

Charlotte Jean Alster

Graduate Degree Program in Ecology
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EDUCATION

Ph.D.	2017	Graduate Degree Program in Ecology, Department of Biology, Colorado State University, Fort Collins, CO. Adviser: Dr. Joseph von Fischer.
B.A., <i>Cum Laude</i>	2012	Department of Geology, Carleton College, Northfield, MN.

RESEARCH INTERESTS

Soil microbial ecology, terrestrial biogeochemistry, microbial biogeography, plant-soil-microbe interactions, climate change and conservation

RESEARCH AND PROFESSIONAL EXPERIENCE

2013-present	Graduate Research Assistant, Department of Biology, Colorado State University, Fort Collins, CO.
2011-2012	Research Assistant, Science Education Resource Center (SERC), Carleton College, Northfield, MN.
2011	Research Experience for Undergraduates (REU) Student, Department of Earth System Science, University of California Irvine, Irvine, CA. Adviser: Steven D. Allison.
2010-2011	Ecosystem Ecology Lab Research Assistant, Department of Biology, Carleton College, Northfield, MN. Adviser: Daniel L. Hernández.
2009	Student Conservation Association Intern, Resource Management, Yellowstone National Park, Mammoth Hot Springs, WY.

PUBLICATIONS

2016	Alster, C.J. , A. Koyama, N.G. Johnson, M.D. Wallenstein, J.C von Fischer. Temperature sensitivity of soil microbial communities: an application of macromolecular rate theory to microbial respiration. <i>Journal of Geophysical Research: Biogeosciences</i> .
2013	Alster, C.J. , D.P. German, Y. Lu, and S.D. Allison. Microbial enzymatic responses to reduced precipitation and to increased nitrogen in a southern Californian grassland. <i>Soil Biology and Biochemistry</i> 64: 68-79.
2013	Hernandez, D.L., E.H. Esch, C.J. Alster , M.J. McKone, and P. Camill. Rapid accumulation of soil carbon and nitrogen in a prairie

restoration chronosequence. *Soil Science Society of America Journal* 77: 2029-2038.

AWARDS AND HONORS

- 2015 Finalist, Dance Your Ph.D., <https://goo.gl/XVvPgi>
- 2015 Honorable Mention, Soil Ecology Society Student Oral Competition
- 2015 2nd Place Oral Presentation, Front Range Student Ecology Symposium
- 2014 American Association for the Advancement of Science/Science Program for Excellence in Science
- 2014 Honorable Mention, NSF Graduate Research Fellowship
- 2013 Honorable Mention, NSF Graduate Research Fellowship
- 2012 Sigma Xi Nomination, Carleton College
- 2009 Americorps National Service Award, Student Conservation Association

GRANTS AND FELLOWSHIPS

- 2016 American Society of Agronomy, Crop Science Society of America and Soil Science Society of America Future Leaders in Science Award (*participation in the 2016 Congressional Visits Day (CVD) on March 14-15*)
- 2015-2016 Sustainability Leadership Fellow, The School of Global Environmental Sustainability, Colorado State University
- 2015 Travel Grant, Department of Biology, Colorado State University, \$1000
- 2015 Soil Ecology Society Parkinson Travel Award, \$250
- 2015 Graduate Degree Program in Ecology Small Grant, \$2000
- 2014 Travel Grant, Department of Biology, Colorado State University, \$1000
- 2014 Travel Grant, Graduate Degree Program in Ecology, Colorado State University, \$250
- 2014 Microtrop, Advanced Training in Tropical Microbiology For Early Career Scientists: Soil Microbial Ecology and Ecosystem Services (*intensive one-month advanced course in soil tropical microbial ecology, held in Senegal West Africa, paid participation and travel*)

PRESENTATIONS

- 2016 **Alster, C.J.**, P. Baas, M.D. Wallenstein, J.C von Fischer. Temperature sensitivity of extracellular enzymes for different soil microbial isolates. Front Range Student Ecology Symposium. Fort Collins, CO. (Contributed Talk).
- 2015 **Alster, C.J.**, A. Koyama, N.G. Johnson, J.C von Fischer. A Comparison of Arrhenius and Macromolecular Rate Theory for Predicting Temperature Responses of Soil CO₂ Production. American Geophysical Union. San Francisco, CA (Contributed

Talk).

