

February, 2011

Christopher L. Hemme

Institute for Environmental Genomics
Department of Botany and Microbiology
Stephenson Research and Technology Center
101 David L. Boren Blvd
University of Oklahoma
Norman, OK 73019
TEL(work): (405) 325-3052
Email: hemmecl@ou.edu

Areas of Expertise

- Microbial Genomics
 - Environmental and Evolutionary Genomics
 - Metagenomics
 - Groundwater Microbial Ecology and Evolution
 - Perl Programming for Bioinformatics
-

Education

1992-1997	University of Missouri-Rolla (Undergraduate) B.S. Chemistry B.S. Life Sciences
1997-2004	University of Missouri-Columbia (Graduate) Ph.D. Student, Biochemistry Advisor: Dr. Judy Wall
Summer, 1998	Microbial Physiology Workshop, Ohio State University, Columbus, OH
Summer, 2000	Nucleic Acid and Protein Sequence Analysis Workshop, Pittsburgh Supercomputing Center, Pittsburgh, PA
2001-2002	Graduate Student Mentor, Biochemistry Department, University of Missouri, Columbia, MO
Feb, 2003	EC-US Short Course on Environmental Biotechnology, Madrid, Spain
Oct 2004-Dec 2005	Postdoctoral Researcher, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN
Dec 2005-Present	Postdoctoral Researcher, Institute for Environmental Genomics, University of Oklahoma, Norman, OK

Research Experience

- Dr. Jizhong Zhou (ORNL, OU), Oct 2004-Present (Postdoctoral Research)
Comparative Metagenomics Analysis of Pristine Groundwater Microbial Communities and Groundwater Microbial Communities Exposed to Heavy Metal Contamination
Comparative Genomics Analysis of Ethanol-Producing *Clostridia*
Whole-Genome Expression Analysis of Global Regulatory Mutants of *Desulfovibrio vulgaris*
- Dr. Judy Wall (UMC), Jan 1998-Oct 2004 (Graduate Research)
Experimental Analysis of the Role of Sulfate-Reducing Bacteria in Heavy Metal Bioremediation and Metal Corrosion
Annotation and Comparative Genomics Analysis of Sulfate-Reducing *Desulfovibrio* Species
Computational and Experimental Analysis of Carbon Metabolism of *Desulfovibrio* Species

Publications

- Hemme C.L. et al.**, 2010. Metagenomic Insights into Evolution of a Heavy Metal-Contaminated Groundwater Microbial Community. *ISME Journal*, **4**:660-672
- Zhou, A., Z. He, A.M. Redding-Johanson, A. Mukhopadhyay, **C. L. Hemme**, M.P. Joachimiak, F. Luo, Y. Deng, K.S. Bender, H. Qiang, J.D. Keasling, D.A. Stahl, M.W. Fields, T.C. Hazen, A.P. Arkin, J.D. Wall, and J. Zhou, 2010. Hydrogen peroxide-induced oxidative stress responses in *Desulfovibrio vulgaris* Hildenborough. *Environmental Microbiology*. **12**(10):2645-2657
- He, Q., Z. He, D.C. Joyner, M.P. Joachimiak, M.N. Price, Z.K. Yang, H.-C. Yen, **C.L. Hemme**, R. Chakraborty, W. Chen, M. Keller, A.P. Arkin, T.C. Hazen, J.D. Wall, and J. Zhou, 2010. Impact of Elevated Nitrate on Sulfate-Reducing Bacteria: Implications of Inhibitory Mechanisms in Addition to Osmotic Stress. *ISME Journal*, **4**:1386-97
- Hemme, C.L. et al.**, 2010. Sequencing of Multiple *Clostridia* Genomes Related to Biomass Conversion and Biofuels Production. *J. Bacteriol.* published ahead of print on 1 October 2010, doi:10.1128/JB.01064-10
- Zhou, J., He, Q., **C.L. Hemme**, Hillesland, K., Mukhopadhyay, A., Zhou, A., Deutschbauer, A., He, Z., Fields, M.W., Bender, K.S., van Nostrand, J.D., Charkaborty, R., Rajeev, L., Hazen, T.C., Stahl, D.A., Wall, J.D., Arkin, A.P. 2010. Systems-Level Understanding of Stress Responses in Sulfate-Reducing Bacteria. In Press.

Collaborators and Other Affiliations

- i) **Collaborations:**
Virtual Institute for Microbial Stress and Survival (VIMSS): Wall, J.D. (University of Missouri); Fields, M.W. (Miami University); Arkin, A. (Lawrence Berkeley National Laboratory); Hazen, T. (Lawrence Berkeley National Laboratory); *Clostridia* Sequencing Consortium (CSC): Lawson, P. (University of Oklahoma); Stevenson, B. (University of Oklahoma); Tanner, R. (University of Oklahoma); He, Q. (University of Tennessee); Wiegel, J. (University of Georgia); Xie, G. (Los Alamos National Laboratory); Chain, P. (Los Alamos National Laboratory); N. van der Lelie (Brookhaven National Laboratory), B. Henrissat, B. (Architecture et Fonction des Macromolécules Biologiques); Bayer, E. (The Weizmann Institute of Science)
- ii) **Advisors:** Wall, J.D. (University of Missouri, Graduate); Zhou, J. (Oak Ridge National Laboratory/University of Oklahoma, Postdoctoral)