbiology
Marine Biology Research

PROFESSIONAL SOCIETIES

American Society for Microbiology (ASM)
 American Geophysical Union (AGU)
 American Society of Limnology and Oceanography (ASLO)

PUBLICATIONS- ALL REFEREED**Publications at Florida State University (1999-2007)**

31 total: 30 published, 1 in review

Publications all years (1991-2007)

42 total: 41 published, 1 in review

- A. C. Smith, J.-H. Hyun, D. Thistle, Y. Furukawa, C. Alexander, and J.E. Kostka. 2007. Addressing spatial variability by scaling up sediment biogeochemistry to the near ecosystem level in a saltmarsh on the east coast of the United States. *Marine Ecology Progress Series* (submitted).
- J. W. Stucki, K. Lee, B. A. Goodman, and J. E. Kostka. 2007. Effects of *in situ* biostimulation on iron mineral speciation in a sub-surface soil. *Geochimica Cosmochimica Acta* (in press).
- D. M. Akob, H. J. Mills, D. L. Swofford, J. E. Kostka. 2007. Metabolically-Active Microbial Communities in Uranium-Contaminated Subsurface Sediments. *FEMS Microbiology Ecology* 59: 95-107.
- J.-H. Hyun, A. C. Smith and J. E. Kostka. 2007. Relative significance of sulfate- and iron(III) reduction to organic matter mineralization and its controls in contrasting habitats of the Georgia saltmarsh. *Applied Geochemistry* (in press).
- E.M. Hunter, H.J. Mills, and J.E. Kostka. 2006. Microbial community diversity associated with carbon and nitrogen cycling in permeable shelf sediments. *Applied and Environmental Microbiology* 72: 5689-5701.
- L. Edwards, K. Kuesel, H. Drake, and J.E. Kostka. 2007. Electron flow in acidic subsurface sediments cocontaminated with nitrate and uranium during nuclear weapons production. *Geochimica et Cosmochimica Acta* 71: 643-654.
- J.W. Stucki and J.E. Kostka. 2006. Microbial reduction of iron in smectite. *Compte Rendu Geosciences* 338: 468-475.
- K. Lee, J.E. Kostka, and J.W. Stucki. 2006. Comparisons of structural iron reduction in smectites by bacteria and dithionite: an infrared spectroscopic study. *Clays and Clay Minerals* 54: 195-208.
- S. G. Wakeham, A. P. McNichol, J.E. Kostka, and T.K. Pease. 2006. Natural-abundance radiocarbon as a tracer of assimilation of petroleum carbon by bacteria in saltmarsh sediments. *Geochimica et Cosmochimica Acta* 70: 1761-1771.
- E. Kristensen and J.E. Kostka. 2005. Macrofaunal burrows and irrigation in marine sediment: microbiological and biogeochemical interactions. In: *Interactions between Macro- and Microorganisms in Marine Sediments*, E. Kristensen, J.E. Kostka, R. Haese (edit's), American Geophysical Union, Washington, DC, 390 pp.
- S.L. Dollhopf, J. Hyun, A.C. Smith, H.J. Adams, S. O'Brien, and J.E. Kostka. 2005. Quantification of ammonia-oxidizing bacteria and controls of nitrification in saltmarsh sediments. *Applied and Environmental Microbiology* 71:240-246.
- C. Koretsky, A. Roychoudhury, E. Voillier, C. Moore, J.E. Kostka, T. DiChristina, P. Van Cappellen. 2005. Salt marsh pore water geochemistry does not correlate with microbial community structure. *Estuarine, Coastal, and Shelf Science* 62:233.
- A.C. Smith, J.E. Kostka, R. Devereux, and D.F. Yates. 2004. Seasonal composition and activity of sulfate-reducing prokaryotic communities in seagrass bed sediments. *Aquatic Microbial Ecology* 37: 183-195.
- Y. Furukawa, A.C. Smith, J.E. Kostka, J. Watkins, and C.R. Alexander. 2004. Quantification of macrobenthic impacts on diagenesis using a multicomponent inverse model in saltmarsh sediments. *Limnology and Oceanography* 49: 2058-2072.
- N.N. North, S.L. Dollhopf, L. Petrie, J.D. Istok, D.L. Balkwill, and J.E. Kostka. 2004. A Change in Bacterial Community Structure During *in situ* Biostimulation of Subsurface Sediment Cocontaminated with Uranium and Nitrate. *Applied and Environmental Microbiology* 70: 4911-4920.
- L. Petrie, N.N. North, S.L. Dollhopf, D.L. Balkwill, and J.E. Kostka. 2003. Enumeration and characterization of iron(III)-reducing microbial communities from acidic subsurface sediments contaminated with uranium (VI). *Applied and Environmental Microbiology* 69: 7467-7479.

- H. Dong, J.E. Kostka, and J. Kim. 2003. Microscopic evidence for the microbial dissolution of smectite. *Clays and Clay Minerals* 51: 502-512.
- B. Gribsholt, J.E. Kostka, and E. Kristensen. 2003. Impact of fiddler crabs and plant roots on sediment biogeochemistry in a Georgia salt marsh. *Marine Ecology Progress Series* 259: 237-251.
- A. Roychoudhury, J.E. Kostka, P. Van Cappellen. 2003. Pyritization: A palaeoenvironmental and redox proxy reevaluated. *Estuarine, Coastal, and Shelf Science* 57:1183-1193.
- A. Roychoudhury, P. Van Cappellen, J.E. Kostka, E. Voillier. 2003. Kinetics of microbially-mediated reactions: dissimilatory sulfate reduction in saltmarsh sediments (Sapelo Island, Georgia, USA). *Estuarine, Coastal, and Shelf Science* 56: 999-1008.
- J. Cervini-Silva, J.E. Kostka, R.A. Larson, J.W. Stucki, and J. Wu. 2003. Promoted dehydrochlorination of 1,1,1-trichloroethane and pentachloroethane by microbially-reduced ferruginous smectite. *Environmental Toxicology and Chemistry* 22: 1046-1050.
- R.A. Jahnke, C.R. Alexander, and J.E. Kostka. 2003. Advective pore water input of nutrients to the Satilla River Estuary, Georgia, USA. *Estuarine, Coastal and Shelf Science* 56:641-653.
- J.E. Kostka, D. Dalton, H. Skelton, S. Dollhopf, and J.W. Stucki. 2002. Growth of iron(III)-reducing bacteria on clay minerals as the sole electron acceptor and a growth yield comparison on a variety of oxidized iron forms. *Applied and Environmental Microbiology* 68: 6256-6262.
- J.E. Kostka, B. Gribsholt, E. Petrie, D. Dalton, H. Skelton, and E. Kristensen. 2002. The rates and pathways of carbon oxidation in bioturbated saltmarsh sediments. *Limnology & Oceanography* 47:230-240.
- J.E. Kostka, A. Roychoudhury, P. Van Cappellen. 2002. Rates and controls of anaerobic microbial respiration across spatial and temporal gradients in saltmarsh sediments. *Biogeochemistry* 60: 49-76.
- B.J. Campbell, C. Jeanthon, J.E. Kostka, A. Reysenbach, G.W. Luther, and S.C. Cary. 2001. Growth and phylogenetic properties of novel epsilon Proteobacteria enriched from *Alvinella pompejana* and deepsea hydrothermal vents. *Applied and Environmental Microbiology* 67:4566-4572.
- J.C. Xu, J.W. Stucki, J. Wu, J.E. Kostka, and G.K. Sims. 2001. Fate of Atrazine and Alachlor in redox-treated ferruginous smectite. *Environmental Toxicology and Chemistry* 20: 2717-2724.
- J.K. King, J.E. Kostka, M.E. Frischer, F.M. Saunders, and R.A. Jahnke. 2001. Quantitative relationship that demonstrates mercury methylation rates in marine sediments are based on community composition and activity of sulfate-reducing bacteria. *Environmental Science and Technology* 35: 2491-2496.
- J. K. King, J. E. Kostka, M. E. Frischer, and F. M. Saunders. 2000. Sulfate-Reducing Bacteria Methylate Mercury at Variable Rates in Pure Culture and in Marine Sediments. *Applied and Environmental Microbiology* 66: 2430-2437.
- Kostka, J.E., Haefele, E., Viehweger, R., and J.W. Stucki. Respiration and Dissolution of Fe(III)-containing Clay Minerals by Bacteria. 1999. *Environmental Science and Technology* 33:3127-3133.
- Kostka, J.E., Wu, J.; Nealson, K.H.; and J.W. Stucki. 1999. The impact of structural Fe(III) reduction by bacteria on the surface chemistry of clay minerals. *Geochimica et Cosmochimica Acta* 63:3705-3713.
- Kostka, J.E., Thamdrup, B., Glud, R.N, and D.E. Canfield. 1999. Rates and Pathways of Carbon Oxidation in Permanently Cold Arctic Sediments. *Marine Ecology Progress Series* 180: 7-21.
- Kostka, J.E., and K.H. Nealson. 1998. Isolation, cultivation, and characterization of iron- and manganese-reducing bacteria. Chapter 3. In: *Techniques in Microbiology*, edit. by R.S. Burlage et al., Oxford University Press, New York, 468 pp.
- Kostka, J.E., J.W. Stucki, K.H. Nealson, and J. Wu. 1996. Reduction of structural Fe(III) in smectite by a pure culture of *Shewanella putrefaciens* strain MR-1. *Clays and Clay Minerals* 44: 522-529.

