TAYLOR BACON

taylor.bacon@colostate.edu | 505.231.8086 (Cell)
Fort Collins, CO

EDUCATION

PhD, Soil & Crop Sciences, Colorado State University — Aug 2022 – Present
Fort Collins, CO

- Coursework includes: Modeling Ecosystem Biogeochemistry, Foundations for Carbon/Greenhouse Gas Management, Forest and Range Soils, Tools for Food-Energy-Water Systems Analysis, Soils and Global Change, Carbon Finance

PhD Course, Swedish University of Agricultural Sciences — Jun 2023
Uppsala, Sweden

- Two-week intensive course "Exploring the dynamics of soil organic matter through process-based modeling"

B.S.E, Chemical & Biological Engineering, Princeton University — Jun 2019
Princeton, NJ

- Energy & Environmental Technology Track with a minor in Sustainable Energy
- Senior Thesis: Bio-jet Fuels via Fischer-Tropsch Synthesis: Process simulation and scale-up analysis for decarbonizing aviation in the United States.
- Coursework includes: Chemistry of the Environment, Global Environmental Issues, Energy for a Greenhouse-Constrained World, Fundamentals of Biofuels, Chemical Reaction Engineering, Intro to Environmental Engineering

RESEARCH

Graduate Research Assistant, Colorado State University — Aug 2022 - Present
Fort Collins, CO

- Collaborated with a team of solar energy engineers, animal scientists, ranchers, ecosystem modelers and ecologists on a three-year project on co-locating regenerative cattle grazing and large-scale solar energy, funded by the Department of Energy Solar Energy Technologies Office.
- Created detailed research plan and experimental design for studying the impacts of solar photovoltaic modules on ecosystem function, as well as the impacts of regenerative grazing as a vegetation management strategy compared to conventional mowing management.
- Collected nearly 200 soil samples and 200 vegetation samples and installed nearly 100 microclimate sensors over the course of a week.
- Led a team of six student interns for processing of soil samples at the collection site, and lead lab analysis of soil and vegetation samples.
- Coordinated and oversaw lab analysis of soil and vegetation samples with two undergraduate lab assistants.

Senior Thesis, Princeton University Apr 2018 - May 2019
Princeton, NJ

- Reviewed relevant literature to understand the scope of existing work in the field of bio-jet fuel production and inform technical process design.
- Designed and modeled a chemical process to convert forestry residue into bio-jet fuel using the chemical engineering modeling software Aspen Plus.
- Used modeling results to inform an economic and process scale-up analysis, as well as evaluate the environmental impact of the process.
- Connected with researchers at the National Renewable Energy Lab to discuss modeling and design and visited existing bio-fuel production plant in Iowa to understand operational challenges and meet with facility engineers.

PROFESSIONAL EXPERIENCE

Analyst, U.S. Climate & Clean Air, Environmental Defense Fund Aug 2021 – Aug 2022
Boulder, CO

- Collaborated with consultants and partner organizations on modeling to inform power sector regulatory and policy strategy.
- Developed strategy, lead coalition outreach, collaborated with EDF health scientists, and designed and executed analytical reports for campaign to strengthen the National Ambient Air Quality Standards.

High Meadows Fellow, Environmental Defense Fund Sep 2019 - Aug 2021
Washington, DC & Boulder, CO

- Analyzed data from technical EPA rulemakings and authored blogs posted on the EDF website to support legal preservation of core air quality protections under federal law.
- Contributed to technical comments, drafted talking points, testified at public hearings, and met with the White House Office of Management and Budget to advocate for stronger National Ambient Air Quality Standards.
- Researched public health, economic, and climate impacts of state level carbon pollution limits and drafted fact sheets, blogs, graphics, and technical comments to support state climate policy advocacy in Virginia, New Mexico, and Pennsylvania.
- Tracked power company climate commitments and served on the sustainability advisory group of a large utility to advocate for stronger climate action.
- Analyzed emissions data to determine areas of concern for environmental justice under state-level power sector carbon trading programs.

Streicker Fellow, World Bioenergy Association May - Aug 2018
Stockholm, Sweden

- Received funding through the Streicker Fellowship to partner with an international organization for a summer. Authored a comprehensive report on liquid biofuels to provide background information to a global audience of more than 10,000 policy makers, researchers, and companies, collaborating with

over two dozen experts from academia and industry from across the biofuel sector to review and edit the report.

Climate Fellow, Climate Foundation May - Aug 2017
Woods Hole, MA

- Collaborated with three other Climate Fellows to design, prototype and test a marine permaculture system for improving ecosystem health, sequestering carbon and creating a sustainable food and material source.

Engineering Intern, Souder, Miller & Associates May - Aug 2016
Santa Fe, NM

- Supported Professional Engineers on a range of water system projects across Northern New Mexico by tracking material and cost estimates, contributing to and editing Preliminary Engineering Reports submitted to clients and the State of New Mexico, attending meetings with clients and managing communication, and following construction progress and meeting with contractors on site.

TEACHING & MENTORSHIP

Guest Lecture, "Agrivoltaics: Multi-use solar PV systems & solutions at the food/energy nexus" *ESS 501: Principles of Ecosystem Sustainability*. Colorado State University. Fall 2024

Guest Lecture, "Food & Energy" *SOCR 171: Environmental Issues in Agriculture.* Colorado State University. Fall 2024

Teaching Assistant, Colorado State University Fall 2024
Fort Collins, CO

- Served as a teaching assistant for *SOCR 171: Environmental Issues in Agriculture.*
- Responsible for teaching a recitation section of 20 undergraduate students, including lesson planning, facilitating classroom discussions, and grading weekly assignments.

