

## **CHRISTOPHER WARREN SCHADT**

<http://schadtlab.wordpress.com/>

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### **PRIMARY RESEARCH INTERESTS**

- Plant-Microbe-Soil interactions especially as related to plant productivity, ecosystem carbon and nutrient cycling, and anthropogenic changes
- Soil and subsurface microbiology especially as it relates to biogeochemical cycling and bioremediation
- Understanding evolutionary origins and ecological roles of organisms within under-characterized fungal and bacterial lineages
- Development and application of genomics-enabled methods for inferring and tracking the functions and activities of microorganisms in the environment under changing conditions

### **EDUCATION**

University of Colorado, Biology, Ph.D. May 2002  
University of Washington, Botany, B.S. March 1996

### **PROFESSIONAL POSITIONS**

Senior Staff Scientist, Biosciences Division, Oak Ridge Natl. Laboratory, 2012-Pres.  
Joint Faculty Associate Professor, Dept. of Microbiology, Univ. of Tenn, 2010-Pres.  
Joint Faculty Associate Professor, Bredesen Center for Interdisciplinary Graduate Education, ORNL-Univ. of Tenn, 2015-Pres.  
Staff Scientist, Biosciences Division, Oak Ridge National Laboratory, 2007-2012.  
Adjunct Professor, Univ. of Tennessee, Genome Science and Technology, 2007-Pres.  
Adjunct Professor, Univ. of Tennessee, Dept. of Microbiology, 2007-2010  
Group Leader for Molecular Microbial Ecology, ORNL, 2007-2012  
Associate Staff Scientist, Environmental Sciences Division, ORNL, 2005-2006  
Postdoctoral Research Associate, Environmental Sciences Division, ORNL, 2003-2005  
Postdoctoral Research Associate, University of Colorado, 2002-2003

### **GRANTS AND AWARDS**

PI, ORNL-LDRD Program – 2016-2018 (390K annual) " Understanding the microbially-driven mechanisms behind the rapid responses of soils to short-term disturbance events that result in large nitrous oxide emission pulses"  
PI, ORNL-LDRD Program – 2015 (35K total funding) "Targeted Metagenomic Analysis of the Novel Bacterial Phylum AD3 from Walker Branch Watershed Shallow Subsurface Soils"  
Co-PI, DOE-TES Program 2014-2017 (350K annual) "Toward A Predictive Understanding of the Response of Belowground Microbial Carbon Turnover to

- Climate Change Drivers in a Boreal Peatland”  
Co-PI, DOE-TES Program 2011-2013 (350K annual) “The response of soil carbon storage and microbially mediated carbon turnover to simulated climatic disturbance in a northern peatland forest: revisiting the concept of soil organic matter recalcitrance”  
Co-PI and Microbiology Lead, DOE Genomic Sciences Program 2009-Present (6.5M annual) “ORNL Scientific Focus Area in Plant-Microbe Interfaces”  
Co-PI, DOE Terrestrial Ecosystem Sciences Program 2009-Present (8.25M annual) “ORNL Scientific Focus Area in Terrestrial Ecosystems Sciences”  
Co-PI, DOD/SERDP Program - 2010-2012 (550K annual) “Mechanisms and Permanence of Sequestered Pb and As in soils: Impact on Human Bioavailability”  
PI, ORNL-LDRD Program – 2007-2009 (350K annual funding) “Carbon Drivers of the Microbe Switchgrass Rhizosphere Interface”  
Co-PI, DOE-ERSP program – 2007-Pres. (1.3M annual funding) “Multiscale Investigations on the Rates and Mechanisms of Targeted Immobilization and Natural Attenuation of Metal, Radionuclide and Co-Contaminants in the Subsurface”  
Co-PI, DOE-GtL Program – 2006-2010. (3.5M annual funding) “Virtual Institute for Microbial Stress and Survival – Environmental Stress Pathways Project”  
Co-PI, ORNL-LDRD Program – 2005-2007 (350 K annual funding) “Disentangling Soil Respiration Using Genomic Techniques”  
Co-PI, DOE-PER Program – 2005-2008. (1.2M annual funding) “Hierarchical Experimental Responses at Macromolecular to Ecosystem Scales”  
Co-PI, DOE-NABIR Program – 2004-2007 (450K annual funding) “An Integrated Assessment of Geochemical and Community Structure Determinants of Metal Reduction Rates in Subsurface Sediments”  
Co-PI, DOE-TCP Program – 2004-2012. (1.8M annual funding) “Consortium for enhancing Carbon Sequestration in Terrestrial Ecosystems”  
University of Colorado Graduate Student Travel Grants (0.5K) - 1998 & 2000  
Beverly Sears Graduate Student Research Grant (2K)- 1997 & 1999  
Edna Bailey Sussman Graduate Student Research Grant (1K) - 1998

