Funded PhD student positions: Forest disturbance, carbon accounting, and geospatial patterning in coastal Alaskan forests

Start date: 1 January 2021 or Fall 2021 (negotiable)
Buma lab: www.brianbuma.com

An exciting new project studying the role of past forest management and natural disturbances in constraining or promoting future conservation, harvest, and carbon-market activities is starting in 2021. There is one PhD opportunity to work on this exciting project at the University of Colorado in Denver, Colorado.

The project will quantify carbon stocks at a high spatial resolution across the Alaskan and Canadian coast, one of the most carbon dense forests in the world. Working with professionals and academics in the United States and Canada, the student will build spatial models from pre-existing data using machine learning methods. They will also quantify spatial patterns of natural and anthropogenic disturbances. The hypothesis is that historical management patterns constrain future carbon market utilization, with direct impacts on the conservation and management of the region.

This student will work closely with the partner modeling team at Portland State University and North Carolina State University to calibrate and run scenarios for future carbon storage on the landscape under various conservation and management scenarios into the future. This will be the first high resolution carbon mapping and modeling of this globally significant region.

Finally, the student will have the opportunity to work closely with a private carbon-accounting firm that specializes in carbon markets and carbon valuation (e.g. selling credits through the California Carbon Exchange) to estimate actual and potential values.

Potential students interested in biogeography, programming, geospatial analysis, and carbon markets are welcome to apply. The project pays approximately $29,000/12 months plus tuition and health benefits. It is located at the University of Colorado, Denver campus. Students will be expected to TA for the first two years; a teaching release is included in the third year. The project is currently funded for three years.

The successful candidate will join our strong research group led by Drs. Brian Buma (CU), Melissa Lucash (PSU), and Rob Scheller (NC State) and senior personnel Drs. David D'A'Amore (US Forest Service; Juneau Alaska), Caren Dymond (Senior Research Scientist, BC Gov.), Sari Saunders (Research Head, Coastal Region of BC), Allison Bidlack (Alaska Coastal Rainforest Center), and Brian Kleinhennz (VP of Operations, TerraVerde, AK and WA).

Preferred qualifications:
- M.S. in Ecology, Forestry, Geography or associated fields
Â· Programming ability in R and/or ArcMap
Â· Excellent writing skills
Â· Ability to work closely with remote partners, including frequent phone calls and personal visits.

Please submit a cover letter, CV, and list of three references to Dr. Brian Buma by email (brian.buma@ucdenver.edu) with the subject line “PhD student application - southeast Alaska.” Review of the applications will begin 1 September 2020 and continue until filled. Note the parallel student position, focused on the model programming, is being advertised through Dr. Lucash at PSU.

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Buma Lab Website