- Kostka, J.E., and K.H. Nealson. 1995. Dissolution and reduction of magnetite by bacteria. *Environmental Science and Technology* 29: 2535-2540.
- Kostka, J.E., and G.W. Luther III. 1995. Seasonal cycling of Fe in saltmarsh sediments. *Biogeochemistry* 29:159-181.
- Kostka, J.E., G.W. Luther, and K.H. Nealson. 1995. Chemical and biological reduction of soluble Mn(III): potential importance as an environmental oxidant. *Geochim.Cosmochim. Acta* 59: 885-894.
- Kostka, J.E., and G.W. Luther III. 1994. Partitioning and speciation of solid phase Fe in saltmarsh sediments. *Geochim. Cosmochim. Acta* 58: 1701-1710.
- Perry, K.A., J.E. Kostka, G.W. Luther III, and K.H. Nealson. 1993. Mediation of sulfur speciation by a Black Sea facultative anaerobe. *Science* 259:801-803.
- Luther, G.W., J.E. Kostka, T.M. Church, B. Sulzberger, and W. Stumm. 1992. Seasonal Fe cycling in the salt marsh sedimentary environment: the importance of ligand complexes with Fe(II) and Fe(III) in the dissolution of Fe(III) minerals and pyrite, respectively. *Marine Chemistry* 40:81-103.
- Luther, G.W., T.G. Ferdelman, J.E. Kostka, E.J. Tsamakis, and T.M. Church. 1991. Temporal and spatial variability of reduced sulfur species and porewater parameters in salt marsh sediments. *Biogeochemistry* 14:57-88.
- Luther, G.W., T.G. Ferdelman, C.H. Culberson, J.E. Kostka, and J. Wu. 1991. Iodine chemistry in the water column of the Chesapeake Bay: evidence for organic iodine forms. *Est. Coast. Shelf Sci.* 32:267

RESEARCH GRANTS

Total Extramural Funding at Florida State University (1999-2007): \$5,153,295

Current Funding:

- Department of Energy, ERSP Program, "Multiscale Investigations on the Rates and Mechanisms of Targeted Immobilization and Natural Attenuation of Metal, Radionuclide, and Co-Contaminants in the Subsurface", 1/31/07-1/30/12, **\$975,000** (PI)
- FSU Research Foundation, Cornerstone Program Enhancement Grant, "Decomposition of Organic Matter in Permeable Apalachicola Bay Sand Sediments, 5/1/05-4/30/08, **\$99,974**, (co-PI)
- Department of Energy, Environmental Remediation Sciences Program (ERSP), "Biostimulation of Iron Reduction and Uranium Immobilization: Microbial and Mineralogical Controls", 9/1/03-2/28/07, **\$1,303,217** (PI; including supplements of \$120,000)
- Department of Energy, ERSP Program, "An Integrated Assessment of Geochemical and Community Structure Determinants of Metal Reduction Rates in Subsurface Sediments", 10/1/04-9/31/07, **\$269,326** (PI)
- National Science Foundation, Chemical Oceanography Program, "Collaborative research: biocatalytical filtration and carbon cycling in permeable shelf sediments," 9/15/04-9/15/07, **\$399,413** (coPI)
- Florida Department of Environmental Protection, "Apalachicola NERRS Nutrient Analysis Project", 2/1/02-1/31/07, **\$24,900 per year** (co-PI)

Past Funding (1998-2006):

- National Science Foundation, Petrology and Geochemistry Program, "Effects of Iron Redox Processes on Smectite Crystal Structures and Surface Chemistry", 4/1/02-4/1/06, **\$100,000** (PI)
- Department of Energy, NABIR Program, "Impacts of mineralogy and competing microbial respiration pathways on the fate of uranium in contaminated groundwater", 8/15/00-8/14/03, **\$790,265**, (PI)
- Oak Ridge Associated Universities- Ralph A. Powe Junior Faculty Enhancement Award, "Impacts of competing microbial respiration pathways on the fate of uranium in contaminated sediments", 6/01/00-6/01/01, **\$10,000**, (PI)

- FSU Research Foundation, Cornerstone Program Enhancement Grant, "Developing solid-state microelectrode and optical waveguide sensors for measuring trace elements and redox species in natural and contaminated waters, 5/1/00-4/30/02, **\$100,000**, (co-PI)
- FSU Research Foundation, First Year Assistant Professor Award Program, "The impact of fiddler crabs on nutrient regeneration in saltmarsh sediments", 5/00-8/00, **\$10,000**, (PI)
- U.S. Department of Agriculture, National Research Initiative Competitive Grants Program, "Collaborative project to study an improved soil test for potassium", 2/1/00-2/1/03, **\$45,000**, 0.4 month/yr commitment, (co-PI)
- University System of Georgia, Office of International Education, "Complexity of coastal ecosystems and their response to regional and global environmental change: scientific and educational challenges for the 21st century, 1/15/00-1/15/01, **\$16,000**, (co-PI)
- U.S. Department of Agriculture, Isreal-U.S. Binational Agricultural Research and Development Fund, "Redox processes in soils irrigated with reclaimed sewage effluents: field cycles and basic mechanisms", 1/15/00-1/14/03, **\$139,400**, (co-PI)
- Environmental Protection Agency, Hazardous Substances Research Consortium, "Interactive roles of microbial and *Spartina* populations in mercury methylation processes in bioremediation of contaminated sediments in salt-marsh systems", 10/1/99-9/30/00, **\$120,000** (co-PI)
- U.S. Department of Agriculture, CGP Program, "Abiotic reductive reactions of organic compounds on microbially reduced clay minerals", 10/1/98-9/30/00, **\$200,000**, (co-PI)
- Department of Defense, Augmentation Awards for Science and Engineering Research Training Program, "Genetic regulation and anaerobic microbial catalysis of mixed waste bioremediation", 4/1/98 - 3/31/00, **\$194,044**, (co-PI)
- National Oceanic and Atmospheric Administration, Georgia Sea Grant College Program, "Rates and controls of sediment processes regulating nutrient regeneration/burial in the Satilla River estuary", 3/1/98 - 3/1/00, , **\$118,000** (PI)
- Univ. of IL-CFAR , "A reliable soil test for potassium", 9/1/97 - 9/1/99, **\$167,500**, (co-PI)
- Office of Naval Research, "Biogeochemical factors affecting microbial transformation of co-occurring contaminants in sediments from a saltmarsh Superfund site", 7/1/97 - 7/1/00, **\$450,000**, (co-PI)