## **TEACHING EXPERIENCE**

University of Tennessee, 2008-Present

### *Courses:*

- GST 520 - Advanced Genetics/Genomics (units on Microbial Diversity; Microbial Comparative Genomics; and Metagenomics – team taught; I conduct 2-3 lectures per semester each fall)  
GST 541 - Graduate Student Colloquium (Organize graduate student research presentations, lead paper discussions, etc.), Spring Semester 2013  
MICRO 620/EEB 630 – Special Topics Course: Fungal Ecology and Systems. Co-taught with Brandon Matheny (EEB), Spring Semester 2015  
Graduate Teaching Assistant, University of Colorado, 1996-1998  
Introductory Biology Laboratory (2 semesters)  
Genetics Recitation (1 Semester)  
General Microbiology Laboratory (2 semesters)

## **SUPERVISION, MENTORING AND GRADUATE COMMITTEES**

Group Leader for Molecular Microbial Ecology Group at ORNL 2007-2012.

Organization included 3 Staff Scientists; 2 Technical Staff; 10 full time Post Doctoral or Grad Student Researchers, 1 Administrative Assistant, as well as multiple temporary rotations of visiting scientists, graduate students and undergraduate students

Dissertation Advisor for: Emily Austin (Ecology and Evolutionary Biology, Ph.D. 2013) & Migun Shakya (GST Program, Ph.D. 2013), Jessica Velez (Bredesen Center, In progress), University of Tennessee

Graduate committee member for: Enid Rodriguez (MSc, Univ. of Puerto Rico Mayaguez, 2006); Emily Hollister (PhD, Texas A&M Univ., 2008); Jennifer Reeve (Ph.D, Washington State Univ., 2008), Sean Berthrong (PhD, Duke Univ., 2009); Katherine Sides (MSc in Dept of Soil & Biol. Systems Sci., Univ. of Tenn., 2009); Alisha Campbell (Ph.D. in GST, Univ. of Tenn., 2012); Emily Austin (Ph.D in EEB, Univ. of Tenn., 2013); Migun Shayka (Ph.D. in GST, Univ. of Tenn., 2013); Mellissa Cregger (Ph.D in EEB, Univ. of Tenn., 2012); Puja Jastoria (Florida State Univ, Pending); Lillian Mubitha (MSc, Dept of Soil & Biol. Systems Sci., Univ. of Tenn., Pending); Patrick Chanton (MSc, Georgia Tech Univ. 2014); Puja Jastoria (Ph.D., Florida State University, 2016); Mellissa Warren (MSc, Georgia Tech Univ. 2015); Sagar Uturkar (Ph.D., Univ. of Tenn., 2016); Ian Ware (Ph.D. Candidate EEB, Univ. of Tenn., Pending); Jessica Velez (Ph.D. Student, Univ. of Tenn., Pending) Steven Higgins (Ph.D. Candidate, Univ. of Tenn, Pending)

Postdoctoral/Postmasters Advisor for: Hector Castro (Univ. of Tennessee), Melissa Cregger (ORNL), Marie-Anne De Graaff (Boise State Univ.), Sanghoon Kang (Rice University), Laurel Kluber (ORNL), Thomas Gihring (Univ. of Wisconsin, Madison) Yongchao Li (Univ. of Oklahoma), Mike Robeson (Colorado State Univ.), Jessica (Meg) Steinweg (Roanoke College), Tarah Sullivan (Washington State University), Allison M. Veach (ORNL), Amudhan Venkateswaran (Pioneer Hybrid Corp.), Daniel Z. Yip (ORNL), Tingfen Yan (Univ. of Maryland), Gengxin Zhang (Chinese Acad. of Sci.)

Hosted and Advised: 4 visiting faculty/scientists; 5 visiting postdoctoral students; 7 visiting graduate students; 2 high school science teachers; 28 undergraduate students; & 3 high school students for research internships of 3-12 months at ORNL through the Oak Ridge Institute for Science and Education (ORISE) and other programs.

## **PROFESSIONAL SERVICE**

Review Panel Member, ORAU Powe Fellowship – 2015-2016

Review Panel Member, DOE EPSCoR Program– 2016

Vice Chair, Soil Ecology Section, Ecological Society of America – 2015 to Present

Deputy Section Editor for BMC Microbiology – 2016 to Present

Associate Editor for BMC Microbiology – 2013 to 2016

Review Panel Member, PNNL Environmental Molecular Sciences Laboratory User Facility – 2014 to Present

Invited Session Chair and Organizer for 2013 Fungal Genetics meeting session on

“Ecological Metagenomics”

Participant for NSF RCN Network “Enzymes in the Environment” PI – Matt Wallenstein, Colorado State – 2009 to 2013

