As a senior at Dickinson College, Michelle Cao (she/her) is making a significant impact on campus and beyond through her work in environmental science and data analytics. Her commitment to community engagement is evident in her roles as a student watershed coordinator for ALLARM (Alliance for Aquatic Resource Monitoring), a data lab tutor at the QR Center, and a member of the Environmental Science Majors Committee.

Michelle's journey with ALLARM began unexpectedly during her first year when she stumbled upon a flyer for the Community Engagement Fellows (CEF) program. She initially left the QR code unscanned for weeks but, on a whim, decided to apply just before the deadline. This last-minute decision led to interviews with several community organizations, ultimately ranking ALLARM as her top choice due to its strong emphasis on community science—a perfect fit for her academic interests.

Over the past three years, Michelle has taken on various responsibilities at ALLARM, from conducting nutrient tests in the lab and onboarding new volunteers to leading outreach efforts. She has also played a pivotal role in streamlining ALLARM's data processes, expanding on previous work using R programming. What once required an entire team a full week to manually clean and organize data can now be done in minutes.

When asked about ALLARM's impact, Michelle emphasizes that it is more than just a data-collecting initiative—it is a support system for volunteers. ALLARM provides both financial and educational resources to its community scientists, ensuring they have the necessary tools and knowledge. The organization fosters collaboration, creating a space where local expertise and scientific data intersect. Michelle recalls instances where volunteers identified high nitrate levels in water samples and connected them to real-life environmental issues, such as upstream sewage dumping.

One of Michelle's most memorable experiences with ALLARM was during her first-year summer, when she traveled to Susquehanna County to co-lead a volunteer training workshop. Initially nervous about facilitating discussions, she gained confidence with the encouragement of her supervisors. That experience not only strengthened her leadership skills but also deepened her appreciation for the collaborative nature of community science.

Despite the challenges of stepping outside her comfort zone, Michelle has learned the value of curiosity and communication. She credits her growth to the supportive mentors at ALLARM, who encouraged her to ask questions and engage in meaningful conversations.

Now, she balances independent problem-solving with collaboration—a skill set that will undoubtedly benefit her future endeavors.

Looking ahead, Michelle is still exploring her post-graduation path. She envisions working in environmental science for a few years before pursuing a graduate degree. Her long-term dream, however, is to establish a community farm that integrates education and environmental outreach. While water quality monitoring may not be her central focus in the future, her passion for community-based environmental work remains unwavering.

As for future plans, Michelle is considering presenting at the Civic Engagement Symposium 2025. Her goal would be to describe ALLARM's data interpretation process, with a unique emphasis on bringing volunteer voices and desires to the forefront of the conversation.

For first-year students interested in community engagement, Michelle's advice is simple: get involved early and build connections. She emphasizes the value of natural conversations and the unexpected opportunities that arise from them. The CEF program, she notes, is an excellent way for students to immerse themselves in meaningful work while forming lasting relationships with mentors and peers.