STUDENT MENTORSHIP:

Undergraduate Research Students Mentored (1999-2007):

2000-2002 Hayley Skelton
 2001-2002 Gary Glover
 2001-2002 Jamella White
 2001-2003 Harold Adams
 2003-2003 Julia Glicksberg
 2004-2005 Robert Arnold
 2004-present Jonathan Delgardio
 2005-present Nicole Evans

Undergraduate Howard Hughes Fellow and Honors Thesis Directed (2003-present):

Nicole Evans (Geology, current)
 Deena Westbrook (Biology, graduated in 2004)

Graduate Students (1999-2007):

Chair (3 students graduated; 3 pending):

Nadia North (M.S., graduated 8/03), Lockheed Martin Aeronautics, Palmdale, CA
 Ellen Petrie (Ph.D., graduated 12/04), Florida DEP
 April Goldfinch (Ph.D., graduated 12/04), FSU College of Medicine
 Evan Hunter (M.S., graduated 8/06)
 Denise Akob (Ph.D., 1/04 to present)
 Tom Gihring (Ph.D., 8/04 to present)
 Mike Humphrys (M.S., 8/06 to present)

Committee Member

(25 total from 1999 to 2006; served on 22 student committees at FSU; 3 at other institutions):

Ken Trong (Ph.D., Food Science), Erin Easton (Ph.D.), Volodymyr Zharkov (Ph.D.), Jill Fleiger (M.S.), Cliff Buck (M.S.), Alex Fernandes (Ph.D.), Michael Teasdale (M.S.), Chad Hanson (M.S.), Dana Fields (M.S.), James Prater (Ph.D.), Paulo Barrocas (Ph.D.), Carl Childs (Ph.D.), Jennifer Putland (Ph.D.), Henrieta Dulaiova (Ph.D.), Chris Sedlacek (M.S., Ph.D.), Mike Schultz (Ph.D.), Danielle Harvey (M.S.), Afonso Souza (M.S.), Paige Leitman (Ph.D.), Dan Osborne (Chemistry Dept., Ph.D.), Jason Coym (Chemistry Dept., Ph.D.), Loren Porter (Biology Dept., Ph.D.), Bobby Sauer (Georgia Tech, Environmental Engineering Dept.-M.S.), Charles Moore (Georgia Tech, Biology Dept.-Ph.D.), Uffe Thomsen (Biology Dept., Odense Univ., Denmark)

POSTDOCTORAL ASSOCIATES DIRECTED:

2001-2004 Sherry Dollhopf, NSF Postdoctoral Fellow in Microbial Biology
 Prodesa Corporation, Milwaukee, WI-Current Employer
 2004-present Heath Mills

TEACHING HISTORY**Courses taught/ teaching at Florida State University (2000-2007):**

OCC-5050 Basic Chemical Oceanography (2000, 2002, 2004)
 OCE-1001 Elementary Oceanography (2001, 2003, 2007)
 OCE 1001 Honors Elementary Oceanography (2001)
 OCB-5930 Geomicrobiology (2001, 2004)
 OCB-5636 Microbial Ecology (2002, 2004, 2005)
 OCE-5419 Biogeochemical Field Methods (2004)
 OCB-5930 Phylogeny of Marine and Aquatic Microorganisms (2005)

Lecturer (1997-1999):

1999 "Life and Death of the Saltmarsh" program sponsored by the Univ. of Georgia Marine Extension Service
 1999 NSF-REU program in the marine science dept. at Savannah State University
 1999 Marine Ecology and Biological Oceanography courses at Savannah State University as part of the NSF-CIRE program
 1999 Contaminant Sediment Biogeochemistry Course, Civil Engineering, Georgia Inst. of Technology
 1997-1999 Sediment Microbiology for summer course in Coastal Oceanography and Marine Field Methods at Skidaway Institute of Oceanography

Mentor (1993) NSF Research Experience for Undergrads at Univ. of Wisconsin-Milwaukee

Teaching Assistant (1988) General Biology, University of Delaware

Temporary Faculty (1985-1986) Chemistry, College of Charleston

CONFERENCES/ SYMPOSIA ORGANIZED

"Fundamental Research of Mercury Contamination: Transferring Technology to Develop Solutions," Coorganized with M. Frischer and M. Saunders. A workshop sponsored by the EPA Hazardous Substance Research Center/ South-Southwest, Skidaway Institute of Oceanography, Savannah, GA, 25-26 October, 1999

"Interactions Between Macro- and Microorganisms," Coconvened special session, AGU/ ASLO Ocean Sciences 2002, Honolulu, HI, 11-15 February, 2002

"Working Group on Microbial Community Analysis", Chaired session as working group leader, DOE-NABIR Field Research Center Workshop, Oak Ridge, TN, September, 2003

"Biodiversity and Bioremediation," Chaired session, DOE-NABIR Principal Investigator Meeting, Warrenton, VA, March, 2004

“Working Group Report on Microbial Community Analysis,” Chaired session as working group leader, DOE-NABIR Principal Investigator Meeting, Warrenton, VA, March, 2004

Member of Planning and Steering Committee, American Society for Limnology and Oceanography 2004 Summer Meeting, Savannah, GA, June, 2004

“Biogeochemical Cycles and Macroecology in Coastal Wetlands,” Co-chaired special session, American Society for Limnology and Oceanography 2004 Summer Meeting, Savannah, GA, June, 2004

“Working Group on Microbial Community Analysis”, Chaired session as working group leader, DOE-NABIR Field Research Center Workshop, Oak Ridge, TN, October, 2004

“Working Group on Microbial Community Analysis”, Chaired session as working group leader, DOE-NABIR Field Research Center Workshop, Oak Ridge, TN, October, 2005

INVITED SEMINARS

41 Total Invited Seminars All Years (1995-2006)

23 Total Invited Seminars at Florida State University (1999-2006)

6 Invited Seminars at International Meetings (1995-2006):

Kostka, J.E., 1999. “The Role of Fe(III) Reduction in Diagenesis Over Geologic Time”, Gordon Conference on Chemical Oceanography, Meredith, NH, August.

Kostka, J.E. 1999. “Anaerobic bacteria and nutrient cycling in agricultural soils”, presented 4 invited seminars at the following institutions in the Peoples Republic of China as part of a scientific exchange sponsored by the USDA: China Agricultural University, Beijing; Chinese Academy of Agricultural Sciences, Beijing; Northwestern Agro-forestry University for Science and Technology, Xi'an; Huazhong Agricultural University, Wuhan. September.

Kostka, J.E. 2004. “Interactions between Redox-active Microorganisms and Minerals in Soils and Sediments: Do We Know the Mechanisms?,” Plenary address, Bouyoucos Conference, Soil Science Society of America, San Antonio, Texas, January.

Kostka, J.E. 2004. “Scale-up of sediment biogeochemistry to the ecosystem level in a Georgia saltmarsh,” AGU Chapman Conference on Salt Marsh Geomorphology: Physical and Ecological Effects on Landform, Halifax, Nova Scotia, Canada, October

Kostka, J.E., 2006. “Structure and Function of Microbial Communities in Permeable Marine Sediments”, Gordon Conference on Permeable Sediments, Waterville, ME, June.

