Hannah L. Woo
Graduate Student
Department of Civil and Environmental Engineering
University of Tennessee
hannahwoo2@gmail.com

Expertise and Interest

bioenergy, recalcitrant organics degradation, environmental microbiology, data mining and statistics

Education

05/2012-present **University of Tennessee**
Ph.D. in Civil and Environmental Engineering
Minor: Interdisciplinary Graduate minor in Computational Science
Graduate Advisor: Dr. Terry C. Hazen

08/2005-05/2009 **University of California, Berkeley**
B.S. in Molecular Environmental Biology with Honors

Funding

08/2014-08/2017 **NSF Graduate Research Fellow**
University of Tennessee
Proposal title: Investigating terrestrial organic carbon degradation in marine sediments for halotolerant lignocellulolytic enzyme discovery

08/2013-04/2013 **Innovative Research and Education Grant**
PI: Hannah Woo, Benjamin Goodrich, Denise Koessler, Caroline Rempe
University of Tennessee
Proposal title: Feature Detection of Spectral Data
Amount: $20,000

06/2012- present **NSF Integrative Graduate Education and Research Traineeship (iGERT)**
Scale-IT: Scalable Computing and Leading Edge Innovative Technologies
University of Tennessee
PI: Dr. Cynthia Peterson Director: Dr. Harry Richards

Employment History

08/2009-05/2012 **Research Assistant**
Joint Bioenergy Institute, Deconstruction Division, Microbial Communities Group

08/2011-11/2011 **Microbial sampler**
Ecology, Lawrence Berkeley National Laboratory

06/2009-08/2009 **Berkeley Lab Undegraduate Research Intern**
Ecology, Lawrence Berkeley National Laboratory

06/2008-08/2008 **Research and Development Chemistry Intern**
Clinical Diagnostics, Bio-Rad Laboratories

01/2008-05-2008 **Undergraduate Research Assistant**

Awards

2014	Society for Applied Microbiology President's Fund
2014	Student travel grant to International Symposium on Subsurface Microbiology
2014	Graduate Student Senate Travel Award to ASM General Meeting
2014	Sigma Xi Scientific Paper Presentation Award Winner
2009	DOE Science and Energy Research Challenge Poster Competition- Finalist
2007	Golden Key Honor Society
2009	Bio-rad Scholarship recipient
2005	Bank of America Scholarship Plaque Winner- Science
2005	American Women in Science Scholarship- Berkeley Chapter
2002	Governor's Scholarship

Teaching

01/2014-05/2014 **Instructor of Record**
University of Tennessee
Environmental Engineering 1 Laboratory

01/2008-05/2008 **Undergraduate Student Instructor**
University of California Berkeley
Biology 1A Laboratory

01/2009-05/2009 **Course Facilitator**
University of California Berkeley
DeCal Program– student-run courses

Scientific and Educational Outreach

06/2013, 6/2014 **Microbiology Summer Camp Teacher**
University of Tennessee
Kids U Summer Program

Student mentorship

05/2013-present Kaela O'dell (University of Tennessee Microbiology undergraduate)
Project Title: Targeting the lignin-degrading gene, pcaH, in two marine isolates

01/2012-05/2012 Albany High School internship mentor
Joint Bioenergy Institute, Lawrence Berkeley National Laboratory

Professional Society Memberships

International Society of Microbial Ecology (ISME)
American Society of Microbiology (ASM)
Society for Applied Microbiology (SFAM)

Peer-Reviewed Journal Publications

Kelemen, R.K., He, G.F., **Woo, H.L.**, Lane, T., Rempe, C., Wang, J., Cockburn, I.A., Amino, R., Ganusov, V.V. and Berry, M.W. (2014) 'Classification of T cell movement for prediction of cell function', Int. J. Computational Biology and Drug Design, In press.

Woo, HL, Hazen, TC, Simmons, BA, DeAngelis, KM (2013) Enzyme Activities of Aerobic Lignocellulolytic Bacteria Isolated from Wet Tropical Forest Soils. *Systematic and Applied Microbiology.* **37**, 60 (2//, 2014)

Khudyakov, J. I., P. D'Haeseleer, S. E. Borglin, K. M. DeAngelis, **H. Woo**, E. A. Lindquist, T. C. Hazen, B. A. Simmons and M. P. Thelen. 2012. Global transcriptome response to ionic liquid by a tropical rain forest soil bacterium, Enterobacter lignolyticus. Proceedings of the National Academy of Sciences of the United States of America **109**:E2173-E2182.

K. M. DeAngelis, P. D'Haeseleer, D. Chivian, J. L. Fortney, J. Khudyakov, B. Simmons, **H. Woo**, A. P. Arkin, K. Davenport, L. Goodwin, A. Chen, N. Ivanova, N. C. Kyrpides, K. Mavromatis, T. Woyke and T. C. Hazen Complete genome sequence of "*Enterobacter lignolyticus*" SCF1. Standards in Genomic Sciences**,** North America, 5, sep. 2011.

Submitted for Peer-review

Woo, H.L., Hazen, T.C., Fortney, J.L., Simmons, B.A., Davenport, K.W., Goodwin, L., Ivanova, N., Kyrpides, N.C., Mavromatis, K., Woyke, T., DeAngelis, K.M. Complete genome sequence of *Klebsiella* sp. BRL6-2. Standards in Genomic Sciences North America.

Hu, P., C. H. Wu, T. Z. DeSantis**,** K. M. DeAngelis, P. Jasrotia, **H. Woo**, K. Kearcher, S. Meiss, T. Torok, D. L. Taylor, W. Overholt, S. Green, G. L. Andersen, J. E. Kostka, and T. C. Hazen. Validation of MycoChip 1 – A Microarray for Fungal Commnity Studies. Applied and Environmental Microbiology.

