Postdoctoral Research Associate: Carbon Balance in Grazing lands

A fulltime postdoctoral position is available in the Agroecology Lab (https://www.archbold-station.org/programs/agroecology/) at Archbold Biological Station in Lake Placid, FL(https://www.youtube.com/watch?v=y6_WhY3aZB0 , https://www.youtube.com/watch?v=rGV_G6dnYHg). The position can be on-site or remote.

The position will be in close collaboration with the UF Range Cattle Research and Education Center in Ona, FL. Archbold Biological Station (http://www.archbold-station.org/) and associated Buck Island Ranch, along with partners at University of Florida are a member of the USDA's Long-term Agroecosystem Research (LTAR) Network (https://ltar.ars.usda.gov/).

The successful candidate will be jointly supervised by Dr. Betsey Boughton from Archbold and Dr. Maria Silveira at Univ. of FL.

The position entails literature review, data gathering and synthesis, and meta-analysis. The post-doctoral researcher will contribute to a comprehensive understanding of the soil carbon sequestration potential, net ecosystem carbon balance and the greenhouse gas net balance of grazing lands across climatic regions, soil and vegetation type. This is of critical importance in identifying and promoting mitigation opportunities to reduce overall US beef carbon footprint while also increasing productivity and building resilience to climate change. Specifically, this work will synthesize across the LTAR grazing lands to quantify significant sources and sinks of greenhouse gases (CO_2, N_2O, CH_4) at a broad scale. This project is part of a larger effort in collaboration with the USDA Climate Hubs to work on climate mitigation potential of Climate Smart Agriculture and Forestry practices and help link LTAR science with Hub outreach capabilities. Land grant university Cooperative Extension System will also be engaged. Through an interdisciplinary teamwork approach, this project will synthesize and translate current scientific information and data to better understand and quantify the impacts of climate smart practices in grazing lands on soil carbon sequestration, GHG balance, and agricultural productivity.

Objectives:

1. Collaborate with LTAR scientists and the USDA Climate Hubs on synthesizing soil carbon sequestration potential and carbon stocks of grazing land ecosystems across climatic regions, soil, vegetation type, and management strategies in the US
2. Calculate the net ecosystem C balance (NECB) and net greenhouse gas balance at several LTAR grazingland sites.
3. Data will be from a combination of sources including eddy covariance, static chambers, and/or existing literature at each site.
4. Based on Obj 1, 2, and 3, compare and contrast carbon regulation (eg. NECB, soil C sequestration, GWP) provided by grazing land sites across regions and climate zones.

5. Produce at least 2 peer-reviewed manuscripts (multi-authored) and outreach materials. Create a metadata and linked archived database accessible to LTAR and Climate Hubs.

This position is grant funding-dependent. Currently, we have been notified of funding awarded for a two-year position, although this funding not yet contracted. The initial PostDoc contract, depending on funding, will be one year, and renewable depending on available work, continued funding, and performance. The primary responsibilities of this position include:

Compilation of data (~15%)

In collaboration with the PIs and LTAR scientists, and LTAR working groups (e.g. eddy covariance working group), compile data needed to calculate net carbon balance and net GHG across LTAR grazing land sites.

Data analysis (~25%)

Analyze data using rigorous statistical methods and present results at lab meetings and project meetings.

Develop carbon balance and net GHG equations tailored to several LTAR grazing land sites and calculate net ecosystem carbon balance and net GHG (~40%)

Lead the development of carbon balance and net GHG equations taking into account management systems across the diversity of LTAR grazing land sites. There will be opportunities to ask additional questions of interest to the Postdoctoral Associate. The Postdoctoral Associate will have support from both PIs, LTAR scientists, Climate Hub directors, and other collaborators.

Publishing and presenting research results (~25%)

Prepare and submit multi-site, joint-authorship manuscripts for publication in top tier peer-reviewed scientific journals; present results at professional meetings, conferences, andLTAR meetings; prepare fact sheets and other relevant outreach materials.

QUALIFICATIONS:

Ph.D. in biology, soil, ecology, biogeochemistry, or related field. Previous experience with meta-analysis and systematic reviews is required. Previous experience ingrazing land science knowledge of the relevant literature and research methods is desirable. Ability and desire to work collaboratively and to also work independently. High levels of project leadership, time management, communication, and writing skills.

TO APPLY:

Applicants should submit a cover letter detailing their relevant background and experiences, a CV, and names and contact information for three professional references to eboughton@archbold-station.org. Review of applications will begin immediately and continue until the position is filled. Please contact PI Betsey Boughton (eboughton@archbold-station.org) with any questions.

STARTING DATE: Sept - Nov 2023 (flexible).

SALARY: $50,000 per annum, benefits include:

- **Paid vacation, sick leave, and holidays**
- **Health, dental, vision, life and long-term disability insurance effective immediately**
- **Retirement plan effective immediately with matching employer contributions after one year**

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Please fill out this anonymous survey to contribute to our applicant database. Your responses will *not* be associated with your application or shared with hiring managers."

- https://docs.google.com/forms/d/e/1FAIpQLScFZE7lfwmFAqxVPujpC8HdeDH-5w2ZsUo2RBSawJ1J34G1pA/viewform