6 Invited Seminars at National Meetings (1995-2006):

Kostka, J.E., B. Thamdrup, D.E. Canfield. 1996. “Contiuum of diagenetic reactions relevant to the cycling of Fe minerals in marine sediments”, Third Santa Fe Conference on Rock Magnetism, Santa Fe, NM, June.

Kostka, J.E., M. Frischer, K. Maruya. 1998. “Biogeochemical factors limiting transformation of co-occurring contaminants in salt marsh sediments”, EPA/NSF/ONR/DOE Joint Program in Bioremediation, Research Program Review, Washington, DC, August.

Kostka, J.E. 2001. “Microbially Catalyzed Mineral Transformations Controlling Degradation of Organic Contaminants”, Degradation of Organic Contaminants at Clay Mineral and Related Surfaces, Pre-Meeting Workshop, 38th Annual Meeting of the Clay Minerals Society, The Monona Terrace, Madison, WI, June.

Kostka, J.E. 2002. “Impacts of Mineralogy and Competing Microbial Respiration Pathways on the Fate of Uranium in Contaminated Groundwater,” DOE-NABIR Principal Investigator Meeting, Warrenton, VA, March.

Kostka, J.E. 2002. “Microbial reduction of Fe(III) bound in clay minerals: laboratory investigations of growth and mineral transformation,” 223rd American Chemical Society National Meeting, Division of Geochemistry, Orlando, FL.

Kostka, J.E. 2006. “Microbial Fe(III) reduction: Coupling biogeochemistry with microbiology

to determine process controls in aquatic sediments,” 231st American Chemical Society National Meeting, Division of Geochemistry, Atlanta, GA, March.

29 Invited Seminars at Colleges and Universities (1995-2006):

- Kostka, J.E. 1995. “Bacterial respiration of crystalline Fe(III) minerals”, University of Wisconsin-Madison, Limnology and Oceanography Dept., March.
- Kostka, J.E. 1995. “Fe cycling by marine bacteria”, University of Southwestern Louisiana, Biology Dept., April.
- Kostka, J.E. 1995. “Reduction of crystalline Fe minerals”, Oak Ridge National Laboratory, Subsurface Microbiology Program, May.
- Kostka, J.E. 1995. “Microbial respiration of unavailable Fe(III) minerals”, Skidaway Institute of Oceanography, June.
- Kostka, J.E. 1995. “Respiration of unreactive Fe minerals by bacteria”, Swiss Federal Institute of Technology (EAWAG), Zurich, October.
- Kostka, J.E. 1996. “Rates and pathways of mineralization in continental margin sediments of the Namibian coast”, University of Bremen, Bremen, Germany.
- Kostka, J.E. 1997. “The effects of permanently cold temperatures on the rates and pathways of carbon oxidation in Arctic sediments”, Georgia Institute of Technology, Atlanta, GA, April.
- Kostka, J.E. 1997. “Respiration of clay-bound Fe(III) by bacteria: its potential importance to environmental biotechnology”, EPA lab, Athens, GA, May.
- Kostka, J.E. 1997. “Rates and pathways of microbial respiration in continental margin sediments”, University of Georgia, Athens, GA, June.
- Kostka, J.E. 1997. “Respiration of clay-bound Fe by bacteria: its potential importance to environmental biogeochemistry and biotechnology”, Savannah River Ecology Lab, August.
- Kostka, J.E. 1997. “Rates and pathways of microbial respiration in Arctic sediments”, Center for Microbial Ecology, Michigan State University, East Lansing, MI, October.
- Kostka, J.E. 1998. “Microbial respiration in Georgia saltmarsh sediments along gradients in space and time.”, Univ. of Delaware, College of Marine Studies, Lewes, DE, September.
- Kostka, J.E. 1998. “Controls of Microbial Respiration in Georgia Saltmarsh Sediments over Space and Time.”, Univ. of Georgia, Microbiology, Athens, GA, September.
- Kostka, J.E. 1998. “Microbial Respiration in Georgia Saltmarsh Sediments: Controls and Biogeochemical Feedbacks”, Florida State University, Tallahassee, FL, December.
- Kostka, J.E. 1999. “Biogeochemical Controls of Microbial Respiration in Saltmarsh Sediments”, US EPA/ NHEERL, Gulf Breeze, FL, March.
- Kostka, J.E. 1999. “Microbial Biogeochemistry of Georgia Saltmarsh Sediments: Nutrient Cycles and Contaminant Transformation”, Georgia Tech- Earth and Atmospheric Sciences, Atlanta, GA, April.
- Kostka, J.E. 2000. “The role of bacterial Fe reduction in the carbon and nutrient cycles of agricultural soils.” Odense Univ. of Southern Denmark, Odense, Denmark, July.
- Kostka, J.E. 2000. “Quantitative impacts of higher organisms on sediment biogeochemistry in the saltmarsh”, Dauphin Island Sea Lab, Dauphin Island, AL, December.
- Kostka, J.E. 2001. “Impacts of Macroorganisms on the Pathways of Organic Matter Mineralization in Saltmarsh Sediments,” Texas A&M University, College Station, TX, September.
- Kostka, J.E. 2001. “The Biogeochemistry of Saltmarsh Sediments,” The Danish Center for Earth System Science (DCESS), University of Southern Denmark, Odense, Denmark, October.
- Kostka, J.E. 2002. “Impacts of macro-microorganism interactions on saltmarsh sediment biogeochemistry,” Geology Department Colloquim, Florida State University, April.
- Kostka, J.E. 2002. “Elucidating the Effects of Macrofauna vs. Macrophytes on Sediment Biogeochemistry in the SERF Marsh. Skidaway Inst. of Oceanography, Savannah, GA, July.

- Kostka, J.E. 2003. "Coupling Macroecology to the Structure and Function of Nitrogen-transforming Microbial Communities in Saltmarshes," Microbiology Department, Oklahoma University, April.
- Kostka, J.E. 2003. "Microbial Biogeochemistry of Saltmarshes in the Southeastern U.S.A.," Geoecology Department, University of Bayreuth, Bayreuth, Germany, November.
- Kostka, J.E. 2004. "Coupling of the Fe-S-N Cycles to Macrobenthic Activity in Saltmarsh Sediments," Ecology Seminar Series, Scripps Institution of Oceanography, La Jolla, CA, January.
- Kostka, J.E. 2005. "Metal Reducing Microbial Communities in the Acidic Subsurface," University of Tübingen, Tübingen, Germany, March.
- Kostka, J.E. 2005. "Coupling of Biogeochemical Processes and Macrobenthic Activity from the Micro- to the Macroscale in Saltmarsh Sediments", Max Planck Institute for Marine Microbiology, Bremen, Germany, March.
- Kostka, J.E. 2005. "The Global Significance of Metal Reduction and Metal-Reducing Bacteria," Korea Ocean Research and Development Institute, Seoul, Korea, May.
- Kostka, J.E. 2006. "Microbial diversity and activity in permeable sands of coastal marine ecosystems," Biology Dept., University of South Carolina, March.

