



EPSCoR Track-II: Natural Resource Management Laboratory Mentoring & Retention Plan Overview for PostDocs, Colleagues, Grad Students and Interns

Mentoring and Retention

We prioritize mentor-mentee relationships across roles and disciplines. Our goals are to provide training at the interface between machine learning and data collected by unmanned aerial vehicles (UAVs). Training and experience at this interface enables students to design and execute scientific research, and prepare for a set of roles in our modern workforce. Our mentoring program will be refined throughout the project to deliver on project goals.

Activities

Formalized mentoring activities for the project are outlined here and include (1) faculty mentoring of postdoctoral researchers, (2) faculty mentoring of junior colleagues, including new faculty hires, (3) mentoring graduate students, and (4) mentoring and retaining interns.

- 1) Postdoctoral Mentoring: All faculty that will engage with or host a postdoctoral scholar will participate in mentorship of postdocs as outlined in the Postdoctoral Researcher Mentoring Plan included with the original proposal and posted on our project web page. In summary: the leadership team for this project will meet with postdoctoral researchers to provide the skills, knowledge, and experiences necessary to prepare postdoctoral researchers to excel in their chosen career path. Specifically, this is to include grant proposals, publication, presentation, teaching, professional practices, budgeting, and human resource issues.
- 2) Colleague mentoring: Many new faculty have had no formal training in human resources, personnel management, accounts management, or conflict resolution. In this context, senior faculty have the responsibility to mentor junior colleagues in the context of building a productive and sustainable research program. Some of this mentoring is self-evident: senior faculty can assist junior faculty by reading grant proposal drafts and can recommend junior faculty to colleagues who may be organizing professional meetings. Many other features are less obvious including how to develop a 'lab culture'; how and when to recruit students (and how many); how to resolve interpersonal conflicts.
- 3) Graduate student mentoring: Graduate student mentoring is primarily the responsibility of the student's research advisor. Secondary mentoring can come from the student's committee. Critical to graduate student mentoring are transparency, support, and candor. *Transparency* means that an advisor sets clear and reasonable expectations and works with the student to develop metrics that will help the student develop the technical and critical thinking skills necessary to become an independent researcher. *Support* underscores the need for advisors to be affirming in their interactions with their graduate students and actively work with students when preparing for big events (i.e., qualifying and comprehensive exams). *Candor* means that an advisor provides

constructive criticism and honest assessment of a student's progress. While the 'style' will vary with individual mentors, there are many aspects of mentoring students that are common across programs and lend themselves to assessment and improvement.

- 4) Intern mentoring and retention: Our guidelines for graduate student mentoring apply to the interns as well. In addition, because the cohort of interns is younger and more diverse, we expect internship mentors to commit to the student's project by : (1) working with the student to plan the project and to provide direction as needed; (2) working with the student to set timely, reasonable, and attainable goals; (3) working with the student to establish, and amend as needed, a detailed timeline for the successful completion of the project; and, (4) for the sake of retaining a diverse population of students, work actively and effectively with various internal and external stakeholder organizations, particularly as it can promote and enhance intern's experiences during and after their program.