Sustainability Fellowship
Evaluating Upstream and Downstream Carbon Emissions
SIMAP Project in the UNH Sustainability Institute
Durham, NH

About the Sustainability Fellows Program:
UNH Sustainability Fellowships pair exceptional students from across the U.S. with municipal, educational, corporate, and non-profit partners in New England to work on transformative sustainability initiatives each summer. Sustainability Fellows undertake challenging projects that are designed to create an immediate impact, offer a quality learning experience, and foster meaningful collaboration. Fellows work on-site with their mentors at partner organizations during the summer, supported by a network of Fellows, partners, alumni, and the UNH Team. Graduate students, exceptional undergraduate students, and recent graduates from any accredited college or university are eligible to apply.

A detailed description of one Fellowship follows. To learn more about the other Fellowships offered this year, and for application instructions, see: www.sustainableunh.unh.edu/sustainability-fellows.

About the Host Organization:
SIMAP (Sustainability Indicator Management and Analysis Platform; www.unhsimap.org) is a web-based tool for calculating campus carbon and nitrogen footprints. Launched in November 2017 by the UNH Sustainability Institute (UNHSI), SIMAP is the current iteration of the Excel-based Campus Carbon Calculator™ (CCC) that was developed by UNH and a nonprofit called Clean Air-Cool Planet in 2001. The CCC was very successful; it was used by over 90% of US colleges and universities participating in the Second Nature Climate Commitment, as well as many others. The launch of SIMAP has given colleges and universities a broader picture of their environmental impacts by incorporating the nitrogen footprint, it has ensured best practices and current emission factors are in use, and it has supported research and development with an aggregated campus footprint data set. SIMAP is now used by over 500 colleges and universities as the official tracking mechanism for their carbon footprint (including most of the signatories to Second Nature’s Climate Leadership Commitment). As the leading tool for colleges and universities to calculate their carbon and nitrogen footprints, we have a unique opportunity to develop new and important methodology for calculating and reducing campus footprints.
About the Fellowship:
While SIMAP has been very successful in helping colleges and universities more fully understand, communicate, manage, and ultimately reduce their carbon and nitrogen footprints, it (like virtually all organizational footprint tools) does not yet incorporate emissions from most upstream and downstream activities like purchasing, construction, investments, and the production and distribution of energy sources.

With the help of a Sustainability Fellow, we will begin to expand SIMAP to become one of the first available tools to include a complete estimate of all “scope 3” (i.e., indirect upstream and downstream) emissions. Specifically, we will first focus on incorporating indirect emissions from fuel and energy related activities (i.e., upstream emissions that result from the extraction, production, and transportation of fuels used for energy generation). SIMAP currently includes “scope 1” direct emissions from on-site energy generation. The addition of the scope 3 indirect emissions will provide campuses with a more complete picture of the environmental impacts from their energy choices. If time allows, we will also begin to incorporate indirect upstream emissions associated with purchased goods.

The specific project goals for the summer will include the following:
1) Conduct research and interviews with multiple campuses to assess their interest in and the feasibility of incorporating fuel and energy related activities into SIMAP;
2) Map out the methodology and collect emission factors for fuel and energy related activities;
3) Work with UNH web developers in the Research Computing Center to develop a prototype for the fuel and energy related activities; and
4) Write up the documentation and guidelines for fuel and energy related activities, which will be included in the SIMAP user’s guide.

Outcomes:
This fellowship will make significant steps towards comprehensive greenhouse gas inventories in higher education. The tangible products will include:
1) The methodology and data set for calculating the carbon and nitrogen footprint for fuel and energy related activities for the higher ed sector; and
2) A prototype module for fuel and energy related activities in the development server of the web-based campus footprint platform SIMAP.

Impact:
A Fellow working on the SIMAP scope 3 project will gain expertise with carbon footprints, nitrogen footprints, and especially indirect carbon and nitrogen emissions. The Fellow will improve their Excel skills, learn about web development in Drupal, and practice conducting research interviews. The Fellow will acquire advanced knowledge of SIMAP specifically - and greenhouse gas accounting generally – and will be well-poised to help other institutions and organizations assess their footprints in the future.
The development of the fuel and energy related activities sector in SIMAP will have immediate and far-reaching impacts for sustainability assessment in higher education. Through the addition of this new scope 3 sector, the 500+ colleges and universities that use SIMAP for their footprint tracking will learn about the impacts of this sector and will have the option to both track and reduce their footprint from fuel and energy related activities.

**Desired Qualifications:**

- Academic background in Climate Science, Environmental Sciences, Biology, Chemistry, Mathematics, Engineering, or related fields of study
- Familiarity with basic greenhouse gas accounting concepts and, ideally, previous experience in life cycle assessment and calculating carbon and/or nitrogen footprints
- Excellent written and oral communication; organized, self-directed worker
- Advanced Excel skills required for use and further development of SIMAP; experience working with other community greenhouse gas calculation tools (e.g. ICLEI’s ClearPath software, CIRRUS tool, or EPA Local GHG Inventory Tool) a definite plus

**Work Location:**
UNH Sustainability Institute
107 Nesmith Hall, 131 Main Street
Durham, NH 03824

**Mentors:**
Allison Leach, Postdoctoral Researcher, UNH Sustainability Institute
Jennifer Andrews, Project Director, UNH Sustainability Institute

**Compensation:** $6500
(taxable and distributed on a two-week payroll cycle over the course of the fellowship)

**Expectations:**
Fellows are expected to be primarily dedicated to their assigned projects throughout the summer, and also participate in a variety of networking activities, professional development opportunities, and presentations coordinated by UNHSI. Specifically, Fellows are expected to:

- Attend a mandatory orientation at UNH prior to the start of the fellowship term, **May 26-28, 2020**. (Travel scholarships may be available for students traveling from outside New England.)
- Work full-time on-site at the partner organization, **June 1 - August 14, 2020**
- Complete 400 hours of work, including work at host site as well as UNHSI activities, between May 26 – August 14, 2020.
- Complete a fellowship project according to the work plan (with adjustments as necessary).
- Participate in weekly webinars or advisory group meetings.
• Present work at mid-term and final poster sessions at UNH on **July 10** and **August 7**. (Travel support available.)
• Engage in additional professional development, networking, and advisory activities as offered.
• Provide and receive feedback at the end of the fellowship.

**Apply by February 10** at [www.sustainableunh.unh.edu/sustainability-fellows](http://www.sustainableunh.unh.edu/sustainability-fellows).

**Questions** may be addressed to [megan.carney@unh.edu](mailto:megan.carney@unh.edu).