MEETING ABSTRACTS

87 Total Meeting Abstracts All Years (1995-2006)

62 Total Meeting Abstracts at Florida State University (1999-2006)

16 Meeting Abstracts at International Meetings (1995-2006):

- J.E. Kostka. Reduction of crystalline Fe(III) minerals by sedimentary bacteria, 4. Fruhdiagenese- (Early diagenesis) Workshop, University of Bremen, Bremen, Germany, September, 1995.
- C. Knoblauch, J.E. Kostka, B.B. Jorgensen. Sulfate reduction in cold sediments, Conference of Federation of European Microbiology, Konstanz, Germany, February, 1996.
- O. Holby, R. Glud, J.E. Kostka. *In situ* pH profiles in marine sediments, Benthic Boundary Layer Symposium, Max Planck Institute, Bremen, Germany, May, 1996.
- J. W. Stucki, J. Wu, L. Yan, J. Cervini-Silva, P. Komadel, R. A. Larson, A. Banin, J. E. Kostka, and H. Gan. Surface Hydration and Organic Compound Interactions of Redox-Treated Smectites. Bouyoucos Conference, Environmental Chemistry at the Clay-Water Interface, Honolulu, HI, June, 2000.
- Kostka, J.E. Respiration of Fe(III) vs. Sulfate Coupled to Organic Matter Remineralization in Saltmarsh Sediments. American Society for Limnology and Oceanography Summer Meeting, Copenhagen, Denmark, June, 2000.
- B. Gribsholt, J.E. Kostka, and E. Kristensen. The Impact of Fiddler Crabs and Plant Roots on Sediment Biogeochemistry in a Georgia Saltmarsh. American Society for Limnology and Oceanography Summer Meeting, Copenhagen, Denmark, June, 2000.
- T.J. DiChristina, C.M. Koretsky, C. Meile, J.E. Kostka, P. Van Cappellen. Seasonal oscillations in iron and sulfate reducing microbial populations in saltmarsh sediments at Sapelo Island, GA. American Society for Limnology and Oceanography Summer Meeting, Copenhagen, Denmark, June, 2000.
- GR Drake, JE Kostka, D Dalton, K Scheinemann, and DL Balkwill. Diversity of dissimilatory Fe(III)-reducing bacteria from soils and subsurface sediments, Annual Meeting of the International Society of Microbial Ecology, Amsterdam, Netherlands, August, 2001.
- Y. Furukawa, J.E. Kostka, and A. Smith. Multicomponent inverse modeling in aquatic sediments. Goldschmidt Conference, Davos, Switzerland, August, 2002.
- Y. Furukawa, A.C. Smith, and J.E. Kostka. Determination of iron and sulfur cycling rates in bioturbated saltmarsh sediments with multicomponent inverse modeling. Goldschmidt Conference, Kurashiki, Japan, August, 2003.
- J. E. Kostka, L. Petrie, N. N. North, S.L. Dollhopf, D. L. Balkwill. Enumeration and Characterization of Iron(III)-Reducing Microorganisms from Acidic Subsurface Sediments For Development of Radionuclide Remediation Strategies. Biogeochemical

- Processes Involving Iron Minerals in Natural Waters, Monte Verita, Switzerland, November, 2003.
- J.W. Stucki, J.E. Kostka, F. Ribeiro, K. Lee, R.A. Larson, and J.D. Fabris. Environmental significance of structural iron(III) reduction in phyllosilicates. Biogeochemical Processes Involving Iron Minerals in Natural Waters, Monte Verita, Switzerland, November, 2003.
- J. Hyun, J. Mok, H. Cho, and J.E. Kostka. Anaerobic carbon mineralization and sulfate reduction rate measured at an unvegetated and vegetated intertidal mudflat in Korea. 10th International Symposium on Microbial Ecology, Cancun, Mexico, August, 2004.
- J. E. Kostka, S. L. Dollhopf, D. Westbrook, E. Hunter, J. Hyun. Structure and function of sedimentary ammonia-oxidizing bacterial communities from a variety of coastal marine ecosystems. 10th International Symposium on Microbial Ecology, Cancun, Mexico, August, 2004.
- J.W. Stucki and J.E. Kostka. Microbial Reduction of Iron in Smectite. Symposium on Abiotic and Biotic Electron Transfer Processes at Mineral Surfaces. Annual Meeting of the Soil Science Society of America, Seattle, November, 2004.
- J.W. Stucki and J.E. Kostka. Biogeochemistry of Structural Iron at the Clay-water Interface. Symposium on the Biogeochemistry of the Cycle of Iron: Green Rusts and Fougerite, French Academy of Science, Paris, December, 2004.
- W.T. Cooper, L. Tremblay, T. Dittmar, M. Huettel, J.E. Kostka, and W.J. Cooper. Molecular characterization of terrestrially-derived DOM in estuarine and marine environments using ultrahigh resolution mass spectrometry and 3-D excitation/emission spectroscopy, 13th Meeting of the International Humic Substances Society, Karlsruhe, Germany, August, 2006.
- F. Dittori, J.E. Kostka, J.D. Fabris, and J.W. Stucki. Comparisons of structural iron reduction in smectites by bacteria and dithionite: a variable-temperature Moessbauer spectroscopic study, Joint Meeting Groupe Francais des Argiles and The Clay Minerals Society, Poitiers, France, June, 2006.
- O. Li, K. Lee, J. E. Kostka, J. W. Stucki, and William F. Bleam. Iron L-edge and K-edge X-ray absorption studies of nontronite reduction, 18th World Congress of Soil Science, Philadelphia, Pennsylvania, July, 2006.

69 Meeting Abstracts at National Meetings (1995-2006):

- J.E. Kostka and K.H. Nealson. Magnetite reduction by bacteria, Annual Meeting of the American Society of Microbiology, May, 1995.
- J.E. Kostka, J.W. Stucki, J. Wu, and K.H. Nealson. Reduction of structural Fe(III) in smectite by *Shewanella putrefaciens* strain MR-1, Annual Meeting of the American Society of Microbiology, May, 1995.
- J.E. Kostka, K.H. Nealson, J. Wu, and J.W. Stucki. Reduction of structural Fe(III) in smectites by a pure culture of Fe-reducing bacteria, Annual Meeting of the Clay Minerals Society, June, 1995.
- J.E. Kostka, B. Thamdrup, D.E. Canfield, and R. Glud. Rates and pathways of carbon mineralization in Arctic sediments, Annual ASLO Meeting, Santa Fe, NM, February, 1997.
- J. E. Kostka. Rates and pathways of microbial respiration in sediments of the South Atlantic, Annual Meeting of the American Society for Microbiology, Miami, FL, May, 1997.
- C. Alexander, J. Kostka, and A. Simoneau. Sediment Dynamics and Bottom Morphology in the Satilla River Estuary, 1997 ERF Meeting, Providence, RI.
- P. Van Cappellen, A. Roychoudry, E. Viollier, K. Lowe, T. DiChristina, and J.E. Kostka. Spatial and temporal variability of the iron and sulfur cycles in saltmarsh sediments: an integrated geochemical and microbiological study. 1998 AGU/ASLO Ocean Sciences Meeting, San Diego, CA
- K.A. Maruya, R.F. Lee, M.E. Frischer, J.E. Kostka, and H.L. Windom. Bioavailability and bioremediation of Aroclor 1268 in saltmarsh sediments, Remediation of Chlorinated and Recalcitrant Compounds, The 1st International Conference, Monterey, CA, June, 1998.
- J.E. Kostka, A. Roychoudhury, and P. Van Cappellen. Changing patterns of microbial respiration in salt marsh sediments across a gradient of *Spartina alterniflora* growth