ORNL Internal Seed Money Proposal Review Committee - 2009 to 2010

Biological and Environmental Sciences Directorate Seminar Committee – 2007 to 2009 (Chair 2008-2009)

Convener and Organizer for 2009 ASM General Meeting Colloquium on “Model Microbial Systems – A tractable and manipulable bridge between organismal and environmental studies”

Steering Committee for NSF RCN Network “Fungal Environmental Science and Informatics Networks”, PI - Tom Bruns, UC Berkeley – 2007 to present

Steering Committee Member, LSP-JGI Fungal Genome Sequencing Program – 2006 to 2007

Review Panel Member, Ecosystems Program, EPSCoR Program, and Polar Programs, National Science Foundation – 2007, 2011, 2013, 2015, 2016

Review Panel Member, National Institute of Environmental and Health Sciences, 2014

Add Hoc Reviewer, various National Science Foundation programs – 2006 to Present

Add Hoc Reviewer for NASA postdoctoral fellowship program – 2009 & 2010

Regular reviewer for the journals: *Applied and Environmental Microbiology*; *BMC Microbiology*; *Environmental Microbiology*; *Environmental Science and Technology*; *ISME Journal*; *Microbial Ecology*; *Molecular Ecology*; *New Phytologist*; *PLOS One*; *Soil Biology and Biogeochemistry*;

Univ. of Colorado, Graduate Student Government Representative – 1998 & 1999

**PROFESSIONAL SOCIETIES**

American Society for Microbiology

Ecological Society of America

International Society for Molecular Plant Microbe Interactions

Soil Ecology Society

**COMMUNITY SERVICE**

Board Member & Regional Referee Administrator, American Youth Soccer Organization – 2016 to Present

Intermediate Referee, American Youth Soccer Organization – 2016 to Present

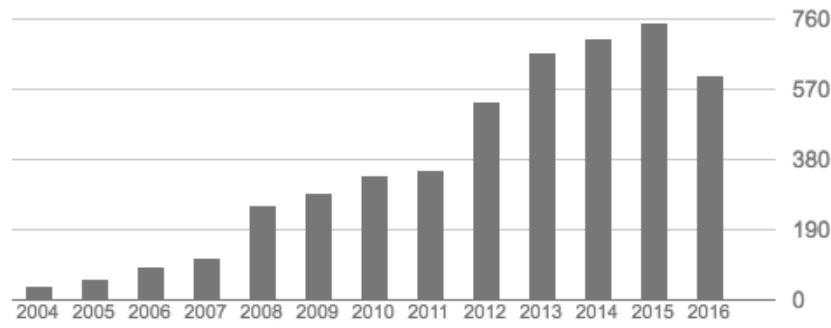
Regional Referee, American Youth Soccer Organization – 2015

Volunteer, Invasive Plant Survey Crews, Knox County Parks and Recreation – 2014 & 2015

Volunteer, Religious Education Tennessee Valley Unitarian Universalist Church – 2013 to Present

**PUBLICATION DATA** (as of Sept 29th, 2016)**Citations:** 4841**H-Index:** 37**I10-index:** 65**Source:** <http://scholar.google.com/citations?hl=en&user=59J6zRAAAAJ>

Citations per year

**PEER REVIEWED PUBLICATIONS****2016**

1. Bible AN, SJ Fletcher, DA Pelletier, **CW Schadt**, SS Jawdy, DJ Weston, LN Engle, T Tschaplinski, R Masyuko, S Poliseti, PW Bohn, TA Coutinho, MJ Doktycz and JL Morrell-Falvey. (2016). A Carotenoid-Deficient Mutant in *Pantoea* sp. YR343, a Bacteria Isolated from the Rhizosphere of *Populus deltoides*, is Defective in Root Colonization. *Frontiers in Microbiology* 7:491. doi: 10.3389/fmicb.2016.00491
2. Bonito, G., K Hameed, R Ventura, J Krishnan, **CW Schadt**, and R Vilgalys, 2016. Isolating a functionally relevant guild of fungi from the root microbiome of *Populus*. *Fungal Ecology*, 22, pp.35-42.
3. Bonito, G. K. Hameed, R Healy, M Toome, C Reid, HL Liao, **CW Schadt** and R Vilgalys. 2016. *Atractiella rhizophila*, a novel endorhizal fungus adapted to the root microbiome of *Populus* and diverse plant hosts. *Mycologia*, In Press.
4. Deng, Y, Z He, J Xiong, H Yu, M Xu, SE Hobbie, PB Reich, CW **Schadt**, A Kent, E Pendall, M Wallenstein, Z He, and J Zhou. 2016. Elevated carbon dioxide accelerates the spatial turnover of soil microbial communities. *Global Change Biology*, 22(2), pp.957-964.
5. Deng Y, P Zhang, Y Qin, Q Tu, Y Yang, Z He, **CW Schadt** and J Zhou. (2016). Network succession reveals the importance of competition in response to emulsified vegetable oil amendment for uranium bioremediation. *Environmental Microbiology* 18(1):205-218
6. Higgins, SA, A Welsh, LH Orellana, KT Konstantinidis, JC Chee-Sanford, RA Sanford, **CW Schadt**, and FE Löffler. 2016. Detection and Diversity of Fungal Nitric Oxide Reductase Genes (p450nor) in Agricultural Soils. *Applied and environmental microbiology*, 82(10), pp.2919-2928.
7. Jun, SR., TM Wassenaar, I Nookaew, L Hauser, V Wanchai, M Land, CM Timm, TYS Lu, **CW Schadt**, MJ Doktycz and DA Pelletier. (2016) Diversity of *Pseudomonas* Genomes, Including *Populus*-Associated Isolates, as Revealed by Comparative Genome Analysis. *Applied and Environmental Microbiology*, 82(1):

