KEITA F DECARLO

Address | Oak Ridge National Laboratory
| 8630 Spallation Drive, Room A219-6453
| Oak Ridge, TN 37830-6455, USA
Phone | (607) 673-9990
Email | decarlokf@ornl.gov
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Education/Appointments

Oak Ridge National Laboratory, Office of Science Researcher 2016 -
Neutron Sciences Directorate, *Supervisor: Hassina Bilheux*
Project title: Novel imaging & modeling methods for coupling the soil-crack-vegetation interface

Princeton University, PhD 2013 -
Civil & Environmental Engineering, *Advisor: Kelly Caylor*
Thesis title: Ecological controls of cracked soil processes in dryland soils

Boston University, BA/MA 2009 - 2013
Environmental Science/Environmental remote sensing & GIS, *Advisor: Nima Shokri*
Thesis title: physicochemical dimensions of crack morphology in desiccating clays

Honors & Awards

Mary & Randall Hack '69 Graduate Award, Princeton Environmental Institute	2017 - 2018
Graduate Research Fellowship, U.S. Department of Energy	2016 - 2017
Francis R. Upton Graduate Fellowship, Princeton University	2013 - 2017
Phi Beta Kappa	2012
Lakshmanan and Chatterjee Book Award in Geography, Boston University	2012
Franklin C. Erikson Prize for Excellence in Geography, Boston University	2011
Tae Min Kim Scholarship, Boston University	2011 - 2013

Refereed Publications

2. **DeCarlo, KF**, and Shokri, N (2014), Salinity effects on cracking morphology and dynamics in 3-D desiccating clays. *Water Resources Research,* 50(4):3052-3072, doi: 10.1002/2013WR014424.
1. **DeCarlo, KF**, and Shokri, N (2014), Effects of substrate on cracking patterns and dynamics in desiccating clay layers. *Water Resources Research,* 50(4):3039-3051, doi: 10.1002/2013WR014466.

Oral Presentations

1. **DeCarlo, KF**, and Caylor, K (2015), Faunal influences on fracture-induced carbon flux dynamics in dryland soils, *EOS Trans AGU*, 95(52), Fall Meet. Suppl., Abstract H12B-6.

Poster Presentations (†current/former undergraduate advisee)

7. **DeCarlo, KF**, and Caylor, K (2016), Linking carbon flux dynamics and soil structure in dryland soils, *EOS Trans AGU*, 96(52), Fall Meet. Suppl., Abstract H13K-1573.
6. **DeCarlo, KF**, and Caylor, K (2016), Faunal drivers of soil flux dynamics via alterations in crack structure, EGU General Assembly, Vienna, Austria.
5. †Krell, N, **DeCarlo, KF**, and Caylor, K (2015), Analysis of biophysical mechanisms of gilgai microrelief formation in dryland swelling soils using ultra-high resolution aerial imagery, *EOS Trans AGU*, 96(52), Fall Meet. Suppl., Abstract NG23B-1782.

4. **DeCarlo, KF**, †Spiegel, M, and Caylor, K (2014), Biological dimensions of crack morphology in dryland soils, *EOS Trans AGU*, 94(52), Fall Meet. Suppl., Abstract H31D-646
3. **DeCarlo, KF**, and Shokri, N (2013), Salinity effects on cracking morphology and dynamics in desiccating clays, *EOS Trans AGU*, 93(52), Fall Meet. Suppl., Abstract H23F-1338
2. **DeCarlo, KF**, and Shokri, N (2012), Cracking dynamics and morphology of desiccating clay overlying a granular substrate, *EOS Trans AGU*, 92(52), Fall Meet. Suppl., Abstract NG13B-1526
1. **DeCarlo, KF**, and Shokri, N (2012), Substrate effects on crack dynamics and patterns in desiccating clay. 4th International Conference on Porous Media (Interpore), West Lafayette, Indiana, USA.

Teaching Experience

Co-Instructor – Water, Energy, and Ecosystems (undergraduate field course) 2016
Mpala Research Center, Laikipia, Kenya

Teaching assistant – Water, Energy, and Ecosystems (undergraduate field course) 2015
Mpala Research Center, Laikipia, Kenya

Teaching assistant – Fundamentals of Environmental Studies: Population, Land Use, Biodiversity, and Energy (undergraduate course) 2014, 2015
Princeton University, Princeton, NJ, USA

Research Support

Allocation of Nuclear Reactor Time
US Department of Energy, Neutron Imaging beamline, Oak Ridge National Laboratory (ORNL)
14 days total (2014-2017)

Academic Service

Undergraduate mentoring (†thesis advisee; *laboratory/‡field research assistant)
Princeton University - S Jacobson†,* (2016-2017), V Amaral‡ (2015), M Spiegel‡ (2014)
Columbia University - A LoPresti† (2015-2016), V Strokopytova* (2015)
Others - N Krell‡,* (College of the Atlantic, 2015)

Journal reviewer contributions: New Phytologist, Soil Science Society of America Journal, Water Resources Research

Professional Societies: American Geophysical Union (AGU), Ecological Society of America (ESA), European Geophysical Union (EGU)