



U.S. DEPARTMENT OF
ENERGY

Office of
Science



Many Teachers, One Goal

Biology professor advances research, cultivates colleagues during her Oak Ridge National Laboratory internship

By Allan Brettman

[Mautusi Mitra's](#) days of earning a PhD in Plant Biology at Louisiana State University are a distant memory. Same goes for her era of postdoctoral research at the University of California-Berkeley. She's now immersed in her role as a biology professor at the University of West Georgia (UWG).

But something about Mitra has not changed between now and then: "You can learn from anybody—any title, any rank. I learn from grad students, I learn from postdocs. I learn from staff scientists."

That approach was especially true in summer 2024 when Mitra was a participant in the Department of Energy's [Visiting Faculty Program \(VFP\)](#), offered through the [Office of Workforce Development for Teachers and Scientists](#). During the 10-week experience, Mitra continued biology research that she launched in her laboratory at UWG's campus in Carrollton, GA.

"Our research lab at the [UWG](#) has isolated three novel bacteria strains and has sequenced their genomes," Mitra said. "The focus of our summer 2024 VFP research project was to evaluate those novel bacterial strains for lignin and plastic upcycling."

Accessing labs and expertise to advance recycling research

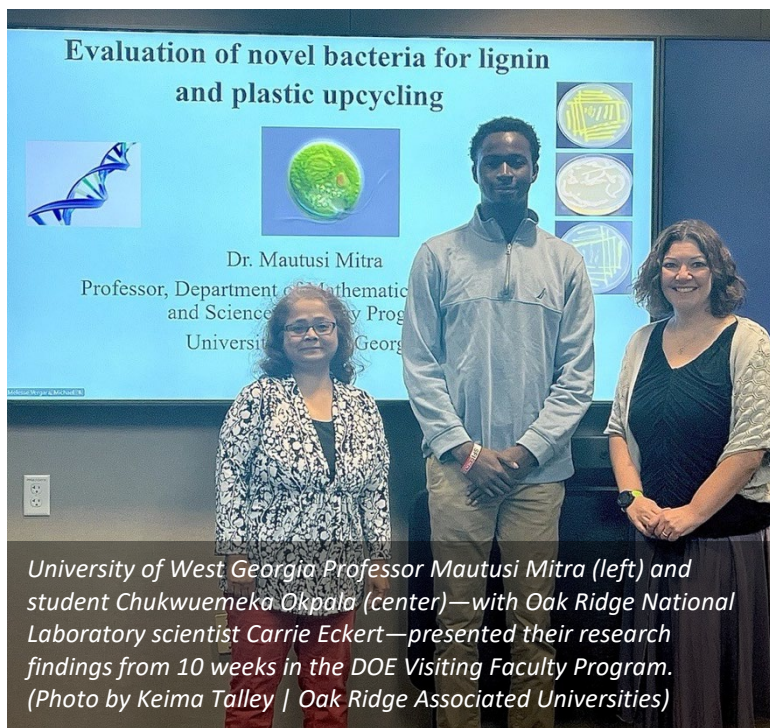
Mitra noted that the [Oak Ridge National Laboratory](#) (ORNL) facilities dwarf those at the UWG, a comprehensive university with about 12,800 students. So, she said, the opportunity to carry out experiments at the national laboratory was welcomed and exciting. On top of that, Mitra's UWG undergraduate student Chukwuemeka Okpala also participated in the 10 weeks of research. (VFP offers the option for faculty members to invite up to two students to participate, provided they meet program eligibility requirements.)

"Our preliminary research findings at ORNL have set the stage for future research collaborations with ORNL scientists," Mitra said. "This research is of interest to DOE for enhancement of carbon efficiency, economic viability, and environmental sustainability."

She praised her new-found colleagues at the national laboratory, especially [Carrie Eckert](#), ORNL's synthetic biology group leader, as well as [Adam Guss](#), an ORNL genetic and metabolic engineer.



Mautusi Mitra, a University of West Georgia professor, made key connections with synthetic biology researchers at Oak Ridge National Laboratory. She spent summer 2024 in the Visiting Faculty Program through the Department of Energy's Office of Workforce Development for Teachers and Scientists. (Photo courtesy of Mautusi Mitra)



“There are so many professional contacts I made during this experience. I have a support system through them,” said Mitra, who is called “Mou” (pronounced “Moe”) among friends. “I’m so grateful that I found out about VFP. I want to spread the word around. This kind of teamwork is difficult to achieve at a small institution. This especially was very refreshing at Oak Ridge.”

Inspiring next steps and future teamwork

Mitra anticipates returning to Oak Ridge next year to continue her research. “I already have three research goals for my next proposal, which I presented as part of the VFP deliverables,” she said, explaining that the program requires a concluding project report.

Her ORNL experience also was memorable because she broke her foot in the first weeks of the program. But that didn’t slow her down, said [William Alexander](#), an ORNL associate R&D staff scientist.

“If I had to sum up Mou’s strengths in a couple words, it would be ‘tenacity’ and ‘drive,’” said Alexander. “After that bone break, she had a boot on most of her time at the laboratory. While it slowed her down, it definitely didn’t stop her. She still made headway on her project despite that injury.”

[Michael Melesse Vergara](#), a technical professional in ORNL’s synthetic biology group, also worked with Mitra during her summer program.

“She was demonstrably excited about her project and determined to achieve her proposed goals,” Vergara said. “She made the most of her time here and will build on the data she generated to advance engineering of her three microbes.”

Mitra credited a friend with alerting her in 2023 to the existence of the VFP program.

“This friend works at Lawrence Berkeley National Lab,” Mitra said. “She told me, ‘Hey, don’t you know about all these opportunities?’ I said, no. She sent me a link and then I started contacting different scientists at different national labs. It became clear based on my research project that Oak Ridge would be the best place to conduct my VFP research. And I am blessed that my VFP application was awarded.”

“The experience at Oak Ridge was fantastic,” Mitra said. “I loved it. I learned so much, and so did my student, Chukwuemeka. The best part of our VFP research at ORNL was that we worked in a team and we had multiple mentors from whom we learned different aspects of our research project.”

