

## F3 R&D GSR Solicitation

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**Proposal Deadline**      March 26, 2023

### **Introduction & Program Description**

The objective of the *Farms Food Future Innovation Initiative* (or F3), as funded by US Dept. of Commerce, Economic Development Administration Build Back Better Regional Challenge, is to leverage the San Joaquin Valley's industry concentration and expertise to develop a world-class, Climate-Smart Food and Ag Tech Engineering Cluster that develops advanced, sustainable food production and food manufacturing focused on cross-disciplinary engineering capabilities. To help achieve this aim, the **F3 R&D GSR Award will fund graduate student research and mentorship activities**. As an F3 activity, the *F3 R&D GSR Award* will serve to support the F3 Innovation ag-food-tech industry cluster as a collaboration between UC Merced Graduate Division and the UC Merced VISTA Center.

**The F3 R&D GSR Program requests proposals for co-developed research projects that explicitly articulate how they would spur innovation in ag-food-tech and further graduate student career development.** Successful proposals will define their linkages to F3 and will complement F3 thrust areas:

- Climate Smart Food Systems
- Inclusive Innovation
- Workforce Development
- Industry Engagement

The goal of *F3 R&D GSR Program* is to support and advance the F3 Research and Development Agenda through the facilitation of ag-food-tech innovation and skill development for the next generation of ag-food-tech leaders at UC Merced. In the interest of fostering sustainable solutions to the pressing agri-food system challenges of the San Joaquin Valley, **F3 will accept co-developed proposals between UC Merced graduate students in PhD programs and their faculty advisors for research projects that support use-inspired applications to advance climate-smart food systems** in the following:

### **Research Areas**

- Inclusive Innovation and Entrepreneurship in Agrifood Tech; Small Farmer Tech Solutions; Convergent approaches to Equitable Food-Energy-Water Solutions; Societal Resilience in Agrifood Tech Innovation
- Climate Resilience and Regenerative Agriculture; Ecosystem Service Quantification (e.g., carbon / nitrogen accounting, water quality remediation); Geospatial Mapping, Analysis and Modeling for precision applications; Water Information and Accounting (e.g., ET, irrigation, groundwater recharge); Food-Energy-Water Systems (e.g., agrivoltaics, vertical farming);
- Artificial Intelligence, Machine Learning, and/or Data Science applications; Automation, Cyberphysical Systems, Robotics, and Mechatronics; Internet-of-Things, Edge Computing, Human-Computer Interaction; Technology Stack Systems Integration; Digital Twins; Biological and Chemical Sensor Systems with applications in environmental sensing, agriculture, food production and quality control.

### **Award Information**

Approximately 5 awards are anticipated in Year 1, commencing Fall Semester 2023, with the opportunity to renew for a second year, subject to the availability of funds and quality of proposals received. All funds must be spent before August 15, 2024. No-cost extensions will not be granted. All public

presentations, publications, and disseminated data emanating from these funds will acknowledge the EDA BBBRC iCREATE project and F3 Innovation Initiative. Recipients will present findings at the F3 supported conferences and events to be announced later.

### **Recipient Support**

Successful awardees of the F3 R&D GSR Program funds will receive:

- Two (2) semesters of GSR funding at appropriate step (tbd by Grad Div) for 2023-2024
- 50% summer support for the summer term following the academic year (Summer 2024)
- Up to two (2) weeks of summer salary for one affiliated faculty advisor (\$8000 max)
- Up to \$2000 reimbursement for Open Access publication charges<sup>1</sup>
- Up to \$2000 reimbursement for materials, consumables, and supplies<sup>2</sup>
- Up to \$1000 reimbursement for travel costs incurred to present research<sup>3</sup>

### **Eligibility Requirements:**

- A proposed project must include an explicit collaboration between a specified graduate student in good academic standing and their faculty advisor. The student and faculty advisor must each consent to the proposal through a signed concurrence; the advisor will maintain the funding distribution as prescribed; and the team will participate in and support ancillary F3 activities (e.g., showcases, workshops, and conferences).
- GSR recipients must maintain 12 units of enrollment throughout the academic year for which they receive the funds.
- Recipients must acknowledge funding source in all produced materials and participate in F3 promotional materials and events as available.

### **Evaluation Criteria:**

- The scientific and technical merits, novelty, and rigor of the proposed research.
- Contribution to the F3 Collaborative R&D mission (e.g., what is the likelihood that the project will have a tangible and positive impact on ag-food-tech innovation and climate-smart food systems, and that it will lead to significant societal and scientific results?)
- Evidence of collaboration among advisor and GSR, and potential to succeed in proposed activity.
- Evidence of “Inclusive Innovation” as it relates to developing a diverse and vibrant economy.
- Evidence of partnership with community advisor, industry liaison, or commodity board to inform proposed research or leverage other funding sources.

### **Special Award Conditions:**

#### ***Acknowledgment of Support:***

Awardees will be required to include appropriate acknowledgment of EDA support in reports and/or publications on work performed under an award.

#### ***F3 Engagement Activities:***

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<sup>1</sup> Must acknowledge F3 funding source

<sup>2</sup> Excludes laptops, monitors, tablets, and other personal computing hardware; may include software under special circumstances and demonstrated need.

<sup>3</sup> Must request in advance and provide documentation for direct F3 related engagement in activity (e.g., abstract for paper or poster)

Awardees should plan on engaging with F3 related activities such as communications, research dissemination, workshops, collaborative engagements, and other activities that support nurturing and growing the F3 community. Awardees must engage with Grad Division, VISTA, and/or the coordination entity on these activities throughout the duration of the award.

**Reporting Requirements:**

The faculty advisor must submit a quarterly project report to the Senior Program Manager no later than 10 days prior to the end of every quarter to be included in reports to EDA. A report template will be provided at the time of award and will include sections on activities conducted, outcomes determined, and next steps to be initiated.

**Timeline:**

3/06/2023	Solicitation for 2023 F3 R&D GSR Program proposals announced
3/26/2023, 11:59:59 PDT	Submission Deadline for proposals
4/10/2023	Final judging and selection of awards
8/15/2023	Start Date of GSR
8/14/2024	Closeout

**PDF Submission:**

Apply by submitting the following set of documents in **one combined file in .pdf format** to Luyen Hoang ([lhoang6@ucmerced.edu](mailto:lhoang6@ucmerced.edu)).

**Cover Sheet using template provided**

- Contact and status information for Graduate Student and Advisor
- Project title; Primary R&D Area
- Abstract (250 words, written for a non-expert reviewer)
- Budget Justification

**Biosketches**

- 2-3 page, [NSF-style biographical sketch](#) (CV) for advisor
- 2-3 page, [NSF-style biographical sketch](#) (CV) for PhD student

**Proposal Narrative** (4 pages maximum; references excluded)

- Title (top line), Investigators (second line)
- Describe the motivation of the proposed research project and how it addresses the objective of use-inspired applications to advance climate-smart food systems;
- Describe the overall approach, including prior work, pertinent methods and expected results;
- Describe the R&D context this research and how it will contribute to and advance innovation within the field (i.e., intellectual merit and follow-on opportunities);
- Describe how the proposed work will provide impactful outcomes on improving the San Joaquin Valley region's economy in an inclusive and equitable manner and help achieve aims of F3 (i.e., broader impacts, and plans for outreach and engagement);
- Provide a timeline, outreach plan for project outcomes, and a brief data management plan;
- Describe any prior collaboration between advisor and GSR and/or any prior F3 collaborations with external partners.