- 375-383.
8. Utturkar, SM, WN Cude, MS Robeson, ZK Yang, DM Klingeman, ML Land, SL Allman, TYS Lu, SD Brown, **CW Schadt**, M Podar and DA Pelletier. 2016. Enrichment of root endophytic bacteria from *Populus deltoides* and single-cell genomics analysis. *Applied and Environmental Microbiology*, pp.AEM-01285.
  9. Wilson, RM, AM Hopple, MM Tfaily, SD Sebestyen, CW Schadt, L Pfeifer-Meister, C Medvedeff, KJ McFarlane, JE Kostka, M Kolton, R Kolka, LA Kluber, JK Keller, TP Guilderson, NA Griffiths, JP Chanton, SD Bridgham, and PJ Hanson. 2016. Stability of Peatland Carbon to Rising Temperatures. *Nature Communications*, In Press.
  10. Velez J, TJ Tschaplinski, R Vilgalys, **CW Schadt**, G Bonito, K Hameed, N Engle and CE Hamilton. 2016. Characterization of a novel, ubiquitous fungal endophyte from the rhizosphere and root endosphere of *Populus* trees. *Fungal Ecology*, In Press

## **2015**

11. Hacquard, S and **CW Schadt\*** (2015). Towards a holistic understanding of the beneficial interactions across the *Populus* microbiome. *New Phytologist*, **205**(4): 1424-1430. [\*equal contribution]
12. Klingeman, D.M., Utturkar, S., Lu, T.Y.S., **Schadt, C.W.**, Pelletier, D.A. and Brown, S.D., 2015. Draft Genome Sequences of Four Streptomyces Isolates from the *Populus trichocarpa* Root Endosphere and Rhizosphere. *Genome announcements*, 3(6), pp.e01344-15.
13. Jun, SR, MS Robeson, LJ Hauser, **CW Schadt** and AA Gorin. (2015). PanFP: Pangenome-based functional profiles for microbial communities. *BMC Research Notes*. In Press.
14. Naujokas, MF, NT Basta, Z Cheng, GM Hettiarachchi, M Maddaloni, **CW Schadt**, KG Scheckel, C Attanayake and H Henry. (2015). Bioavailability-based In Situ Remediation to Meet Future Lead (Pb) Standards in Urban Soils and Gardens. *Environmental Science & Technology*. **49**(15):8948–8958
15. **Schadt, CW** and A Rosling. (2015). Comment on “Global diversity and geography of soil fungi”. *Science*. **348**(6242):1438.
16. Timm, C.M., Campbell, A.G., Utturkar, S.M., Jun, S.R., Parales, R.E., Tan, W.A., Robeson, M.S., Lu, T.Y.S., Jawdy, S., Brown, S.D. and Ussery, D.W., **Schadt, C.W.** (2015). Metabolic functions of *Pseudomonas fluorescens* strains from *Populus deltoides* depend on rhizosphere or endosphere isolation compartment. *Frontiers in microbiology*, 6.
17. Wang, G, S Jagadamma, MA Mayes, **CW Schadt**, JM Steinweg, L Gu and WM Post. (2015). Microbial dormancy improves development and experimental validation of ecosystem model. *ISME Journal*. **9**: 226-237.
18. Zhang, P, WM Wu, JD Van Nostrand, Y Deng, Z He, T Gihring, G Zhang, **CW Schadt**, D Watson, P Jardine, CS Criddle, S Brooks, TL Marsh, JM Tiedje, AP Arkin and J Zhou. (2015). Dynamic succession of groundwater functional microbial communities in response to emulsified vegetable oil amendment during sustained in situ U (VI) reduction. *Applied and Environmental Microbiology*. **81**(12): 4164-4172.

