

# ***CURRICULUM VITAE***

## **Sean Toshio Berthrong**

### **ADDRESS**

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### **PROFESSIONAL PREPARATION**

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<b>Cornell University</b>	<b>Postdoctoral</b> , Microbial Ecology (Advisers: Laurie E. Drinkwater, Daniel H. Buckley)	2009-2014
<b>Duke University</b>	<b>Ph.D.</b> , Ecology (Adviser: Robert B. Jackson)	2004-2009
<b>Boston University</b>	<b>M.A.</b> , Biology (Adviser: Adrien C. Finzi)	2001-2003
<b>Boston University</b>	<b>B.A.</b> , Biology and Classics	1998-2001

### **PROFESSIONAL EXPERIENCE**

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<b>2014-</b>	<b>Assistant Professor</b> , Department of Biological Sciences Butler University, Indianapolis, IN
<b>2013-2014</b>	<b>Visiting Affiliate Faculty</b> , Department of Biology College of Charleston, Charleston, SC
<b>2009-2014</b>	<b>Postdoctoral Associate and Fellow</b> , Department of Horticulture Cornell University, Ithaca, NY and USDA National Inst. of Food and Agriculture
<b>2009:</b>	<b>Adjunct Faculty</b> , Environmental Sciences, Biology Department Elon University, Elon, NC
<b>2009:</b>	<b>Departmental Fellow</b> , Department of Biology Duke University, Durham, NC
<b>2006-2009:</b>	<b>Graduate Research Fellow</b> , Global Change Education Program US Department of Energy, Durham, NC
<b>2004-2005:</b>	<b>Graduate Research Assistant</b> , Department of Biology Duke University, Durham, NC
<b>2003-2004:</b>	<b>Associate in Research</b> , Department of Biology Duke University, Durham, NC
<b>2001-2003:</b>	<b>Graduate Research and Teaching Fellow</b> , Biology Department Boston University, Boston, MA
<b>2000-2001:</b>	<b>Undergraduate Researcher</b> , Biology Department Boston University, Boston, MA

### **PEER-REVIEWED PUBLICATIONS**

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**Berthrong, S.T.**, Buckley, D.H., Drinkwater, L.E. (*In Preparation*). "Long term changes in

- organic matter content drive microbial community composition and spatial structure in soils.”
- Andam, C.P., Carver, S.M., **Berthrong, S.T.** (2015). “Horizontal gene flow in managed ecosystems.” *Annual Review of Ecology, Evolution, and Systematics* 46: 121-43
- Berthrong, S.T.**, Yeager, C.M., Gallegos-Graves, L., Steven, B., Eichorst, S.A., Jackson, R.B., Kuske, C.R. (2014). “Elevated CO<sub>2</sub> and N fertilization interactively alter N fixing bacterial communities.” *Applied and Environmental Microbiology* 80(10):3103-3112
- Berthrong, S.T.**, Buckley, D.H., Drinkwater, L.E. (2013). “Soil microbial community responses to agroecosystem management and carbon substrate addition.” *Microbial Ecology* 66(1):158-170
- Berthrong, S.T.**, Piñeiro, G., Jobbágy, E.G., Jackson, R.B. (2012). “Changes in soil carbon and nitrogen with afforestation across gradients of precipitation and plantation age.” *Ecological Applications* 22(1):76-86
- Berthrong, S.T.**, Schadt, C.W., Piñeiro, G, Jackson R.B. (2009). “Afforestation alters soil functional gene composition and biogeochemical processes in South American grasslands.” *Applied and Environmental Microbiology* 75(19):6240-6248
- Berthrong, S.T.**, Jobbágy, E.G., Jackson R.B. (2009). “A global meta-analysis of soil exchangeable cations, pH, carbon, and nitrogen with afforestation.” *Ecological Applications* 19(8):2228-2241
- Fierer, N., Morse, J.L., **Berthrong, S.T.**, Bernhardt, E.S., Jackson, R.B., (2007). “Environmental controls on the landscape-scale biogeography of stream bacterial communities.” *Ecology* 88(9):2162-2173
- Berthrong, S.T.** and Finzi, A.C. (2006). “Amino acid cycling in three cold-temperate forests of the northeastern USA.” *Soil Biology and Biochemistry* 38(5):861-869
- Finzi, A.C., **Berthrong, S.T.** (2005). “The Uptake of Amino Acids by Microbes and Trees in Three Cold-Temperate Forests.” *Ecology* 86(12):3345-3355
- Jackson, R.B., **Berthrong, S.T.**, Cook, C.W., Jobbágy, E.J., McCulley, R.L. (2004) “Comment on ‘A Reservoir of Nitrate Beneath Desert Soils.’” *Science* 503: 51