- 2015 **Alster, C.J.**, A. Koyama, N.G. Johnson, J.C von Fischer. Using Macromolecular Rate Theory to assess the temperature sensitivity of soil microbial communities. Soil Ecology Society Meeting. Colorado Spring, CO. (Contributed Talk).
- 2015 **Alster, C.J.**, A. Koyama, N.G. Johnson, J.C von Fischer. Temperature sensitivity of soil microbial communities: Evaluating the new macromolecular rate theory for soil respiration. Front Range Student Ecology Symposium. Fort Collins, CO. (Contributed Talk).
- 2014 **Alster, C.J.**, A. Koyama, N.G. Johnson, J.C von Fischer. Assessing the relative importance of microbial versus abiotic factors for an ecosystem function: An evaluation of soil respiration rates from three grassland soils reciprocally transplanted with microbial communities. Ecological Society of America. Sacramento, CA. (Contributed Talk).
- 2013 Allison, S.D., **C.J. Alster**, Y. Lu, and D.P. German. 2013. Resilience of extracellular enzymes to environmental change. Ecological Society of America. Minneapolis, MN. (Invited Symposium).
- 2012 Hernandez, D.L., E.H. Esch, **C.J. Alster**, M.J. McKone, and P. Camill. Rapid accumulation of soil carbon and nitrogen in restored prairie is not predicted using a chronosequence approach. Ecological Society of America. Portland, OR. (Contributed Talk).
- 2011 **Alster, C.J.**, D.P. German, Y. Lu, and S.D. Allison. Microbial enzymatic response to reduced precipitation and increased nitrogen in a southern Californian grassland. American Geophysical Union. San Francisco, CA. (Poster Presentation).
- 2011 **Alster, C.J.**, E.H. Esch, Hernandez, D.L., M.J. McKone, and P. Camill. Soil carbon and nitrogen accumulation in a 15-year prairie restoration experiment. Ecological Society of America. Austin, TX. (Poster Presentation).

TEACHING EXPERIENCE

- 2015 Graduate Teaching Fellow, Graduate Degree Program in Ecology, Colorado State University, Fort Collins, CO.
- ECOL 610 (Ecosystem Ecology)
- 2013 Graduate Teaching Assistant, School of Global Environmental Sustainability, Colorado State University, Fort Collins, CO.

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- Global Environmental Sustainability 101 (Foundations of Environmental Sustainability)
- 2012-2016 Graduate Teaching Assistant, Department of Biology, Colorado State University, Fort Collins, CO.
- Botany/Zoology 329 (Herpetology)
 - Botany/Zoology 333 (Introduction to Mycology)
 - Botany/Zoology 310 (Cell and Molecular Biology)
 - Life 102 (Attributes of a Living System)
- 2009-2012 Laboratory Teaching Assistant, Department of Geology and Department of Biology, Carleton College, Northfield, MN.
- Geology 255 (Petrology)
 - Biology 125 (Genes, Evolution, and Development)
 - Biology 126 (Cellular Energetics, Metabolism, and Ecology)

SERVICE

- 2015-present Volunteer Scientist, Letters to a Pre-Scientist program
- 2013-present Manuscript Reviews: *Soil Biology and Biochemistry*, *European Journal of Soil Biology*, *Journal of Plant Nutrition and Soil Science*
- 2013 and 2015 Volunteer Judge, Front Range Student Ecology Symposium
- 2013-2014 Mentoring, Mentor of two undergraduate research assistants
- 2011 Kids for Conservation Volunteer, Northfield, MN

SCIENCE COMMUNICATION

- 2016 School of Global Environmental Sustainability Ignite Biodiversity. 21 April 2016. Ignite Talk.
- 2016 The Sustainability Hour on 90.5 KCSU Fort Collins. 1 March 2016. Interview.
- 2015-present HumanNature Contributor
- Alster, C.J. 22 April 2016. Science advocacy: My day on the hill.
 - Alster, C.J. 29 December 2015. When it comes to soil microbes, everything is NOT everywhere, but does this matter?
- 2014-present EcoPress Contributor
- Alster, C.J. 17 November 2015. Can soil enzymes dance? Interview.
 - Alster, C.J., E. Cubley, and C. Larson. 10 November 2015. A reflection on the use of videos in communication ecology.
 - Alster, C.J., E. Cubley, and C. Larson. 2 October 2015. How can we communication ecology with science videos?
 - Alster, C.J., and E.J. Foster. 12 August 2014. MicroTrop 2014: lessons in international collaboration and research in a developing country.

STUDY ABROAD RESEARCH

- 2012 Geology in New Zealand: Geomorphology and structural geology seminar. Accredited through Carleton College.
- 2010 Round River Conservation Studies in Namibia: Program in Conservation Biology and Policy. Accredited through Utah State University.

PROFESSIONAL MEMBERSHIPS

- 2014-present American Association for the Advancement of Science
- 2011-present American Geophysical Union
- 2011-present Ecological Society of America
- 2016-present Soil Science Society of America