

Trace Gas Biogeochemistry Group



Understanding the response of carbon, nitrogen, and other element cycles to climate and land use change.

WHO WE ARE



Ruth Varner

PhD Earth Science

I measure methane emissions from Arctic ecosystems.



Alix Contosta

PhD Environmental Science

I study ecosystem carbon and nitrogen cycles in the forests and fields of New England.



Florencia Fahnestock

PhD Earth Science

I study perturbations in the biogeochemical cycling of heavy metals from permafrost thaw



Sadid Hossain

PhD Candidate, Natural Resources and Earth System Science

I study the effects of seaweed-fed dairy cow manure on soil greenhouse gas emissions and biogeochemical processes.



Apryl Perry

MSc, Earth Sciences: Geochemical Systems

I measure CH₄ and CO₂ gas fluxes in Arctic and forested ecosystems and support long-term field research and accessible science through collaboration with educators and students.



Peter Tansey

MS Student, Natural Resources: Ecosystem Science

I measure soil carbon stocks in declining eastern hemlock forests.



Cheristy Jones

PhD Candidate, Earth and Environmental Science

I study greenhouse gas emissions from Arctic freshwater systems.



Brendan Murphy

MS Student, Natural Resources: Ecosystem Science

I study the effects of livestock grazing on soil carbon and nitrogen.



Chelsea Oti

MS Student, Earth Sciences: Geochemical Systems

I study microbial communities involved in methane oxidation in Arctic Lake systems.



Jannatul Ferdous

PhD Student, Earth and Environmental Science

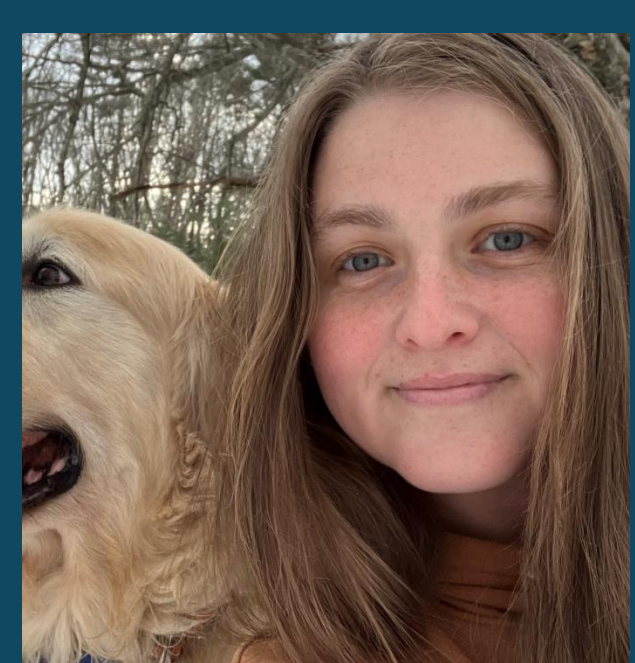
I study greenhouse gas emissions and soil carbon dynamics across different land-use systems.



Claudia Guillot-Wallace

MS Student, Earth Sciences: Geochemical Systems

I study permafrost thaw and hydrologic change in Arctic Sweden using strontium isotopes.



Shannon Van Hise

MS Student, Natural Resources: Ecosystem Science

I study the efficacy of forestry arming techniques in preserving and extending frozen ground conditions during winter logging operations.



Alanna A. Nenadich Álvarez

MS Student, Earth Sciences: Geochemical Systems

I study Arsenic mobilization responding to permafrost thaw in subarctic peatlands.

