



Arnhold Environmental Undergraduate Fellowship
Induced Intensification of Crop Production and Implications for Future Cropland Expansion
Summer 2025

Project Background

In 2021, the University of California Santa Barbara ([UCSB](#)) and Conservation International ([CI](#)) launched the Arnhold UC Santa Barbara-Conservation International Climate Solutions Collaborative to unify their demonstrated expertise and networks to conduct cutting-edge applied research to yield tangible, progressive solutions, and propel the careers of emerging environmental professionals. This partnership includes several applied collaborative research projects aimed at pushing the boundaries on resilient ocean and land conservation. The Collaborative has also created the Arnhold Environmental Fellows program—a powerful opportunity for undergraduate and graduate students to engage in collaborative research projects and receive mentorship from experts in the fields of environmental and ecological science.

This project investigates the impact of crop prices on land use, specifically looking at the degree to which higher prices result in expansion of cropland versus increased yields from existing croplands (known as induced intensification). Existing studies fail to distinguish between these two different outcomes, which has led to widely diverging estimates of the land-use and associated climate effects of agricultural policies and other market changes. For example, different studies related to the US ethanol mandate have found conflicting outcomes in terms of habitat destruction and climate benefits. By leveraging high-resolution data on cropland extent and yields derived from satellite imagery, combined with econometric methods, this project aims to improve environmental threat assessments and policy evaluations related to cropland expansion.

We are currently seeking highly motivated undergraduate student fellows to support this project. These students will work with UCSB faculty Kathy Baylis and Bren PhD student Linus Blomqvist to produce impactful research.

Responsibilities

During this opportunity, the Fellow will assist in:

- Downloading and processing geospatial and other data
- Presenting descriptive statistics
- Assisting with literature review and assessments of alternative data sources

Qualifications

- Experience coding in R

- Additional qualifications that are desired but not required:
 - Experience with tidying datasets, and/or geospatial analysis/data processing in R
 - Coursework in statistics/data science/econometrics

Fellow Selection Criteria

Students will be selected as Arnhold Environmental Fellows based on the following criteria:

- Excellence in environmental and ecological science and research
- Interest, skills, and experience related to the project responsibilities described above
- Registered UCSB undergraduate student in good academic standing

All Fellows are expected to participate in bi-weekly professional development events throughout the summer, a 5-minute flash talk presentation about your project, and other program-related events.

How to Apply

Apply for this position via Handshake with either the: a) job number – 9842153; b) job title – Arnhold Environmental Fellowship: Induced Intensification of Crop Production and Implications for Future Cropland; or c) employer – Marine Science Institute. In your application package, please include the following:

1. Your resume including relevant coursework
2. A short cover letter (no longer than one page) that includes information on (a) any relevant work or volunteer experience that relates to the desired skills and experience outlined above, (b) if applicable, any information on how your participation in the Fellowship would enhance diversity in the environmental sciences, (c) your interest in agriculture and conservation, and (d) availability for either a part-time or full-time summer fellowship.

For questions, please contact: Jennifer Bone (jebone@ucsb.edu). The Arnhold Environmental Undergraduate Fellow will be paid \$18/hour and will work for 12 weeks from their start date.

Application Deadline: April 23rd, 2025