Natasha T. Krell

Department of Geography
1832 Ellison Hall
Santa Barbara, CA 93106-4060

nkrell@ucsb.edu
https://caylor.eri.ucsb.edu
+1-805-215-6191

Education

The University of California at Santa Barbara, USA — 2016 – Present
Ph.D. candidate in Geography
Advisor: Dr. Kelly K. Caylor
Research Interests: Dryland hydrology and agriculture, geostatistics, human impacts

College of the Atlantic (COA), Bar Harbor, ME, USA — 2014 – 2016
B.A. in Human Ecology with foci in geoscience and botany
Advisor: Dr. David P. Feldman

Smith College, Northampton, MA, USA — 2012 – 2014
Majored in environmental geosciences
Advisor: Dr. Drew Guswa

Honors and Awards

2019: Environmental Solutions Fellowship, *Schmidt Family Foundation*
Science, Mathematics, and Research for Transformation Scholarship, *DoD, USA*

2017: Finalist for Fulbright Fellowship to Kenya, *Institute of International Education*
Graduate Scholars Program, *UCSB Graduate Division*
NASA Remote Sensing Hydrology Workshop Student Travel Grant, *Consortium of Universities for the Advancement of Hydrologic Science*

2016: Maine Space Grant Consortium Award, *NASA*

2015: Shelby Cullom Davis International Advanced Studies Award, *COA*
Kathryn W. Davis Global and Civic Engagement Fund Award, *COA*
Maine Space Grant Consortium Award, *NASA*
Presidential Scholarship, *COA*
Sierra Club Coalition SPROG Scholarship, *COA*

2014: International Student Travel Grant, *American Geophysical Union*
Rothschild Student-Faculty Collaboration Grant, *COA*
Presidential Scholarship, *COA*
Sierra Club Coalition SPROG Scholarship, *COA*

2013: Len Assante Scholarship, *National Groundwater Association*
Environmental Leadership Grant, *Henry David Thoreau Foundation*

Research Experience

Graduate Student Researcher, Earth Research Institute — August 2016 – Present
Mentors: Dr. Kelly Caylor & Dr. Tom Evans
Deployed over 150 Arable Mark environmental sensors in Kenya and Zambia. Co-ordinated two household surveys in Kenya. Managed and supervised eight Kenyan enumerators between May and August 2018. Co-ordinated household survey of 600 farmers in the Mt. Kenya region to understand climate variability impacts, adaptive agricultural management, and use of mobile phones for agriculture. Led pilot survey of 160 households in Rumuruti, Kenya in August 2018 to better understand food security and nutrition in an urbanizing context.

Research Internship, Mpala Research Centre, Laikipia, Kenya June – Aug. 2015
Mentor: Dr. Kelly Caylor
Collected data for undergraduate thesis on geostatistical analysis of gilgai microrelief formation using UAV-based imagery. Assisted the Princeton Ecohydrology Lab's ongoing projects including troubleshooting and deploying Pulsepod (Arable Mark) environmental sensors.

Independent Research, College of the Atlantic, USA Sept. 2014 – June 2016
Mentor: Dr. Nishanta Rajakaruna
Investigated edaphic-climatic influences on the ecology and evolution of two common herbaceous perennials found on serpentine and granite outcrops of Deer Isle, ME. Conducted a reciprocal transplant experiment with *H. perforatum* and *A. millefolium* to test for local adaptation. Organized citizen scientists to monitor plant phenology.

Research Assistant, Acadia National Park, USA April – June 2015
Mentor: Caitlin McDonough MacKenzie
Monitored spring leaf-out and flowering phenology in Acadia National Park to assist study for doctoral dissertation in Botany at Boston University.

National Science Foundation Research Experience for Undergraduates, University of Arizona, USA June – Aug. 2014
Mentor: Dr. Shirley (Kurc) Papuga
Conducted research analyzing flowering phenology of *Larrea tridentata* (creosotebush) using MATLAB digital image processing and meteorological and flux tower data at the Santa Rita Experimental Range. Co-authored manuscript in preparation.

Publications

Boyd, R. S., **Krell, N.T.,** and Rajakaruna, N. 2016. Extreme Environments. In: Oxford Bibliographies in Ecology Ed. David Gibson. New York: Oxford University Press.

Oral Presentations

Krell, N.T. "Muddling through with muddy boots: Conducting Fulbright research in Kenya." Invited talked for Climate Change Seminar Series (2019). College of the Atlantic, Bar Harbor, ME.

Krell, N.T., Evans T.P., Estes, L.D., and Caylor, K.K. "Real-time monitoring of smallholder farmer responses to intra-seasonal climate variability in central Kenya." American Geophysical Union Fall Meeting (2017). New Orleans, LA.