- forms, 1998 American Society for Limnology and Oceanography Summer Meeting, St. Louis, MO
- J. E. Kostka, E. Haeefe, and R. Viehweger. Respiration and Dissolution of Fe(III)-bearing Clay by *Shewanella putrefaciens*, Annual Meeting of the American Society for Microbiology, May, 1998.
- C.M. Koretsky, P. Van Cappellen, and J.E. Kostka. Seasonal Dependence of Porewater Irrigation in a Saltmarsh at Sapelo Island, GA: Implications for sediment biogeochemistry, 1998 Annual Meeting of the Geological Society of America
- J.E. Kostka, F.M. Saunders, J.K. King, and M.E. Frischer. Characterization of the role of macrophytes and microbial populations in governing the fate/ transport of methyl mercury in highly contaminated estuarine sediments. 1999 Conference on Hazardous Waste Research: Gateways to Environmental Solutions, Sponsored by EPA-HSRC, St. Louis, MO.
- J.E. Kostka, L.B. Cowden, J. King, K.A. Maruya, and M.E. Frischer. Microbial biogeochemistry of saltmarsh sediments cocontaminated with mercury and PCBs, Annual Meeting of the American Society for Microbiology, Chicago, IL, May, 1999.
- J. E. Kostka, A. Roychoudhury, and P. Van Cappellen. Rates and controls of microbial respiration in saltmarsh sediments, Annual Meeting of the American Society for Microbiology, Chicago, IL, May, 1999.
- D. Dalton, R. Viehweger, L.B. Cowden, K. Scheinemann J.W. Stucki and J.E. Kostka: Enrichment and Characterization of Iron(III)-reducing Bacteria in Agricultural Soils, Annual Meeting of the American Society for Microbiology, Chicago, IL, May, 1999.
- J.K. King, M.E. Frischer, J.E. Kostka, and F.M. Saunders. Identification of sulfate-reducing, phylogenetic groups most capable of methylating mercury in pure culture and organic acid amended sediment slurries, Annual Meeting of the American Society for Microbiology, Chicago, IL, May, 1999.
- M.E. Frischer, J.K. King, J.M. Danforth, L.B. Cowden, L.A. Pennill, K.A. Maruya, and J.E. Kostka. Characterization of microbial assemblages associated with saltmarsh sediments co-contaminated with mercury and PCBs. Annual Meeting of the American Society for Microbiology, Chicago, IL, May, 1999.
- J. Wu, J. E. Kostka, D. Dalton, and J. W. Stucki. Extensive Evidence for the Microbiological Reduction of Structural Fe in Clay Minerals, 36th Annual Meeting of the Clay Minerals Society, Purdue University, West Lafayette, Indiana, June, 1999.
- J. E. Kostka, A. Roychoudhury, C. Koretsky, and P. Van Cappellen. Rates and controls of microbial respiration in saltmarsh sediments, VI Symposium on Biogeochemistry of Wetlands, Ft. Lauderdale, FL, July, 1999.
- C.M. Koretsky, P. Van Cappellen, K. Lowe, T.J. DiChristina, and J. Kostka. VI Symposium on Biogeochemistry of Wetlands, Ft. Lauderdale, FL, July, 1999.
- C. Meile, C. Koretsky, P. Van Cappellen, J.E. Kostka. Spatial and temporal variations in bioirrigation: an inverse approach. 5th International Symposium on the Geochemistry of the Earth's Surface, Reykjavik, Iceland, August, 1999.
- A.N. Roychoudhury, P. Van Capellen, K. Lowe, T. DiChristina, and J. Kostka. Iron-sulfur dynamics in saltmarsh sediments: an integrated geochemical and microbiological study. Fall Meeting of the Geological Society of America, October, 1999.
- L. Palekar, J. Wiegel, K. Maruya, J. Kostka. Dechlorination Patterns of PCBs by an Anaerobic will be Consortium of Estuarine Sediment Microorganisms. Annual Meeting of the American Society for Microbiology, Los Angeles, CA, May, 2000.
- J.E. Kostka, H. Skelton, D. Dalton. Growth of *Shewanella oneidensis* on smectite as the sole electron acceptor. Annual Meeting of the American Society for Microbiology, Orlando, FL, May, 2001.
- J.E. Kostka, B. Gribsholt, E. Petrie, H. Skelton, E. Kristensen. The impacts of higher organisms on the abundance/ activity of iron(III) and sulfate-reducing bacteria in saltmarsh sediments. Annual Meeting of the American Society for Microbiology, Orlando, FL, May, 2001.
- D. Dalton, J. E. Kostka, G.R. Drake, K. Scheinemann, and D.L Balkwill. Gram positive, dissimilatory Fe(III)-reducing bacteria isolated from agricultural soils and subsurface

- sediments. Annual Meeting of the American Society for Microbiology, Orlando, FL, May, 2001.
- Zhang, L., R.A. Larson, J.E. Kostka, and J.W. Stucki. In Proceedings of the 38th Annual Meeting of the Clay Minerals Society, Bleam, W.F. (ed.), Univ. of Wisconsin, Madison, WI, June, 2001.
- J.E. Kostka, A.C. Smith, Y. Furukawa, C.R. Alexander. Elucidating the Effects of Macrofauna vs. Macrophytes on Sediment Biogeochemistry in the Georgia Saltmarsh. AGU/ ASLO Ocean Sciences, Honolulu, HI, February, 2002.
- A.C. Smith, J.E. Kostka, R. Devereux, D.F. Yates. Influence of the Seagrass *Thalassia testudinum* on the Community Composition and Activity of Sulfate-Reducing Bacteria in an Essential Coastal Marine Habitat, AGU/ ASLO Ocean Sciences, Honolulu, HI, February, 2002.
- Y. Furukawa, A.C. Smith, J.E. Kostka. Biogeochemical mass transfer in bioturbated and vegetated saltmarsh, Skidaway Island, Georgia, USA, AGU/ ASLO Ocean Sciences, Honolulu, HI, February, 2002.
- R. Devereux, S.S. Wilkinson, D.F. Yates, A.C. Smith, J.E. Kostka. Sulfate-reducing bacteria in the seagrass rhizosphere, AGU/ ASLO Ocean Sciences, Honolulu, HI, February, 2002.
- L. Petrie, J. E. Kostka, S. Dollhopf, N. North, and D. L. Balkwill. Assessment of Iron(III)- and Sulfate-Reducing Microbial Communities and their Impacts on Uranium Reduction, DOE-NABIR Principal Investigator Meeting, March, 2002.
- J. E. Kostka, L. Petrie, S. Dollhopf, N. North, D. L. Balkwill. Enumeration and characterization of Fe(III) and U(VI)-reducing bacteria in subsurface sediments from the U.S. DOE-NABIR Field Research Center (FRC) at Oak Ridge, Tennessee. Annual Meeting of the American Society of Microbiology, Salt Lake City, UT, May, 2002.
- J. Cervini-Silva, J.E. Kostka, R.A. Larson, J.W. Stucki, and J. Wu. Promoted dehydrochlorination of 1,1,1-trichloroethane and pentachloroethane by microbially-reduced ferruginous smectite. Annual Meeting of the Clay Minerals Society, Boulder, CO, June, 2002.
- H. Dong and J.E. Kostka. Microbial transformation and dissolution of smectite clay minerals. Annual Meeting of the Clay Minerals Society, Boulder, CO, June, 2002.
- J. E. Kostka, S. L. Dollhopf, A. C. Smith, H. Adams, J. Hyun. Influence of macrobenthos on biogeochemical processes from the micro- to the macroscale: coupling of the iron and nitrogen cycles in saltmarsh sediments. American Society for Limnology and Oceanography Winter Meeting, Salt Lake City, UT, 9-14 February, 2003.
- J. E. Kostka, D. L. Balkwill, J. W. Stucki. Impacts of Mineralogy and Competing Microbial Respiration Pathways on the Fate of Uranium in Contaminated Groundwater. DOE-NABIR Principal Investigator Meeting, 17-19 March, 2003.
- N. North, L. Petrie, S. Dollhopf, D.L. Balkwill, and J.E. Kostka. Community Composition of Iron(III)-Reducing Bacteria from Subsurface Sediments of the Field Research Center. DOE-NABIR Principal Investigator Meeting, 17-19 March, 2003.
- J.H. Hyun, J. E. Kostka, A. C. Smith, H. J. Adams, Jr., M. Dollhopf, S. Dollhopf, and E. Petrie. Anaerobic Microbial Respiration in Saltmarshes: Relative Significance of Sulfate and Iron(III) Reduction over a Marsh-wide Scale. Annual Meeting of the American Society of Microbiology, Washington, DC, 18-22 May, 2003.
- S. L. Dollhopf, H. J. Adams, J.H. Hyun, M. E. Dollhopf, and J. E. Kostka. New Links Between Coupled Nitrification-Denitrification and Fe(III) Reduction in Salt Marsh Sediments. Annual Meeting of the American Society of Microbiology, Washington, DC, 18-22 May, 2003.
- J. E. Kostka, N. North, E.M. Petrie, S.L. Dollhopf, D. L. Balkwill, J. W. Stucki. Characterization of Iron(III)-Reducing Microbial Communities from Acidic Subsurface Sediments Contaminated with Uranium at the U.S. DOE-NABIR Field Research Center (FRC). Annual Meeting of the American Society of Microbiology, Washington, DC, 18-22 May, 2003.
- A.C. Smith, J.E. Kostka, J.H. Hyun, Y. Furukawa, and E. Petrie. The effects of bioturbation on the activity and abundance of sulfate-reducing bacteria over temporal/ spatial scales

