PhD Opportunity: Post-fire larch recruitment in Siberia -- field work and statistical modeling
University of Florida, Gainesville, Department of Biology
Advisor: Jeremy Lichstein (https://people.clas.ufl.edu/jlichstein/)
Collaborators: Heather Alexander (Mississippi State University), Jennie DeMarco (Western State Colorado University), Michael Loranty (Colgate University), Michelle Mack and Rebecca Hewitt (Northern Arizona University), Ryan McEwan (University of Dayton)

Project Summary:
Larch (Larix) forests are a widespread boreal forest type and overlie extensive areas of Arctic permafrost, storing substantial amounts of carbon (C) both above and below ground. Although larch is a fire-dependent tree species, increased fire activity may limit larch forest recovery and potentially trigger forest loss and a shift to alternative ecosystem types dominated by shrubs or grasses. Forest loss could have large consequences for climate because of changes in C storage and land-surface albedo (reflection of solar radiation). The overall objectives of this project are to better understand (1) the factors affecting post-fire larch recruitment success vs. failure in Siberia, and (2) the consequences of larch recruitment failure for climate feedbacks via changes in C storage and albedo. More information on this NSF-funded project is available here: https://www.nsf.gov/awardsearch/showAward?AWD_ID=1708129&HistoricalAwards=false

Photos from previous field work at Siberia study sites:
PhD Opportunity:
This NSF-funded project provides four semesters of Research Assistantship (RA) support and four summers of research support for a PhD student to participate in field work in Siberia (summer 2018 and summer 2019; each trip will last one month), to gain training and experience with statistical models, and to develop statistical models of larch recruitment using project data. Key objectives of the statistical modeling are to quantify the roles of seed production, seed dispersal, and edaphic or other abiotic factors in determining post-fire larch (*Larix*) recruitment success or failure. Beyond the four semesters of NSF-funded RA support, funding for additional semesters (to complete a 4-5 year PhD program) are available from the UF Biology Department and the UF School of Natural Resources and the Environment (SNRE). These non-NSF funding sources provide freedom to develop independent PhD research topics, in addition to the NSF-funded research.

Examples of related work (available at https://people.clas.ufl.edu/jlichstein/publications/):
(2) Caughlin, T.T.G, J. Ferguson, J.W. Lichstein, S. Bunyavejchewin, and D. Levey. 2014. The importance of long distance seed dispersal for the demography and distribution of a canopy tree species. Ecology 95:952-962. [This paper is focused on a tropical tree species, but many of the ideas and methods are relevant to the larch project.]

Qualifications:
(1) Interest in learning advanced statistical modeling. (2) Ability and desire to work as part of a team at remote field sites in Siberia under sometimes challenging conditions (biting insects, inclement weather, etc.). (3) Field and classroom experience in ecology or a related field are preferred, but interested candidates who lack this experience are still encouraged to apply if they fulfill qualifications 1 and 2.

Start date: June 2018 (travel to Siberia); PhD program begins Fall semester 2018 (classes start in August)

Application instructions:
Before submitting an official application to UF, prospective students are strongly encouraged to contact Jeremy Lichstein (jlichstein@ufl.edu) to express their interest in this opportunity. Please email jlichstein@ufl.edu with subject “PHD LARCH” and include (1) a few paragraphs explaining why you are interested in the project and why you feel it is a good fit for you; (2) a brief explanation of whether or not you anticipate any problems obtaining a Russian visa; (3) your CV; and (4) contact information for two references familiar with your academic work or research potential. This preliminary communication is not an official application to graduate school, but is just meant to develop an open line of communication with your potential PhD advisor prior to submitting an official application. Official applications should be submitted to the UF Biology Department, the UF School of School of Natural Resources and the Environment (SNRE), or both. Please visit the Biology and SNRE graduate program websites for application deadlines and other details.

Minorities, women and members of other underrepresented groups are strongly encouraged to apply. The University of Florida is an equal opportunity institution.