**2014**

19. Bonito, G, H Reynolds, M Robeson, J Nelson, B Hodkinson, G Tuskan, **CW Schadt** and R Vilgalys. (2014). Plant host and soil origin influence fungal and bacterial assemblages in the roots of woody plants. *Molecular Ecology*: **23**(13): 3356-3370.
20. Jastoria, P, SJ Green, A Canion, WA Overholt, O Prakash, D Wafula, D Hubbard, DB Watson, **CW Schadt**, SC Brooks and JE Kostka. (2014). Watershed scale fungal community characterization along a pH gradient in a subsurface environment co-contaminated with uranium and nitrate. *Applied and Environmental Microbiology*, **80**:1810-1820.
21. Lin, X, MM Tfaily, JM Steinweg, P Chanton, K Esson, ZK Yang, JP Chanton, W Cooper, **CW Schadt** and JE Kostka (2014). Microbial metabolic potential in carbon degradation and nutrient acquisition (N, P) in an ombrotrophic peatland. *Applied and Environmental Microbiology*, **80**:3531-3540.
22. Lin, X, MM Tfaily, SJ Green, JM Steinweg, P Chanton, A Invittaya, JP Chanton, W Cooper, **CW Schadt** and JE Kostka (2014). Microbial community stratification linked to variation in organic matter properties in a boreal peatland. *Applied and Environmental Microbiology*, **80**:3518-3530.
23. Tfaily, MM, WT Cooper, JE Kostka, PR Chanton, **CW Schadt**, PJ Hanson, CM Iversen and JP Chanton. (2014). Organic matter transformation in the peat column at Marcell Experimental forest: Humification and vertical stratification. *Journal of Geophysical Research: Biogeosciences*, **119**:661-675.
24. Utturkar, SM, DM Klingeman, ML Land, **CW Schadt**, MJ Doktycz, DA Pelletier and SD Brown (2014). Evaluation and validation of *de novo* and hybrid assembly techniques to derive high quality genome sequences. *Bioinformatics*. **30**(19): 2709-2716.
25. Wang, G, MA Mayes, L Gu, and **CW Schadt**. (2014). Representation of Dormant and Active Microbial Dynamics for Ecosystem Modeling. *PLoS ONE* **9**:e89252.

**2013**

26. De Graaff, MA, J Six, J Jastrow, J Phillips, **CW Schadt** and SD Wullschlegler. (2013). Variation in root architecture among switchgrass cultivars impacts root decomposition rates. *Soil Biology and Biochemistry* **58**:198-206.
27. Guevara, G, G Bonito, J Trappe, E Cazares, G Williams, RA Healy, **CW Schadt** and R Vilgalys. (2013). New North American truffles (*Tuber* spp.) species and their ectomycorrhizal associations. *Mycologia* **105**:194–209.
28. Shakya, M, C Quince, JH Campbell, ZK Yang, **CW Schadt** and M Podar. (2013). Comparative metagenomic and rRNA microbial diversity characterization using Archaeal and Bacterial synthetic communities. *Environmental Microbiology* **15**:1882-1889.
29. Shakya M, N Gottel, H Castro, ZK Yang, L Gunter, J Labbe, W Muchero, G Bonito, R Vilgalys, G Tuskan, M Podar and **CW Schadt**. (2013) A Multifactor Analysis of Fungal and Bacterial Community Structure in the Root Microbiome of Mature *Populus deltoides* Trees. *PLoS ONE* **8**:e76382.
30. Tang, GP, W-M Wu, DB Watson, JC Parker, **CW Schadt**, X Shi, and SC Brooks. (2013). U(VI) Bioreduction with Emulsified Vegetable Oil as the Electron Donor –

Microcosm Tests and Model Development. *Environmental Science and Technology*. **47**:3209–3217.

31. Tang, GP, DB Watson, W-M Wu, **CW Schadt**, JC Parker and SC Brooks. (2013) U(VI) Bioreduction with Emulsified Vegetable Oil as the Electron Donor – Model Application to a Field Test. *Environmental Science and Technology*. **47**:3218–3225.
32. Watson, DB, W Wu, T Mehlhorn, G Tang, J Earles, K Lowe, TM Gihring, G Zhang, J Phillips, MI Boyanov, BP Spalding, **CW Schadt**, KM Kemner, CS Criddle, PM Jardine and SC Brooks. (2013). In situ bioremediation of uranium with emulsified vegetable oil as the electron donor. *Environmental Science & Technology* **47**:6440-6448.