LEARN MORE AT:

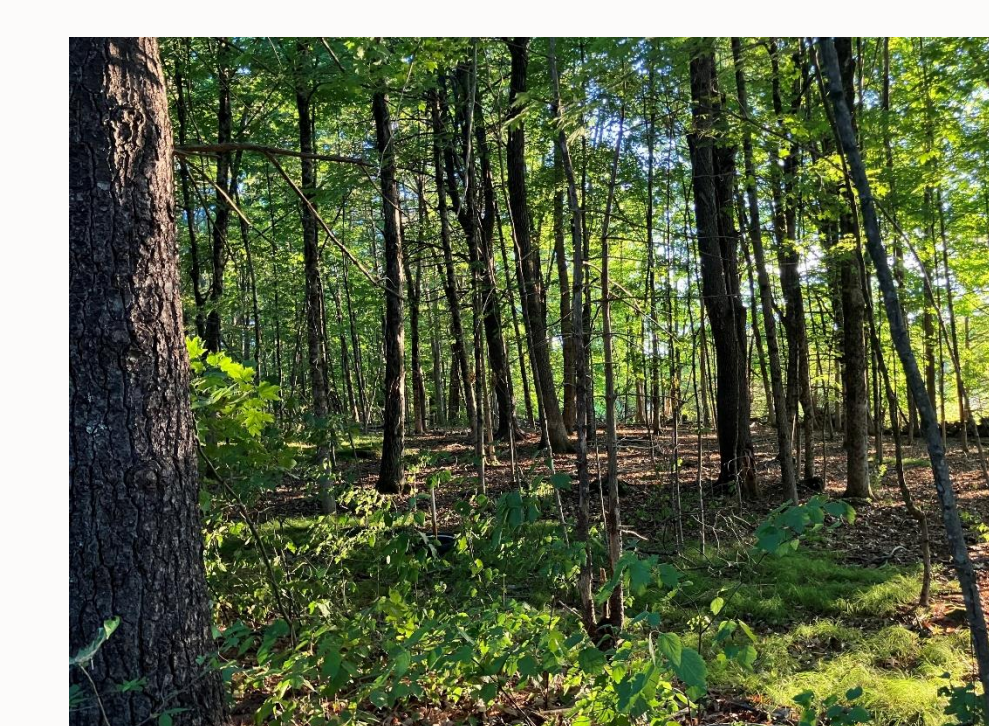
<https://eos.unh.edu/earth-systems-research-center/research-earth-systems-research-center/about-trace-gas-biogeochemistry-group>



OUR STUDY SYSTEMS



Agricultural



Forested



Urban

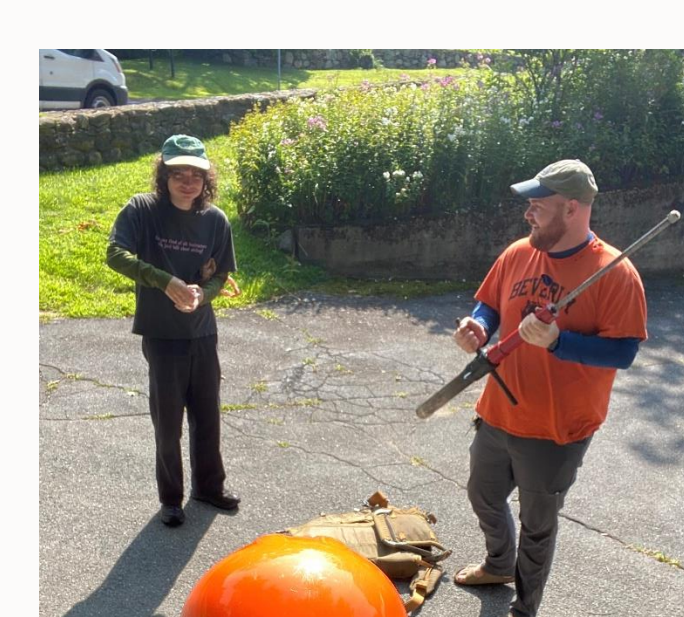


Arctic



Wetlands

OUR APPROACH



IMPACT & OUTREACH



Address both fundamental scientific questions and societally relevant challenges.



Communicate research in creative ways to increase the broader impact of our work.



Promote discovery through mentorship, outreach, and building a diverse, inclusive research community.



Collaborate with stakeholders, the public, educators, and students.