Oral Presentations

Woo, H.L. Lignin degradation by deep-ocean microbes. International Symposium on Subsurface Microbiology, Pacific Grove, CA, October 7, 2014.

Woo, H.L. Lignin degradation by deep-ocean microbes. Oak Ridge National Laboratory Microbial Group, Knoxville, TN, June 12, 2014.

Woo, H.L. Lignin degradation by deep-ocean microbes. Sigma Xi Paper Presentation Challenge, Knoxville, TN, April 14, 2014.

Poster Presentations

H. L. Woo, S. M. Techtmann, J. L. Fortney, D. C. Joyner, T. C. Hazen. Investigating Lignin Degradation Potential in the Hypersaline Eastern Mediterranean Deep-sea Basin. Seoul, South Korea. International Symposium for Microbial Ecology

H. L. Woo, S. M. Techtmann, J. L. Fortney, D. C. Joyner, T. C. Hazen. Investigating Lignin Degradation Potential in the Hypersaline Eastern Mediterranean Deep-sea Basin. Boston, MA. American Society for Microbiology General Meeting

Janet K. Jansson, Jeffrey Kimbrel, Nicholas Ballor, **Hannah Woo**, Thomas Ruegg, Terry C. Hazen, Michael P. Thelen, Blake A. Simmons, Steven W. Singer. Contributed. Halophilic Communities as a Source for Novel Lignocellulolytic Enzymes. Washington, DC. DOE genomics meeting.

Hannah Woo, Ben Goodrich, Denise Koessler, Caroline Rempe, Michael Adams. Presented. Feature Detection of Peak Data: Applications of Deep Machine Learning and Data Mining in Computational Life

Sciences. November 18, 2013. Gaitlinburg, TN. China-U.S. Joint Research Center for Ecosystem and Environmental Change Annual Workshop.

Ben Goodrich, Denise Koessler, Caroline Rempe, **Hannah Woo**, Michael Adams. Contributed. Feature Detection of Peak Data: Applications of Deep Machine Learning and Data Mining in Computational Life Sciences. November 15, 2013. Guntersville, AL. Southeast Women in Computing.

Reka Kelemen, Gengen He, **Hannah Woo**, Thomas Lane, Caroline Rempe, Jun Wang, Ian Cockburn, Rogerio Amino, Vitaly Ganusov and Michael Berry. Contributed. Classification of T cell movement tracks allows for prediction of cell function. August 13, 2013, Nashville, TN. International Conference on Intelligent Biology and Medicine

N.R.Ballor, **H. Woo**, T. Ruegg, T.C Hazen, B. Simmons, S. Singer, J. Jansson. Mining Halophilic and Halotolerant Microbial Communities for the Genetic Correlates of Ionic Liquid Tolerant Lignocellulolytic Activities. March 20-22, 2012. Walnut Creek, CA. DOE Joint Genome Institute User Meeting.

Geller, J. T., **H. Woo**, D. C. Joyner, S. Kendall, and T. C. Hazen. Microfluidic Studies of Nitrate Stress on Shewanella oneidensis Biofilms. May 22, 2011, New Orleans, LA. ASM annual Meeting.

Hu, Ping, C. Wu, T.DeSantis, P. Jasrotia, **H. Woo**, K. Kearcher, S. Meiss, T. Torok, L.D. Taylor, G.L. Andersen, J. Kostka, and T.C. Hazen. Validation of MycoChip – A Microarray for Fungal Community Studies. May 22, 2011, New Orleans, LA. ASM annual Meeting.

Khudyakov, J. I., K. M. DeAngelis, **H. Woo**, S. Borglin, T. C. Hazen, and M. Thelen. Ionic liquid tolerance in Enterobacter cloacae, a lignocellulolytic bacterium isolated from tropical rain forest soil. August 2-5, 2010, San Francisco, CA. Annual Meeting of the Society for Industrial Microbiology.

Woo, H. L., K. M. DeAngelis, T. C. Hazen, and B. A. Simmons. Isolation of lignin- and cellulose-degrading bacteria from tropical soils for biofuel feedstock deconstruction. August 2-5, 2010, San Francisco, CA. Annual Meeting of the Society for Industrial Microbiology.

Woo, H. L., K. M. DeAngelis, T. C. Hazen, and B. A. Simmons. Isolation of Aerobic Lignin- and Cellulose- degrading Bacteria from Tropical Soils from Biofuel Feedstock Deconstruction. May 23-27, 2010, San Diego, CA. Annual meeting of the American Society for Microbiology Meeting.

Woo, H.L., K.M. DeAngelis, T.C. Hazen, and B.A. Simmons. Cultivation and Characterization of Aerobic Lignocellulolytic Bacteria from Tropical Forest Soils. , November 11, 2009. Oakridge, TN. DOE Science and Energy Research Challenge

Woo, H.L., K.M. DeAngelis, and T.C. Hazen Cultivation and Characterization of Lignocellulolytic Microbes from Tropical Forest Soils. Department of Energy Journal of Undergraduate Research. Submitted August 2009.

Khudyakov, J. I., K. M. DeAngelis, **H. Woo**, S. Borglin, T. C. Hazen, and M. Thelen. Invited. Ionic liquid tolerance in Enterobacter cloacae, a lignocellulolytic bacterium isolated from tropical rain forest soil. August 2-5, 2010, San Francisco, CA. Annual Meeting of the Society for Industrial Microbiology.

Publicly Available Genomes and Gene Sequences

Halomonas sp. KO116	JNVS00000000
Burkholderia sp. Lig30	JGVW00000000