## **2012**

33. Brown SD, DM Kingeman, TS Lu, CM Johnson, SM Utturkar, ML Land, **CW Schadt**, MJ Doktycz and DA Pelletier. (2012). Genome Announcement: Draft genome sequence of *Rhizobium* sp. strain PDO-076, a bacterium isolated from *Populus deltoides*. *Journal of Bacteriology*, **194**:2383-2384.
34. Brown SD, SM Utturkar, DM Klingeman, CM Johnson, M Stanton, ML Land, TY Lu, **CW Schadt**, MJ Doktycz and DA Pelletier. (2012). Genome Announcement: Twenty One *Pseudomonas* Genomes and Nineteen Genomes from Diverse Bacteria Isolated from the Rhizosphere and Endosphere of *Populus deltoides*. *Journal of Bacteriology* **194**:5991-5993.
35. Castro HF, AT Classen, EE Austin, KM Crawford and **CW Schadt**. (2012). Development and validation of a citrate synthase directed quantitative PCR marker for soil bacterial communities. *Applied Soil Ecology* **61**:69-75.
36. Cregger, MA, **CW Schadt**, NG McDowell, WT Pockman and AT Classen. (2012). Soil microbial community response to precipitation change in a semi-arid ecosystem. *Applied and Environmental Microbiology* **78**:8587-8594.
37. Dunbar J, SA Eichorst, L Gallegos-Graves, S Silva, G Xie, NW Hengartner, RD Evans, BA Hungate, RB Jackson, JP Magonigal, **CW Schadt**, R Vilgalys, DR Zak, and CR Kuske (2012) Common bacterial responses in six ecosystems exposed to ten years of elevated atmospheric carbon dioxide. *Environmental Microbiology* **14**:1145-1158.
38. Gihring TM, SJ Green and **CW Schadt**. (2012). Massively-parallel rRNA gene sequencing exacerbates the potential for biased community diversity comparisons due to variable library sizes. *Environmental Microbiology*, **14**:285-289.
39. Green SJ, O Prakash, P Jasrotia, W Overholt, EA Cardenas, D Hubbard, J Tiedje, DB Watson, **CW Schadt**, SC Brooks and JE Kostka. (2012). Denitrifying bacteria in the genus *Rhodanobacter* dominate bacterial communities in the highly contaminated subsurface of a nuclear legacy waste site. *Applied and Environmental Microbiology*, **78**:1039-1047.
40. Hodkinson BP, NR Gottel, **CW Schadt**, and F Lutzoni. (2012). Photoautotrophic symbiont and geography are major factors affecting highly structured and diverse bacterial communities in the lichen microbiome. *Environmental Microbiology*, **14**:147-161.
41. Li Y, TJ Tshaplinski, NL Engle, CY Hamilton, M Rodriguez Jr., JC Liao, **CW Schadt**,



- AM Guss, Y Yang and DE Graham. (2012). Combined inactivation of the *Clostridium cellulolyticum* lactate and malate dehydrogenase genes substantially increases ethanol yields from cellulose and switchgrass fermentations. *Journal of Biotechnology for Biofuels* **5**:2-13.
42. Mosher JJ, TJ Phelps, M Podar, RA Hurt, JH Campbell, MM Drake, JG Moberly, **CW Schadt**, SD Brown, TC Hazen, AV Palumbo, BA Faybishenko and DA Elias. (2012). Microbial Community Succession during Lactate Amendment and Electron-acceptor Limitation Reveals a Predominance of Metal-reducing *Pelosinus* spp. *Applied and Environmental Microbiology* **78**:2082-2091.
43. Sullivan, TS, NR Gottel, N Basta, PM Jardine and **CW Schadt**. (2012). Firing range soils yield a diverse array of fungal isolates capable of organic acid production and Pb-mineral solubilization. *Applied and Environmental Microbiology* **78**:6078-6086 (Images featured on journal cover, Dec Issue 2012).
44. Weston DJ, DA Pelletier, JL Morrell-Falvey, TJ Tschaplinski, SJ Jawdy, TY Lu, SM Allen, A Karve, SJ Melton, MZ Martin, **CW Schadt**, JG Chen, X Yang, MJ Doktycz and G Tuskan. (2012). *Pseudomonas fluorescens* induces strain-dependent and strain-independent host plant responses in defense networks, primary metabolism, photosynthesis and fitness. *Molecular Plant Microbe Interactions* **25**:765-778.
- 2011**
45. DeGraaff MA, **CW Schadt**, K Rula, J Six, JA Schwietzer and AT Classen. (2011). Elevated CO<sub>2</sub> and plant species diversity interact to alter root decomposition. *Soil Biology and Biochemistry* **43**:2347-2354.
46. Garten Jr. CT, DJ Brice, HF Castro, RL Graham, MA Mayes, JR Phillips, WM Post, **CW Schadt**, SD Wullschleger, DD Tyler, PM Jardine, JD Jastrow, R Matamala, RM Miller, KK Moran, TW Vugteveen, RC Izaurralde, AM Thomson, TO West, JE Amonette, VL Bailey, FB Metting and JL Smith. (2011). Response of "Alamo" switchgrass tissue chemistry and biomass to nitrogen fertilization in West Tennessee, USA. *Agriculture Ecosystems and Environment* **140**: 289-297.
47. Gihring TM, G Zhang, CC Brandt, SC Brooks, JH Campbell, S Carroll, CS Criddle, SJ Green, P Jardine, JE Kostka, K Lowe, TL Mehlhorn, W Overholt, DB Watson, ZK Yang, W-M Wu, and **CW Schadt**. A limited microbial consortium is responsible for extended bioreduction of uranium in a contaminated aquifer. *Applied and Environmental Microbiology*, **77**:5955-5965.
48. Gilmour CC, DA Elias, AM Kucken, SD Brown, AV Palumbo, **CW Schadt** and JD Wall. (2011). The sulfate-reducing bacterium *Desulfovibrio desulfuricans* ND132 as a model for understanding bacterial mercury methylation. *Applied and Environmental Microbiology*, **77**:3938–3951,
49. Gottel, NR, HF Castro, M Kerley, ZK Yang, DA Pelletier, M Podar, T Karpinets E Uberbacher, GA Tuskan, R Vilgalys, MJ Doktycz, **CW Schadt**. (2011). *Populus deltoides* roots harbor distinct microbial communities within the endosphere and rhizosphere across contrasting soil types. *Applied and Environmental Microbiology*, **77**:5934-5944.
50. Weber CF, DR Zak, BA Hungate, RB Jackson, R Vilgalys, RD Evans, **CW Schadt**, JP Megonigal and CR Kuske. (2011). Responses of soil cellulolytic fungal communities to elevated atmospheric CO<sub>2</sub> are complex and variable across five

