



COLLEGE OF
AGRICULTURAL SCIENCES
COLORADO STATE UNIVERSITY

College of Agricultural Sciences Undergraduate Research Fellowship

Project Application

a) Fellowship Mentor name and Project title:

Dr. Raj Khosla Project title: PANDAS: Precision Agriculture Network of Degradable Analytical Sensors

b) Justification or broad impact of project on the field of science it resides within.

This project is funded from ARPA-E for 3-yrs. This project seeks to develop, fabricate and test a network of additively manufactured, biodegradable soil sensor nodes with costs of < \$1 per unit. These sensor nodes will be easily distributed, and continuously monitor soil and crop conditions (soil moisture and soil nitrogen) for an entire season, be read remotely, and require no ongoing maintenance.

c) Tasks to be completed during approximately 150-hour fellowship

We need student(s) to evaluate the degradability and accuracy of these sensors in field and controlled conditions. Students will assist in setting-up of the experiments, implementing treatment levels and taking periodic measurements.

d) Major skills and competencies that will be developed during the project execution

Ability to conduct hypothesis based research, collect data, record observations, and participate in discussion for the interpretation of data collected and the overall scope of the project.

STEP 2) Please share the following to best describe how the Fellowship Mentor plans to support the Fellow throughout the Fellowship:

a) What training will the new Fellow receive to on-board them to community practices?

The fellow will be briefed on the overall project, the novelty, science, and expectations from the fellow. Detailed instructions and complete supervision will be provided by the Post-Doctoral fellow on how to conduct experiment, precautions and safety measures related the entire work.

b) Who will the Fellow be working with directly?

The Fellow will be working directly with the Post-Doctoral fellow of the precision agriculture program most of the time, and periodically with Prof. Khosla.

c) Are there weekly/monthly group meetings that may provide additional training and/or connection for the Fellow with the other student employees working on related projects?

Yes, the group meets twice a month to learn the progress of all participants on the project, on-campus and off-campus.

d) What specific mentorship is the Fellowship Mentor willing to provide the Fellow (for example, an introduction meeting and two additional meetings throughout the Fellowship)?

Our lab takes pride in educating and mentoring fellows. We are available and accessible to fellows all the time and we ensure that they have a productive fellowship and learning experience.