Mary K. Beals, PhD

Mentor: Subil Abraham - Oak Ridge National Lab

Home Institution: Southern University A&M College

Target Course: Ecology (404B)

Enrollment:15 Students

Course Offered: Fall and Spring (as needed)

Project Goals

ECOLOGICAL COURSE INTEGRATION

- Develop a beginner-friendly **CURE** module in Ecology 404B that guides biology majors through ecological question development, data exploration, visualization, and interpretation.
- Use Louisiana-focused ecological and environmental datasets to connect course concepts to wetlands, biodiversity, climate change, water quality, and coastal change.
- Build student confidence with computational ecology through guided **CloudBank/Jupyter notebook** activities, structured tutorials, and reflection checkpoints.

Science Gateway Resource Needs / Questions

- *What practices ensure student CURE workflows are accessible, reproducible, and sustainable beyond the Hackathon?*
- *How can Gateways best guide students through the full ecological research process in Louisiana ecosystems?*
- *What support helps biology majors new to computational tools feel confident using Science Gateways?*

Science Gateway Goal

Use **NAIRR CloudBank Classroom** as the primary student-facing cloud workspace for Ecology students to store project files, access guided **Jupyter notebook** activities, and explore ecological datasets in a browser-based environment at no cost.

- *Student access and storage through CloudBank*
- *Guided Jupyter notebook activities*
- *Cornell Virtual Workshop onboarding tutorials*
- *HPC Carpentry reproducible workflow support*
- *Low-bandwidth backup datasets and worksheets*