Sustainable Agriculture Intern

Internship title: Sustainable Agriculture Intern

Organization: ASU SolarSPELL Initiative (Solar Powered Educational Learning Library)

Location: Tempe and/or remote

Type of internship: For credit or non-paid; approximately 10 hours per week

Application deadline: November 22, 2024; applications are accepted on a rolling basis and will continue to be accepted and reviewed every week until the position is filled.

Start date: January 13, 2025

Description:

SolarSPELL is looking for a Soil Science Intern to join the SolarSENSE project—a low cost solar-powered soil sensor system that measures soil moisture, temperature, pH, humidity, and solar irradiance. This innovative system is designed for smallholder farmers in regions without internet access or cloud connectivity, providing essential data to help them improve crop yields and practice conservation agriculture. The project aims to support 250,000 farmers in Rwanda and South Sudan with this valuable tool.

As an intern, you'll work alongside the SolarSENSE team on the development, an AI enabled feature, and field testing of these sensors, as well as collect and analyze data to promote informed agricultural practices. This is a great opportunity for students who are passionate about soil science, sustainable agriculture, and global development.

SolarSPELL is a global educational initiative at Arizona State University that combines solar-powered technology, digital libraries, and local capacity building. We work to build internet-ready skills and improve educational opportunities around the world. Our offline digital library is designed to bring educational content to resource-constrained locations that may lack electricity, internet connectivity, and/or traditional libraries. The SolarSPELL library emits an offline WiFi hotspot, to which any WiFi capable device (smartphones, tablets, laptops) can connect and freely, and safely, surf thousands of

resources that are carefully curated and continually improved to meet local information needs.

More information on SolarSPELL can be found at solarspell.org.

This internship offers an exciting opportunity to contribute to improving the quality of agricultural information available to farmers and agricultural extension workers around the world whose communities may lack Internet connectivity and/or electricity. Your contributions will help us improve our libraries and make a significant impact on our global users.

Interns will be expected to attend a new intern orientation and participate in an end-of-semester presentation. Ideal candidates will be detail-oriented and self-starters.

Essential Duties:

- Assist in the testing, calibration, and deployment of soil sensors
- Analyze soil data collected from the sensors, including moisture, pH, and temperature levels, to identify trends and actionable insights for smallholder farmers
- Work with the team to improve sensor algorithms, adjust embedded AI neural models, and provide feedback on the performance and usability of the SolarSENSE system.
- Conduct research about farming and agricultural practices in sub-saharan Africa, specifically South Sudan and Rwanda

Qualifications:

- Pursuing a degree in Soil Science, Agronomy, Environmental Science, Sustainable Agriculture, Agricultural Engineering, or a related field.
- Coursework or training in soil health, crop science, climate resilience, and sustainable farming practices.
- Soil Analysis: Knowledge of soil properties (moisture, pH, nutrient content) and experience with soil sampling, testing methods, and data interpretation.
- Agricultural Technology: Familiarity with agricultural sensors, GIS mapping, remote sensing, and soil monitoring tools.
- Data Analysis: Experience analyzing field data (e.g., Excel, R, or Python), especially for soil and crop yield optimization.
- Practical Experience: Field experience in sustainable agriculture, conservation agriculture, or working with smallholder farmers.
- Hands-on experience with crop management, irrigation practices, soil health improvement techniques, or organic farming methods.

- Sustainable Practices: Understanding of conservation agriculture, permaculture, regenerative practices, and climate change adaptation in agriculture.
- Global Development Awareness: Interest in global food security and challenges faced by smallholder farmers, particularly in resource-limited regions.
- Strong collaboration and communication skills for working with cross-functional teams and stakeholders.
- Problem-solving skills with an ability to adapt methods for different farming environments.

How to apply: If you are interested in applying for this position, please submit a resume and cover letter to Cassie Barrett at cbarre38@asu.edu. All documents should be in PDF format and follow the naming style of [LastName_FirstName_DesiredPosition]