- in an east coast saltmarsh. Annual Meeting of the American Society of Microbiology, Washington, DC, 18-22 May, 2003.
- O. Li, W.F. Bleam, J.E. Kostka, J.W. Stucki, and K. Lee. Polarized EXAFS studies of nontronite reduced by anaerobic bacteria. 226th American Chemical Society National Meeting, New York, NY, September, 2003.
- R. Sauer, J.E. Kostka, M. Frischer, and F.M. Saunders. Saltmarsh mesocosms and sedimentary mercury transformations. Society for Environmental Toxicology and Chemistry Annual Meeting, Austin, TX, November, 2003.
- S.L. Dollhopf, A.C. Smith, E. Hunter, and J.E. Kostka. Quantification of sulfate- and iron(III)-reducing bacteria with reverse-transcription real-time PCR in bioturbated and nonbioturbated saltmarsh sediments. American Society for Limnology and Oceanography 2004 Winter Meeting, Honolulu, HI, February
- J. E. Kostka, N. North, S. Dollhopf, L. Petrie, D. L. Balkwill. In Situ Change in Metal-reducing Bacteria and Other Members of the Sedimentary Microbial Community During Biostimulation of the Acidic Subsurface. Annual Meeting of the American Society of Microbiology, New Orleans, LA, May, 2004.
- S. L. Dollhopf, D. Westbrook, E. Hunter, E. Kristensen, D. Alongi, and J. E. Kostka. Effects of Macrobenthos on Nitrifying Bacterial Abundance, Activity, and Diversity in Australian Mangrove Sediments. Annual Meeting of the American Society of Microbiology, New Orleans, LA, May, 2004.
- R. M. Seston, S. L. Dollhopf, J. Hyun, and J. E. Kostka. The Effect of Iron and Sulfide on Nitrification Activity in Coastal Marine Sediments. Annual Meeting of the American Society of Microbiology, New Orleans, LA, May, 2004.
- J.E. Kostka. Macrobenthos mediate the coupling of the Fe-C-S-N cycles in coastal wetlands. American Society for Limnology and Oceanography 2004 Summer Meeting, Savannah, GA, June, 2004.
- K. Lee, J. W. Stucki, J. E. Kostka, and B. A. Goodman. Effects of *in situ* Microbial Stimulation on Fe Phases in a Sub-surface Saprolitic Soil: A Variable-temperature Mössbauer Spectroscopy Study. Annual Meeting of the Clay Minerals Society, Richland, WA, June, 2004.
- K. Lee, J. W. Stucki, and J. E. Kostka. Effects of bacterial reduction of structural iron on the infrared spectra of iron-bearing smectites. Annual Meeting of the Clay Minerals Society, Richland, WA, June, 2004.
- F.B. Ribeiro, J.W. Stucki, J.E. Kostka. Degradation of oxamyl by redox-modified smectites: dissimilarities between chemical and bacterial reduction. Annual Meeting of the Clay Minerals Society, Richland, WA, June, 2004.
- D. Westbrook, S. Dollhopf, J. Kostka, D. Swofford. The evolution and diversity of nitrifying microbes in marine habitats based on the gene segment *amoA*. Evolution 2004, Fort Collins, CO, June, 2004.
- D. M. Akob, H. J. Mills, L. Edwards, J. E. Kostka. The "Active" Microbial Communities found in Acidic Uranium-Contaminated Subsurface Sediments. Annual Meeting of the American Society for Microbiology, Atlanta, GA, June, 2005.
- T. M. Gihring, L. Edwards, M. E. Dollhopf, D. M. Akob, and J.E. Kostka. The Isolation and Characterization Of Novel, Metal-reducing Microorganisms From Uranium- and Nitrate-contaminated Subsurface Sediments. Annual Meeting of the American Society for Microbiology, Atlanta, GA, June, 2005.
- H. J. Mills, E. Hunter, D. Westbrook, D. Swofford, and J. E. Kostka. Community composition of microorganisms catalyzing N removal from a variety of coastal marine ecosystems. Annual Meeting of the American Society for Microbiology, Atlanta, GA, June, 2005.
- A. V. Palumbo, C. W. Schadt, C. C. Brandt, J. E. Kostka, S. M. Pfiffner. 2005. An integrated assessment of geochemical and community structure determinants of metal reduction rates in subsurface sediments. DOE-NABIR Principal Investigator Meeting, Warrenton, VA, 18-20 April.
- J. E. Kostka, H. Mills, L. Petrie, D. Akob, T. Gihring, D. L. Balkwill, J. W. Stucki, L. Kerkhof. Biostimulation of Iron Reduction and Uranium Immobilization: Microbial and