Peer-Reviewed Poster Presentations

Krell, N.T., Negoita, L., and Rajakaruna, N. "Little evidence for local adaptation to soil type by Achillea millefolium and Hypericum perforatum from Deer Isles, Maine, USA." 9th International Conference on Serpentine Ecology (2017). Tirana + Pogradec, Albania.

Krell, N.T., DeCarlo, K.F., and Caylor, K.K. "Analysis of Biophysical Mechanisms of Gilgai Microrelief Formation Using Ultra-High Resolution Aerial Imagery." American Geophysical Union Fall Meeting (2015). San Francisco, CA.

Krell, N.T., Dawson, H.R, and Rajakaruna, N. "Edaphic-climatic influences on the ecology and evolution of plants found on serpentine and granite outcrops of Deer Isle, Maine." Northeast Natural History Conference (2015). Springfield, MA. **Krell, N.T.,** Dawson, H.R., and Rajakaruna, N. "Are yarrow and St. John's wort locally adapted to serpentine and granite outcrops on Deer Isles, ME?" Northeast Botanical Club 120th Anniversary Research Conference (2015). Smith College, Northampton, MA.

Krell, N.T., Papuga, S.A., Kipnis, E., Nelson, K. "Dynamic Pulse-Driven Flowering Phenology in a Semiarid Shrubland." American Geophysical Union Fall Meeting (2014). San Francisco, CA.

Krell, N.T., Papuga, S.A., Kipnis, E., Nelson, K. "Dynamic Pulse-Driven Flowering Phenology in a Semiarid Shrubland." Research Insights in Semiarid Ecosystems (RISE) Symposium (2014). Tucson, AZ.

Krell, N.T., Papuga, S.A., Kipnis, E., Nelson, K. "Dynamic Pulse-Driven Flowering Phenology in a Semiarid Shrubland." Phenology Research and Observations of Southwest Ecosystems (PROSE) Symposium (2014). Tucson, AZ.

Krell, N.T., Papuga, S.A., Kipnis, E., Nelson, K. "Dynamic Pulse-Driven Flowering Phenology in a Semiarid Shrubland." Undergraduate Research Opportunities Consortium (UROC) Symposium (2014). Tucson, AZ.

Work Experience

Resident Advisor, College of the Atlantic, USA Sept. 2015 – June 2016 Tasked with mentoring and programming for undergraduates to enhance the first year experience at College of the Atlantic. Trained in emergency response and active community building.

Internship, Energy Foundation, Beijing, China May – June 2013 Received Thoreau Foundation grant to complete an internship in environmental leadership. Worked for the Energy Foundation's China Sustainable Transportation Center. Collaborated with international stakeholders in the Qinglong EcoDistrict Project. Wrote report to improve Non-Motorized Transportation in Chongqing and Shanghai.

Teaching Experience

Teaching Assistant, GEOG 115C, U.C. Santa Barbara, USA Spring 2019
Teaching Assistant, GEOG 3A, U.C. Santa Barbara, USA Fall 2017
Teaching Assistant, EEMB 120, U.C. Santa Barbara, USA Summer 2017
Teaching Assistant, GEOG 167, U.C. Santa Barbara, USA Spring 2017

Community Outreach and Service

Rising Stars Mentor, Wedu Global Foundation June 2017 – Present
Mentor Nepali high school student by facilitating leadership development via video conference sessions once a month.

Technical Committee on Ecohydrology, AGU Jan. 2016 – Present
Student representative for American Geophysical Union (AGU) Ecohydrology Technical Committee.

Hydrology Section Student Subcommittee, AGU Jan. 2015 – Jan. 2017
Elected for two-year position on the American Geophysical Union's Hydrology Section Student Subcommittee. Organizer of 2015 Student Conference and co-convener of 2015 and 2016 Social Dimensions of Geoscience lightning talks.

Admissions Committee, College of the Atlantic Dec. 2014 – April 2015
Served as undergraduate representative on admissions committee at College of the Atlantic. Reviewed applications to admit transfer and first-year students to College of the Atlantic's class of 2019.

Tutor, Smith College, USA Feb. – Nov. 2013
Tutored at-risk middle school youth in Connections After School Program in Springfield, Massachusetts.

Languages and Technical Skills	*Spoken*	Spanish (fluent), Kiswahili (advanced), Mandarin (intermediate)
	Computational	Python (intermediate), MATLAB (intermediate), R (intermediate), QGIS (intermediate), SPSS (intermediate), LaTeX
	Design	Adobe Photoshop, Illustrator, InDesign