## GRANTS AND FELLOWSHIPS

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**2015: Earth Systems Sciences** (\$54,062)

US Department of Energy, Office of Science

**2015: SWCD Urban Soil Health program** (\$3,435.90)

Marion-Hendricks CWI Soil Health Program

**2012-2014: Postdoctoral Fellowship** (\$130,000)

US Department of Agriculture NIFA Fellowship Grant Program

**2010: Biogeochemistry and Biocomplexity Small Grant** (\$4,000)

Cornell University (Collaborator with PI John C. Gaby)

**2006-2009: Doctoral Dissertation Enhancement Grant** (\$15,000)

National Science Foundation

**2009: Departmental Fellowship** (\$12,700)

Biology Department, Duke University  
**2006-2009: Graduate Research in the Environment Fellowship** (\$110,000)  
Global Change Education Program, US Department of Energy  
**2008: Conference Travel Grant** (\$750)  
The Graduate School, Duke University  
**2006: Grant-in-aid of Research** (\$1,000)  
Keever Endowment, Duke University Biology Department  
**2006: Field Research Grant** (\$1,500)  
Tinker Foundation  
**2005: Conference Travel Grant** (\$750)  
The Graduate School, Duke University  
**2002: Grant-in-aid-of-Research** (\$300)  
Sigma Xi, The Scientific Research Society  
**1999, 2000: Undergraduate Research Opportunity Grant** (Two Awards)  
Undergraduate Research Opportunity Program, Boston University

## AWARDS AND HONORS

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**2011: Participant, Strategies and Techniques for Analyzing Microbial Populations**  
Marine Biological Laboratory, Wood's Hole, MA  
**2009: Best Student Oral Presentation**  
6<sup>th</sup> International Symposium on Ecosystem Behaviour (Biogeomon)  
Helsinki, Finland (€300)  
**2008: Oosting Graduate Student Fellow**  
In recognition of outstanding Ph.D. research in the field of Ecology  
Awarded at the 38<sup>th</sup> annual Oosting Memorial Lecture, Durham, NC  
**2008: Preparing Future Faculty Fellow**  
The Graduate School, Duke University

## PRESENTATIONS

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**Invited Seminar: Indiana Univ. School of Public and Environmental Affairs Seminars.**  
September 2015. "Organic Matters: The interaction of soil organic material, farm management practices, and microbial populations."  
**Undergraduate Research Conference**, Butler University, April 2015. *Co-authored and Presented by undergraduate student, Blake Moskal*, "Urban Gardening in Indianapolis: Is our soil safe?"  
**Invited Seminar: College of Charleston, Department of Biology Seminar Series**, September 2013. "Managing Microbes: Management, Bacteria, and Fungi, and how they interact with C and N cycling."  
**98<sup>th</sup> Meeting of the Ecological Society of America**, August 2013.  
"Long term changes in organic matter content drive microbial community structure in

- soils.” Oral presentation
- Annual Meeting of the American Geophysical Union**, December 2011.  
 “Soil microbial community responses to agroecosystem management and carbon substrate addition.” Poster presentation.
- Biogeochemistry and Environmental Biocomplexity Seminar Series**, September 2010.  
 “Afforestation in the Rio de la Plata Grasslands: Effects on soil microbial structure and biogeochemical functions.” Invited presentation.
- 94<sup>th</sup> Meeting of the Ecological Society of America**, August 2009. Albuquerque, NM.  
 “A metagenomic study of the gut-associated microbiota in very low birth weight infants.” Symposium presentation—co-author with Patrick C. Seed, C. Michael Cotton, and Robert B. Jackson
- 94<sup>th</sup> Meeting of the Ecological Society of America**, August 2009. Albuquerque, NM.  
 “A global meta-analysis of soil exchangeable cations, pH, carbon, and nitrogen with afforestation.” Poster Presentation
- 6<sup>th</sup> International Symposium on Ecosystem Behaviour**, July 2009. Helsinki, Finland.  
 “Afforestation, microbial metagenomics, and biogeochemistry in Southern South American Grasslands.” Award prize for the best student oral presentation
- Duke University Ecology Seminar Series**, April 2009. Durham, NC.  
 “Forests out of context: effects of afforestation on soils and microbes at multiple scales.” Oral Presentation
- 93<sup>rd</sup> Meeting of the Ecological Society of America**, August 2008. Milwaukee, WI. “Molecular and biogeochemical analyses suggest afforestation in southern South America alters soil processes.” Contributed oral presentation
- 38<sup>th</sup> Annual Oosting Memorial Lecture Student Symposium**, April 2008. Durham, NC.  
 “Changing Forestry in a Changing World: Afforestation and Global Change.” Selected for 1<sup>st</sup> Annual Oosting Graduate Student Symposium Oral Presentation
- US Department of Energy, Global Change Education Program, End-of-Summer workshop**, August 2007. Washington, DC. “Soil Biogeochemistry and Microbial Ecology of Afforestation in Temperate South American Grasslands.” Oral presentation
- 91<sup>st</sup> Ecological Society of America Annual Meeting**, August 2006. Memphis, TN.  
 “Pastures to Plantations: Afforestation Impacts Soil Microbial Community Composition and Biogeochemistry in Temperate South America.” Poster presentation.
- Southeastern Ecology and Evolution Conference**, March 2005. Athens, GA. “Eucalyptus or Gauchos? Preliminary data on the biogeochemical effects of afforestation on temperate South American grassland soils.” Oral presentation.
- 87<sup>th</sup> Meeting of the Ecological Society of America**, August 2002. Tucson, AZ.  
 “Organic nitrogen cycling in a temperate New England forest.” Poster presentation.