- Mineralogical Controls. DOE-NABIR Principal Investigator Meeting, Warrenton, VA, 18-20 April, 2005.
- D. M. Akob, H. J. Mills, L. Edwards, D. L. Balkwill, J. E. Kostka. Metabolically-Active Microbial Communities in Acidic Uranium-Contaminated Subsurface Sediments. DOE-NABIR Principal Investigator Meeting, Warrenton, VA, 18-20 April, 2005.
- H. J. Mills, E. Hunter, L. Kerkhof, and J. E. Kostka. 2006. Community composition of microorganisms catalyzing nitrogen removal and organic matter metabolism in permeable marine sediments. AGU/ ASLO Ocean Sciences, Honolulu, HI, February.
- A.V. Palumbo, C.C. Brandt, S.M. Pfiffner, L.A. Fagan, A.S. Madden, T.J. Phelps, J.C. Schryver, M.S. McNeilly, C.W. Schadt, J.R. Tarver, and J.E. Kostka. 2006. "Reduction processes and community structure in remediation of uranium," 231st American Chemical Society National Meeting, Division of Geochemistry, Atlanta, GA, March.
- D. M. Akob, H. J. Mills, T. M. Gihring, and J. E. Kostka. 2006. Structure and Function of Metal- and Nitrate-reducing Microbial Communities in the FRC Subsurface. DOE-ERSP Principal Investigator Meeting, Warrenton, VA, 2-5 April.
- J. E. Kostka, H. Mills, Denise Akob, T. Gihring, J. W. Stucki, B. A. Goodman, L. Kerkhof. 2006. Biostimulation of Iron Reduction and Uranium Immobilization: Microbial and Mineralogical Controls. DOE-ERSP Principal Investigator Meeting, Warrenton, VA, 2-5 April.
- A. V. Palumbo, C. W. Schadt, C. C. Brandt, J. E. Kostka, S. M. Pfiffner. 2006. An integrated assessment of geochemical and community structure determinants of metal reduction rates in subsurface sediments. DOE-ERSP Principal Investigator Meeting, Warrenton, VA, 2-5 April.
- H. J. Mills, E. Hunter, S. Winch, L. Kerkhof, J. E. Kostka. 2006. High-throughput analysis of microbial community structure and function across environmental gradients within permeable marine sediments. Annual Meeting of the American Society for Microbiology, Orlando, FL, May.
- L. J. Kerkhof, D. Watson, J.E. Kostka, and L. McGuinness. 2006. Active Microorganisms in Groundwater Along a Contamination Plume at the Field Research Center in Oak Ridge, TN, USA. Annual Meeting of the American Society for Microbiology, Orlando, FL, May.
- D. M. Akob, H. J. Mills, T. M. Gihring, L. Kerkhof, and J. E. Kostka. 2006. Structure and Function of Metal- and Nitrate-reducing Microbial Communities in Subsurface Sediments Contaminated with Radionuclides. Annual Meeting of the American Society for Microbiology, Orlando, FL, May.
- A. V. Palumbo, C. W. Schadt, C. C. Brandt, J. E. Kostka, S. M. Pfiffner, L. A. Fagan, J. R. Tarver, M. S. McNeilly. 2006. Influence of the Addition of Humic Acid on Reduction Rates of Nitrate, Sulfate, and Uranium in Sediment Slurries from a Uranium Contaminated Site. Annual Meeting of the American Society for Microbiology, Orlando, FL, May.
- W.T. Cooper, L.B. Tremblay, T. Dittmar, M. Huettel, J.E. Kostka, and W.J. Cooper. 2006. Molecular characterization of terrestrially-derived DOM in estuaries using ultrahigh resolution mass spectrometry and 3-D fluorescence spectroscopy. American Society for Limnology and Oceanography Summer Meeting, Victoria, BC, Canada, June.

2 Meeting Abstracts at Regional Meetings (1995-2006):

- J.E. Kostka, , A. Roychoudhury, and P. Van Cappellen. Changing patterns of sulfate reduction in salt marsh sediments across a gradient of *Spartina alterniflora* growth forms, Conference on Southeast Coastal Ocean Research (SECOR), Savannah, GA, May, 1998.
- J.E. Kostka. Nutrient cycling in the benthos. Satilla River Research and Management Workshop, Woodbine, GA, December, 1998.

DOCTORAL ADVISOR: George W. Luther III, College of Marine Studies, University of Delaware

POSTDOCTORAL ADVISORS:

Kenneth H. Nealson, Center for Great Lakes Studies, University of Wisconsin-Milwaukee
Bo Barker Jorgensen and Don Canfield, Max Planck Institute for Marine Microbiology,
Bremen, Germany

OCEANOGRAPHIC CRUISES

Structure and function of microbial communities in cold sediments of the Arctic, Max Planck Society, Tromso to Svalbard, Norway, 18 days, R/V Jan Mayen, 1995

Reise Nr. 34, Deutsche Forschungsgemeinschaft (DFG), Walvis Bay, Namibia, 27 days,
Forschungsschiff Meteor, 1996

Rates and controls of sediment processes regulating nutrient regeneration/burial in the
Satilla River estuary, Sea Grant College Program, Savannah to Jekyll Island, GA, 4 days,
R/V Bluefin (chief scientist), 1998

Rates and controls of sediment processes regulating nutrient regeneration/burial in the
Satilla River estuary, Sea Grant College Program, Savannah to Jekyll Island, GA, 6 days,
R/V Bluefin (chief scientist), 1999

OUTSIDE COLLABORATORS (not listed in publications): Richard Devereux (U.S. EPA,
Gulf Breeze, FL), Hailiang Dong (Miami University), John Zachara (Pacific Northwest
National Lab), David Balkwill, Jeff Chanton (FSU), Yoko Furukawa (Naval Research Lab-
Stennis, MS), JungHo Hyun (KORDI, Korea), Will Bleam, Gelsomina De Stasio (Univ. of
Wisconsin), Clark Alexander, Stuart Wakeham (Skidaway Inst. of Oceanography), Kirsten
Kuesel (Univ. of Jena, Germany), Harold Drake (Univ. of Bayreuth, Germany), Dan Alongi
(Australian Inst. of Marine Science), Dave Swofford (FSU), Markus Huettel (FSU), Lee
Kerkhof (Rutgers Univ.)

PROFESSIONAL SERVICE

Editorial Board Member (2002-2008) for *Applied and Environmental Microbiology, Marine
Biology Research*

Editor (2003-2005), *Macro-microorganism Interactions in Marine Sediments*, published by
the American Geophysical Union in Spring, '05

Review Panel Member

Department of Energy, Sequencing Targets for the Microbial Genome Program (2002)
Department of Energy, Natural and Accelerated Bioremediation Research Program
(1998, 2001, 2002)

Deutsche Forschungs Gemeinschaft (German National Science Foundation), Electron
Transfer Processes in Anoxic Aquifers (2005)

Ad Hoc Proposal Reviewer, National Science Foundation (1996-present): Biological
Oceanography, Chemical Oceanography, LEXEN, Polar Programs, Geology and
Paleontology, Metabolic Biochemistry, Petrology and Geochemistry, Microbial
Observatories, Biocomplexity, Ecosystems

External Promotion and Tenure Package Reviewer (2004): School of Biology, Georgia
Institute of Technology; (2005): Department of Biology, University of Massachusetts-
Lowell

External examiner (2001) for the Ph.D. dissertation of Uffe Thomsen, Danish Center for
Earth System Science, University of Southern Denmark, Odense, Denmark

Manuscript Reviewer (1996-present) for: *Applied and Environmental Microbiology*,
Limnology and Oceanography, *Environmental Science and Technology*, *Geochimica et
Cosmochimica Acta*, *Aquatic Geochemistry*, *Chemical Geology*, *J. of Geophysical
Research*, *J. of Microbiol. Methods*, *Applied Clay Science*, *Microbial Ecology*

Chair, Working Group on Microbial Community Analysis (2003-present), Department of
Energy, Natural and Accelerated Bioremediation Research Program

Guest Professor (2003), University of Bayreuth, Department of Ecological Microbiology,
Bayreuth, Germany

Visiting Scientist (2003), Australian Institute of Marine Science, Townsville, Queensland, Australia

Fellow/ Visiting Scientist (2006-7), Hanse Advanced Studies Institute, Delmenhorst, Max Planck Inst. for Marine Microbiology, Bremen, Germany.

Service to Florida State University:

Member, FSU Marine Laboratory Task Force/ Advisory Committee, 2002-present

Member, Selection Committee for the James and Sheila O'Brien Award

Member, Dissertation Research Grant Selection Committee, 2005-2006

Service to Department of Oceanography:

Library Committee (2000-2004), Member

Search Committee for Biological Oceanographer (2002, 2003, 2006), Member

Search Committee for Chemical Oceanographer (2003), Member

Curriculum and Academic Policy Committee (2003-present), Member

Outstanding Graduate Student Award Committee (2004), Member

Computer Services Committee (2004-present), Member

Search Committee for Director of FSU Marine Lab (2005), Member

CERTIFICATIONS:

Completed 40 hour course in handling of hazardous materials for certification by the Occupational Safety and Health Administration as a HAZMAT technician.