ecosystems. *Environmental Microbiology*, **13**:2778-2793.

## **2010**

51. Castro HF, AT Classen, EE Austin, RJ Norby and **CW Schadt**. (2010) Soil microbial community responses to multiple climate change drivers. *Applied and Environmental Microbiology* **76**:999-1007.
52. Degraff MA, AT Classen, HF Castro and **CW Schadt**. (2010) Labile soil carbon inputs mediate the soil microbial community composition and plant residue decomposition rates. *New Phytologist*. **188**:1055-1064
53. Garten Jr, CT Jr., JL Smith, DD Tyler, JE Amonette, VL Bailey, DJ Brice, HF Castro, RL Graham, CA Gunderson, RC Izaurralde, PM Jardine, JD Jastrow, MK Kerley, R Matamala, MA Mayes, FB Metting, RM Miller, KK Moran, WM Post III, RD Sands, **CW Schadt**, JR Phillips, AM Thomson, T Vugteveen, TO West, and SD Wullschlegel. (2010) Intra-annual changes in biomass, carbon, and nitrogen dynamics at 4-year old switchgrass field trials in west Tennessee, USA. *Agriculture Ecosystems and Environment* **136**:177-184.
54. Hemme CL, H Mouttaki, Y-J Lee, L Goodwin, S Lucas, A Copeland, A Lapidus, T Glavina del Rio, H Tice, E Saunders, T Brettin, JC Detter, CS Han, S Pitluck, ML Land, LJ Hauser, N Krypides, N Mikhailova, Z He, L Wu, JD Van Nostrand, B Henrissat, Q He, PA Lawson, RS Tanner, LR Lynd, J Wiegel, MW Fields, AP Arkin, **CW Schadt**, BS Stevenson, MJ McInerney, Y Yang, H Dong, RL Huhnke, JR Mielenz, S-Y Ding, ME Himmel, S Taghavi, D. van der Lelie, EM Rubin, and J-Z Zhou. (2010) Genome Announcement: Sequencing of Multiple Clostridia Genomes Related to Biomass Conversion and Biofuels Production. *Journal of Bacteriology*, **192**:6494-6496.
55. Hollister EE, **CW Schadt**, R Ansley, AV Palumbo and TW Boutton. (2010) Structural and functional diversity of soil bacterial and fungal communities following woody plant encroachment in the southern Great Plains. *Soil Biology and Biochemistry*. **10**:1816-1824.
56. Miller LD, JJ Mosher, A Venkateswaran, ZK Yang, AV Palumbo, TJ Phelps, M Podar, **CW Schadt** and M Keller. (2010) Establishment and metabolic analysis of a model microbial community for understanding trophic and electron accepting interactions of subsurface anaerobic environments. *BMC Microbiology* **10**:149.
57. Reganold, JP, PK Andrews, JR Reeve, L Carpenter-Boggs, **CW Schadt**, JR Alldredge, CF Ross, NM Davies, and J Zhou (2010) Fruit and soil quality of organic and conventional strawberry agroecosystems. *PLoS ONE*. **5**:e12346.
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### **BOOK CHAPTERS**

82. Reganold JP, Andrews PK, Reeve JR, Carpenter-Boggs L, **Schadt CW**, Alldredge JR, Ross CF, Davies NM and JZ Zhou. (2013). Organic Versus Conventional Strawberry Agroecosystem. In: *Sustainable Soil Management* (D. Rooney, ed). CRC Press, Pg185-212.