## TEACHING AND MENTORING

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**Instructor**, Butler University, BI408, 2015.

Taught upper level undergraduate class in Advanced Ecology, which focused on microbial and ecosystem ecology.

**Instructor**, Butler University, BI210, 2014-2016.

Taught fundamentals of Genetics (first in introductory biology sequence) to 6 sections of ~24 students through spring 2016

**Guest Lecturer**, Cornell University, EEB/HORT 4730, 2012.

I delivered a lecture on soil ecology and microbiology to a class of 20 students. The audience was a mixture of advanced undergraduate and graduate students.

**Instructor**, Cornell University, HORT 6940, 2011

I co-taught a course on decomposition processes to a class of 12 students. In this class combined group discussions and critical evaluations of published research.

**Guest Lecturer**, Cornell University, HORT 6170, 2011

I delivered a lecture on analytical techniques for carbon and nitrogen analysis and conducted interactive laboratory exercises to teach these methods.

**Invited Lecturer**, Cornell University, EEB/HORT 4730, 2010.

I delivered a lecture on soil ecology and microbiology to a class of 20 students. The audience was a mixture of advanced undergraduate and graduate students.

**Invited Lecturer**, Cornell Prison Education Program, Ecology course, 2010.

I gave a lecture on soil science and soil ecology to a class of 23 inmates working towards earning associate's or bachelor's degrees through Cornell's Prison Education Program while serving sentences at Auburn Correctional Facility, Auburn, NY.

**Adjunct Faculty**, Dept. of Environmental Studies, Elon University, 2009.

I designed and co-taught a winter term course, "Ecological Restoration," to a diverse class of undergraduate students. The course involved lectures, group discussions, and several field trips to ecological restoration projects in several different areas of North Carolina.

**Research Mentor**, Biology Department, Duke University 2009.

I mentored Kelly Adamski, an undergraduate research assistant, in molecular biology and soil techniques.

**Teaching Assistant**, Biology Department, Duke University, 2008.

I taught a lab section and graded exams for General Microbiology.

**Research Mentor**, Biology Department, Duke University, 2008.

I mentored undergraduate student, Catherine Johnson, in soil and molecular lab techniques, and mentored Cole Thompson on a two week field sampling trip to Uruguay.

**Teaching Assistant**, Biology Department, Duke University, 2005.

I taught lab sections and graded exams for the upper level undergraduate ecology class at Duke.

**Teaching Fellow**, Biology Department, Boston University, 2001-2003.

I taught first and second semester biology labs with material that ranged from ecology and conservation biology to genetics and molecular biology.

## PROFESSIONAL SERVICE

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**Editor** for *Annals of Applied Biology*

**Reviewer** for the journal *Annals of Applied Biology, Biogeochemistry, Biology and Fertility of Soils, Ecological Applications, Environmental and Experimental Botany, Environmental Science and Technology, Global Change Biology, Global Ecology and Biogeography, Oecologia, Soil Biology and Biochemistry*

**Grant Proposal Reviewer** for US DOE NICCR Southeast section and Czech Science Foundation

**Professional Societies:** International Society for Microbial Ecology, Ecological Society of America, American Geophysical Union, Sigma Xi