ONDESA

CONVERGENCE OF NANO-ENGINEERED DEVICES FOR
ENVIRONMENTAL AND SUSTAINABLE APPLICATIONS

NSF Research Traineeship (NRT) Program Fellowship Call

Applications due by March 21st 2025 by 5 pm.

The CONDESA program at UC Merced invites PhD students to apply for the NRT Fellowship, which is expected to fund up to 5 students for three semesters. *Selections will be made by April 2nd 2025,* with fellowship funding beginning in Fall 2025. Trainees will additionally receive up to $7000 for research expenditures, including materials and travel. See next page for details on program concept, research areas, and elements.

NOTE: **It is a prime directive of the NRT program that participating in this program is not a burden to the graduate trainees, nor add to their time-to-degree**. The research goals are therefore NOT to train the students to become experts in another discipline, but rather, give them an opportunity to leverage the expertise of the faculty and their peers in the program to enrich their own thesis research. **This funding will not require them to develop a separate side project.** They are expected to continue to develop their established research while broadening their scope.

Eligibility

PhD students who started in their programs in AYs 2022, 2023, or 2024 are eligible for this cohort and must be a US citizen, national, or permanent resident. Preference will be given to students from the core CONDESA graduate programs (physics, mechanical engineering, chemistry and biochemistry, and environmental systems) but students from other programs will also be considered.

Application Materials to be uploaded:
(1) **a CV**, with details of all academic preparation, including undergraduate degree, Masters degree (if applicable), awards and honors, publications and presentations.
(2) **an unofficial UC Merced transcript**, and
(3) **a statement** of 1-2 pages that describe your research area(s), progress toward PhD at UC Merced, your long-term academic goals, and how CONDESA fits into your plans.

Apply online here: https://condesa.ucmerced.edu/cohort-5-application or scan here.

Any questions may be directed to Zulema Avalos, zavalos2@ucmerced.edu

NRT CONDESA (Convergence of Nano-engineered Devices for Environmental and Sustainability Applications) is a 5-year integrated research and education program that will train PhD students in the design and development of nano-engineered sensors targeted for distributed deployment in environmental media (soil, water, and air). Our faculty from four diverse graduate groups, Physics, Chemistry and Biochemistry, Mechanical Engineering, and Environmental Systems, along with research scientists from Lawrence Livermore National Lab, will mentor graduate trainees on thesis projects based on themes drawn from the following research areas:

- **Detection of Contaminants in Geoenvironments via Nano-enabled Sensors**.
- **Nano-enabled Sensing for Greenhouse Gases and Carbon Cycling in Soil**.
- **Advanced Quantum Sensing for Geoenvironments.**

Additional requirements:

1. All trainees will take PHYS/ME/ES 239: Nano Fabrication for Interdisciplinary Materials Sciences.

2. Trainees are encouraged (but not required) to take PHYS 292/ME 290/ES 290/CHEM 290: Nano-Sensing for Environmental Applications, a hands-on course that will train students on SEM, confocal microscopy, AFM and Nano-lithography at the SCIF clean room.

3. The professional development workshops over the 5-year duration of the award will cover:
(a) **Team Science:** goal setting, visioning, communication, and team management
(b) **Ethics**: responsible conduct of research
(c) **Leadership**: outreach, peer mentoring and leading translational teams
(d) **Career planning**: Science communication, time management and networking