

JAMES C. STEGEN

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EDUCATION AND TRAINING

2011-2013 Pauling Fellow, Microbiology, Pacific Northwest National Laboratory
2009-2011 Postdoc, Biology, University of North Carolina
2009 Ph.D., Ecology & Evolution, University of Arizona
2004 M.S., Biology, Eastern Washington University
2000 B.A., Biology, Central Washington University

RESEARCH AND PROFESSIONAL EXPERIENCE

2013-present, **Staff Scientist**, Pacific Northwest National Laboratory. *Lead investigator for research on multi-scale linkages among soil microbial communities, carbon-cycling, and permafrost. Lead investigator for research linking microbial communities to subsurface biogeochemistry.*
2011-2013, **Linus Pauling Distinguished Fellow**, Pacific Northwest National Laboratory. *Lead investigator for research on processes governing spatiotemporal patterns in subsurface microbial communities*
2009-2011, **NSF Postdoctoral Fellow in bioinformatics**, (Allen Hurlbert, faculty sponsor). *Lead investigator for research on the merging of empirical data with ecological simulation frameworks to discern ecological and evolutionary processes at landscape to continental scales.*
2007-2009, **Research Associate (NSF-FIBR)**, University of Arizona (PI, Regis Ferriere). *Key contributor to research on the development of eco-evolutionary simulation models of feedbacks among phenotypic evolution, organismal ecology, and ecosystem function in stream systems.*
2005, **Field Research Associate at RMBL**, University of Arizona (PI, Brian Enquist). *Key contributor to research linking plant form and function to landscape scale gradients in alpine ecosystem function.*
2004-2007, **Teaching Associate**, University of Arizona
2001-2004, **Teaching Assistant**, Eastern Washington University
2002-2004, **Biological survey of Banks Lake**, Subcontracted via WA State Fish & Wildlife. *Key contributor to the collection and analysis of algal, invertebrate and limnological samples.*
2001-2003, **Biological survey of northeast WA lakes**, Subcontracted via Kalispell Tribe. *Key contributor to the collection and analysis of algal, invertebrate and limnological samples.*

SELECTED PUBLICATIONS

Dini-Andreote, F. *, Stegen, J.C. *, et al. 2015. Disentangling mechanisms that mediate the balance between stochastic and deterministic processes in microbial succession. Proceedings of the National Academy of Sciences (in review). (* denotes equal contribution)
Stegen, J.C., et al. Estimating and mapping community assembly processes in the subsurface. Frontiers in Microbiology (in review).
Hu, W., et al. 2015. Environmental filtering drives the vertical distribution of bacterial communities in a permafrost core from Qinghai-Tibet Plateau, China. Scientific Reports (in review)
Hurlbert, A.H. and J.C. Stegen. 2014. On the processes generating latitudinal richness gradients: identifying diagnostic patterns and predictions. Frontiers in Genetics 5:420
Hurlbert, A.H. and J.C. Stegen. 2014. When should species richness be energy-limited, and how would we know? Ecology Letters, 17:401-413 (an invited *Ideas and Perspectives* paper).
Lindemann, S.R., Moran, J.J., Stegen, J.C., et al. The epsomitic phototrophic microbial mat of Hot Lake, Washington: Community structural responses to seasonal cycling. Frontiers in Microbiology, 4:323.

- Stegen, J.C., et al. 2013. Quantifying community assembly processes and identifying features that impose them. ISME Journal, 7:2069-2079.
- Wang, J., J. Shen, Y. Wu, T. Chen, J. Soininen, J.C. Stegen, et al. 2013. Phylogenetic beta-diversity in bacterial communities across ecosystems: deterministic vs. stochastic processes. ISME Journal, 7:1310-1321.
- Bailey, V.L., S.J. Fansler, J.C. Stegen, and L.A. McCue. 2013. Linking microbial community structure to β -Glucosidic function in soil aggregates. ISME Journal, 7:2044-2053.
- Stegen, J.C., X. Lin, A.E. Konopka, and J.K. Fredrickson. 2012. Stochastic and deterministic assembly processes in subsurface microbial communities. ISME Journal, 6:1653-64.
- Kraft, N.J.B., L.S. Comita, J.M. Chase, N.J. Sanders, N.G. Swenson, T.O. Crist, J.C. Stegen, et al. 2011. Disentangling the drivers of β diversity along latitudinal and elevational gradients. Science 333:1755-1758. **Science cover article*
- Stegen, J.C. and A.H. Hurlbert. 2011. Inferring ecological processes from taxonomic, phylogenetic and functional trait β -diversity. PLoS ONE 6:e20906.

SYNERGISTIC ACTIVITIES

- Co-chair of 2012 Gordon Research Seminar on Metabolic Ecology
- Founding member of the Pacific Northwest National Laboratory postdoc council (2012-present)
- Invited speaker for University of North Carolina's 2011 ecology seminar series
- Invited speaker at 2010 Metabolic Basis of Ecology Gordon Research Conference
- Invited participant for NCEAS working group on beta-diversity synthesis (2009-2011)
- Invited participant for Woodstoich II, an international workshop for young scientists working in ecological stoichiometry (2009)
- *Member:* Ecological Society of America, American Society of Naturalists, International Society of Biogeography, International Society for Microbial Ecology;
- *Reviewer:* American Naturalist, Biotropica, Diversity and Distributions, Ecography, Ecology, Ecology Letters, Environmental Microbiology, Functional Ecology, Global Ecology and Biogeography, Journal of Animal Ecology, Marine Ecology Progress Series, Microbial Ecology, PLoS ONE, Philosophical Transactions of the Royal Society, Proceedings of the Royal Society-B;
- *Academic Editor:* PLoS ONE