83. Keller M, **Schadt CW** and AV Palumbo. (2008). Single Cell Genomics. In: *Accessing Uncultivated Microorganisms* (K. Zengler, ed) American Society for Microbiology Press, Washington DC.
84. Schmidt SK, Wilson K, Meyer AF, **Schadt CW**, Porter TM and JM Moncalvo. (2008) The Missing Fungi – New Insights from Culture-Independent Molecular Studies of Soil. In: *Accessing Uncultivated Microorganisms* (K. Zengler, ed) American Society for Microbiology Press, Washington DC.
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#### **DISSERTATION**

88. **Schadt CW**. (2002) Studies on the fungal associations of the alpine sedge *Kobresia myosuroides*. Ph.D. Dissertation, University of Colorado-Boulder.

#### **OTHER PUBLICATIONS**

89. **Schadt CW**, Classen AT. (2007) Book Review: Soil Microbiology, Ecology and Biochemistry.: EA Paul (ed). *Soil Science Society of America Journal*, **71**:1420
90. **Schadt, CW**. (2014). New found 'silence' on a southern, suburban, summer night. *Belle Rêve Literary Journal* **14**(3):54-56.

#### **PATENTS**

91. Pelletier DA, Weston DJ, **Schadt CW**, Doktycz MJ and GA Tuskan J. 2013. Plant Growth Promoting Rhizobacterium. Filed January 2013 (No. 13/747,995), Granted August 2015 (No. US9101144 B2).

#### **INVITED AND CONTRIBUTED PRESENTATIONS & SEMINARS**

- Ecological Society of America Meeting, Ft. Lauderdale FL, August 2016, Contributed  
University of Texas-Austin, Dept. of Integrative Biology, April 2016, Invited  
University of Tennessee, Dept. of Civil & Environmental Engineering, March 2016, Invited  
University of Nebraska-Center for Biotechnology, Feb 2016, Invited  
Phytobiomes Meeting, Washington DC, July 2015, Invited  
International Union of Forest Research Organizations, Florence, Italy, June 2015, Invited  
Mid-Atlantic States Mycological Conference, Keynote Speaker, April 2014, Invited.  
University of Tennessee, Ecology & Evolutionary Biology Departmental Seminar, August 2013, Invited  
American Chemical Society Meeting, September 2013, Invited

DOE Joint Genome Institute User Meeting, March 2013, Invited  
Ecological Society of America, Annual Meeting, August 2012, Contributed  
DOE Joint Genome Institute Seminar, Walnut Creek CA, January 2012, Invited  
DOE Subsurface Biogeochemical Research Meeting, Washington DC, April 2011,  
Invited  
Latin American Congress of Microbiology, Uruguay, Sept. 2010, Invited  
Ecological Society of America, Annual Meeting, August 2010, Contributed  
Ecological Society of America, Annual Meeting, August 2009, Invited  
World of Coal Ash Meeting, Lexington Kentucky, May 2009, Contributed  
Duke University, Nicholas School of the Environment Seminar, April 2009, Invited  
Michigan State University, Dept. Seminar in Microbiology & Molecular Biology, Jan  
2009, Invited  
University of Tennessee, Departmental Seminar in Civil Engineering, Oct 2008, Invited  
Ecological Society of America, Annual Meeting, Aug 2008, Contributed  
Texas A&M University, Dept. Seminar in Rangeland Ecology & Management, April  
2008, Invited  
Fungal Environmental Sampling & Informatics Network, Copenhagen Denmark, Sept  
2007, Invited  
Ecological Society of America, Annual Meeting, Aug 2007, Invited  
American Society of Microbiology General Meeting, May 2007, Invited  
University of Tennessee, Departmental Seminar in Microbiology, Dec 2006, Invited  
Long Term Ecological Research Network Meeting, Estes Park Colorado, Sept 2006,  
Invited  
Univ. of Oklahoma, Plant & Microbial Sciences, Department Seminar, June 2006,  
Invited  
University of Puerto Rico-Mayaguez, Biology Departmental Seminar, May 2006, Invited  
Appalachian State University, Biology Departmental Seminar, Oct 2005, Invited  
Ecological Society of America, Annual Meeting, Aug 2005, Contributed  
Mycological Society of America, Annual Meeting, Aug 2005, Contributed  
Soil Ecology Society Meeting, May 2005 (Keynote Address for Day 3), Invited