Internship Supervisor, Colorado State University Nov 2023-May 2024
Fort Collins, CO

- Supervised and advised senior undergraduate student in completion of literature review and research protocol proposal for completion of Ecosystem Science & Sustainability degree requirements.

Guest Lecture, "Agrivoltaics: Multi-use solar PV systems & solutions at the food/energy nexus" *ESS 501: Principles of Ecosystem Sustainability*. Colorado State University. Fall 2023

Undergraduate Teaching Assistant, Princeton University Sep 2016 - May 2017
Princeton, NJ

- Invited by faculty work as an undergraduate teaching assistant for the Freshman Seminar Philosophical Analysis with Argument Maps after completing the course the previous fall.
- Assisted with lesson plans and course structure and lead in-class exercises in addition to working with pairs of students during class.

- Evaluated student work and wrote up to 1,500 words of feedback for two to three students each week.
- Held one-on-one meetings with students to discuss feedback on their work, answer questions, and address challenges or points of confusion.

GRANTS, SCHOLARSHIPS & FELLOWSHIPS

Office of the Vice President for Research Graduate Fellow 2024-2025

Graduate Travel Stipend for participation in the 2023 National Science Foundation Research Traineeship (NRT) Annual Meeting in Tempe, Arizona

InTERFEWS Fellow Aug 2022

- Funded trainee in the Interdisciplinary Training, Education and Research in Food-Energy-Water Systems (InTERFEWS) Program at Colorado State University

MEDIA & PUBLIC ENGAGEMENT

METER Group, Inc. "Ep. 27: The Battle for Earth: Cattle vs. Solar." *We Measure the World* [Audio Podcast]. Aug 22, 2023. https://www.metergroup.com/en/meter-environment/podcast/episode-27-battle-earth-cattle-vs-solar-0

HONORS & AWARDS

Michelle Goudie '93 Senior Thesis Award Jun 2019

Andlinger Center Senior Thesis Prize in Energy and the Environment Jun 2019

Sigma Xi, Scientific Research Honor Society 2019

Tau Beta Pi, Engineering Honor Society 2018

PROFFESIONAL AFFILIATIONS

Society of Range Management
American Geophysical Union

TRAINING & PROFESSIONAL DEVELOPMENT

Employing Model-Based Reasoning in Socio-Environmental Synthesis (EMBeRS) Aug 2023
Fort Collins, CO

- Week-long intensive training in interdisciplinary collaboration and stakeholder engagement.

Written Communication Workshop May 2023
Fort Collins, CO

- Full day workshop on effective written science communication

VOLUNTEER & EXTRACURRICULAR EXPERIENCE

Community Engagement Board Member, Princeton U. Energy Association 2017 – 2019

Project Leader, Princeton University Eco-Reps 2016 - 2019

Climbing Wall Staff, Princeton University Outdoor Action 2017 – 2019

PRESENTATIONS & POSTERS

Oral Presentations

Co-Presenter. (2024, January). *Agrivoltaics on the Range: An Interdisciplinary Team Investigates How Solar Energy Generation and Ranching Go Hand in Hand.* Presented at Society of Range Management Annual Meeting, Sparks, NV.

Presenter. (2023, July). *Cattle Tracker: Integrated PV System Design and Management Platform for the Co-Optimization of Regenerative Cattle Grazing and PV Solar Generation.* Presented at Colorado State University Agrivoltaics Lunch & Learn, Denver, CO.

Presenter. (2023, August). *CattleTracker: Understanding the potential of a regenerative grazing & solar-PV dual-use system.* Presented at the InTERFEWS Annual Meeting, Fort Collins, CO.

Poster Presentations

Presenter. (2024, December). *Results from One Year of Integrated Research: Ecosystem Dynamics in an Agrivoltaic Grazing System*. Presented at the American Geophysical Union Annual Meeting, Washington, DC.

Presenter. (2024, June). *Ecosystem Outcomes & Carbon Dynamics in Agrivoltaic Grazing Systems.* Presented at the World Agrivoltaics Conference, Denver, CO.

Presenter. (2023, November). *Understanding ecosystem benefits of regenerative grazing within a solar array*. Presented at the Colorado State University Graduate Student Showcase, Fort Collins, CO.

Presenter. (2023, September*). Understanding multi-use land management systems with regenerative grazing and solar PV*. Presented at the Colorado Agrivoltaics Symposium, Denver, CO.

PUBLICATIONS

Bacon, Taylor, Timothy Ohlert, Christopher Toy, J. Alexander Siggers, and Matthew A. Sturchio. "Network Science Can Improve the Sustainable Development of Solar Energy." Environmental Research: Energy 1, no. 4 (December 2024): 043002. https://doi.org/10.1088/2753-3751/ad99dc.

BLOG POSTS

Panels, Plants, and People: Five Questions in the World of Agrivoltaics Research, December 31,2024, Colorado State University, School of Global Environmental Sustainability Human Nature Blog

Driving the electric vehicle transition: auto companies and states step up to lead, April 29, 2021, EDF Climate 411 Blog

Trump administration decision on soot ignores science, risks American's health, December 7, 2020, EDF Climate 411 Blog

The Trump administration's air toxics loophole would intensify environmental injustice, May 11, 2020, EDF Climate 411 Blog

Power company commitments to cut carbon pollution are an important step for our climate and health. Here's what we need next, May 5, 2020, EDF Climate 411 Blog

EPA data emphasizes danger of Trump Administration's "air toxics loophole," February 19, 2020, EDF Climate 411 Blog

The pollution-enabling impacts of the Clean Power Plan "replacement," October 30, 2019, EDF Climate 411 Blog

PROFESSIONAL SERVICES

Peer Review:

- Environmental Research Letters (2024)
- Environmental Research: Energy (2024)
- American Chemical Society (2024)