



Annual Report 2024

Our Goal

The Alliance for Aquatic Resource Monitoring (ALLARM) is Dickinson College's community science center, located in Carlisle, Pennsylvania.

ALLARM educates communities to use science as a tool to investigate water quality health and to use findings to inform stream protection and restoration efforts. ALLARM achieves its work in collaboration with numerous non-profits, agencies, and community and volunteer partners. ALLARM also employs a staff of 9-13 Dickinson College student watershed coordinators who help advance the goals of the organization while providing them with opportunities to learn fundamental environmental, community engagement, science education, and non-profit skills.

Dickinson

 ALLARM

Note from the Director

My goodness 2024 has been a busy year of activity, growth, and transitions. It is always exciting to report that ALLARM was able to connect with all of our community partners multiple times. I am constantly in awe of the tremendous work community and volunteer scientists are doing to assess their streams and put those data to use for local change.

I feel an immense amount of gratitude to have been able to spend seventeen years as ALLARM's director. In collaboration with communities, volunteers, partners, and funders we have been able to collectively do some much work evaluating the health of PA and NY's waterways. It is this on-the-ground work that moves environmental progress forward. While my time at ALLARM comes to a close, I look forward to joining the ranks of our volunteer scientists to collect data and join your efforts.

In appreciation,
Jules Vastine

Technical Assistance



ALLARM guides Westmoreland County volunteers through a macroinvertebrate collection and identification experience.

Partnerships Through C-SAW

ALLARM continues to provide technical support to watershed groups throughout the entirety of Pennsylvania thanks to the Consortium for Scientific Assistance to Watersheds (C-SAW). Our primary form of support for our partners this year was through Quality Assurance/Quality Control (QA/QC). This past year, ALLARM was able to verify the data being collected for 8 groups across 17 counties. All of these groups are organizations that we have been working with for several years, and it is an honor to maintain these relationships. ALLARM has also seen an increase this year for watershed organizations who want to revisit their original monitoring plans to include a larger emphasis on data interpretation and usage. It is exciting to see that folks are passionate about putting their hard-earned data to use. Based on this interest, we are planning for more data interpretation experiences in 2025. Finally, ALLARM has continued technical support this year via water quality monitoring workshops, watershed specific mentorship, and QA/QC advice throughout the state.

“By providing training workshops on the data upload process for volunteers like those in the Johnston’s Run Revitalization Council, ALLARM can further support community members to not only monitor, but also analyze their local stream health, and we are so excited to be a part of this mission!” -Naisha Gaur ‘27

Collaboration with the CMC

The Chesapeake Monitoring Cooperative (CMC) partnership entered its 10th year in 2024. Much of the focus of this past year has been on refining and expanding upon resources that had been created during the first few years of the partnership. These updates include a newly refurbished homepage for the Chesapeake Data Explorer, now renamed the CMC Data Explorer. ALLARM provided feedback throughout the process of updating the site and has assisted with the development of beta testing materials and updated user resources. After this switch, ALLARM oriented volunteers and monitoring groups to the updated functionality of the homepage, which includes tools to explore water quality and benthic macroinvertebrate data outside of formal data interpretation workshops. ALLARM is looking forward to continued collaboration with our partners in the Chesapeake Monitoring Cooperative.

This year, the CMC also continued to work on increasing accessibility in monitoring programs by creating resources to better connect individuals who have local water quality concerns with what next steps they could be taking to address these concerns. The hope with these new resources is to decrease the barrier of entry into water quality monitoring for individuals who may not have engaged with it in the past.

Stream Team Spotlight Celebrating 5 Years



During the local Stream Team 5 Year Celebration, volunteers had the opportunity to engage with ALLARM's preserved macroinvertebrates.

Checking in with Stream Team

This year was busy for Stream Team! ALLARM welcomed new volunteers in the Northern Tier of Pennsylvania and closer to home as Stream Team expanded into Franklin County.

Data interpretation was a major focus for the spring, and ALLARM created data packets for 61 monitoring sites with graphs, maps, summarized statistics, and raw data. Implementing the R script and data management changes from 2023 significantly increased the efficiency of the behind-the-scenes data cleaning and visualization process. ALLARM hosted a Water Quality Influencers Workshop to begin the data interpretation process and to provide background information about water quality influencers and state water quality standards. This workshop also acted as a starting point for the data interpretation process. Stream Team volunteers then uncovered data stories from their sites, relating geology, changes in land use, and local events to water quality. Some volunteers then shared these stories with the larger Stream Team community in August during a state-wide virtual meeting.

Stream Team Statistics for 2024:

- 120 volunteer scientists
- 64 monitoring sites
- 11 counties

Celebrating 5 Years!

This year, ALLARM also celebrated Stream Team's 5th Anniversary and the incredible work accomplished by Stream Team volunteer scientists. Through local, regional, and virtual celebrations throughout the fall and across the watershed, ALLARM acknowledged and celebrated the commitment and time Stream Team volunteers devote to monitoring each month, and thanked them for their continued effort. ALLARM also designed swag based on volunteer feedback and interest, and Stream Team monitors received thank-you cards, t-shirts, small drybags, and newly-designed Stream Team stickers. Through these events, Stream Team monitors connected both within and across county teams and these opportunities for community were a highlight of the year.

"At every [Stream Team] check-in meeting, everyone has wanted to stay and continue chatting long after it has ended, so I was glad to be able to create a dedicated time with a main goal of connecting and fostering community amongst all Stream Team volunteers with these celebrations." - Isabel Ruff

"It is so wonderful to interact with people who are taking action to make a difference in their community!" -Naisha Gaur '27

Restoration Monitoring



ALLARM met with partners in Cumberland County to walk through the Restoration Monitoring Protocol. Photo Credit: Dickinson College, Dan Loh

Data Collection and Workshops

Over the past few years, ALLARM has partnered with the Chesapeake Monitoring Cooperative and the Stroud Water Research Center to create a community-based restoration monitoring program funded by the National Fish and Wildlife Foundation. The monitoring protocol aims to track the status and success of restoration projects over time to determine whether a practice is working and whether investments are having the intended impact on treated streams.

The program has been successfully launched and ALLARM is currently monitoring at two locations within the Susquehanna River watershed. Once data has been collected at these sites for a few more years, data analysis and visualization will begin to track any early onset changes and trends. Additionally, ALLARM piloted a training experience with partners and students at the local Yellow Breeches Creek in order to prepare for the integration of volunteers in 2025. Our hope with this experience was to iron out difficult aspects of the training process, and to gain feedback on what techniques need additional direction and time. We look forward to the volunteer recruitment and additional monitoring sites that 2025 will bring.

Diversity, Equity, Inclusion, Justice (DEIJ)



ALLARM tables at Dickinson College's Out on Britton Celebration, giving participants the space to work on watercolor affirmation cards.

Teamwork makes the Stream Work

As working towards a more just and inclusive future is a group effort, this year, ALLARM worked towards making all the research and resources that students and full-time staff members have worked on accessible to public audiences. This started with the publication of ALLARM's first DEIJ newsletter which, when completed, contained 40 pages of research and resources. Additionally, to maximize access and make clear the organization's commitment, the aforementioned DEIJ landing page has been added to the ALLARM website where the newsletter, the organization's DEIJ promise, and any future resources will be housed. This is a living page and our hope is to update it frequently with not only ALLARM-created resources, but also to spotlight important resources created by our partners.

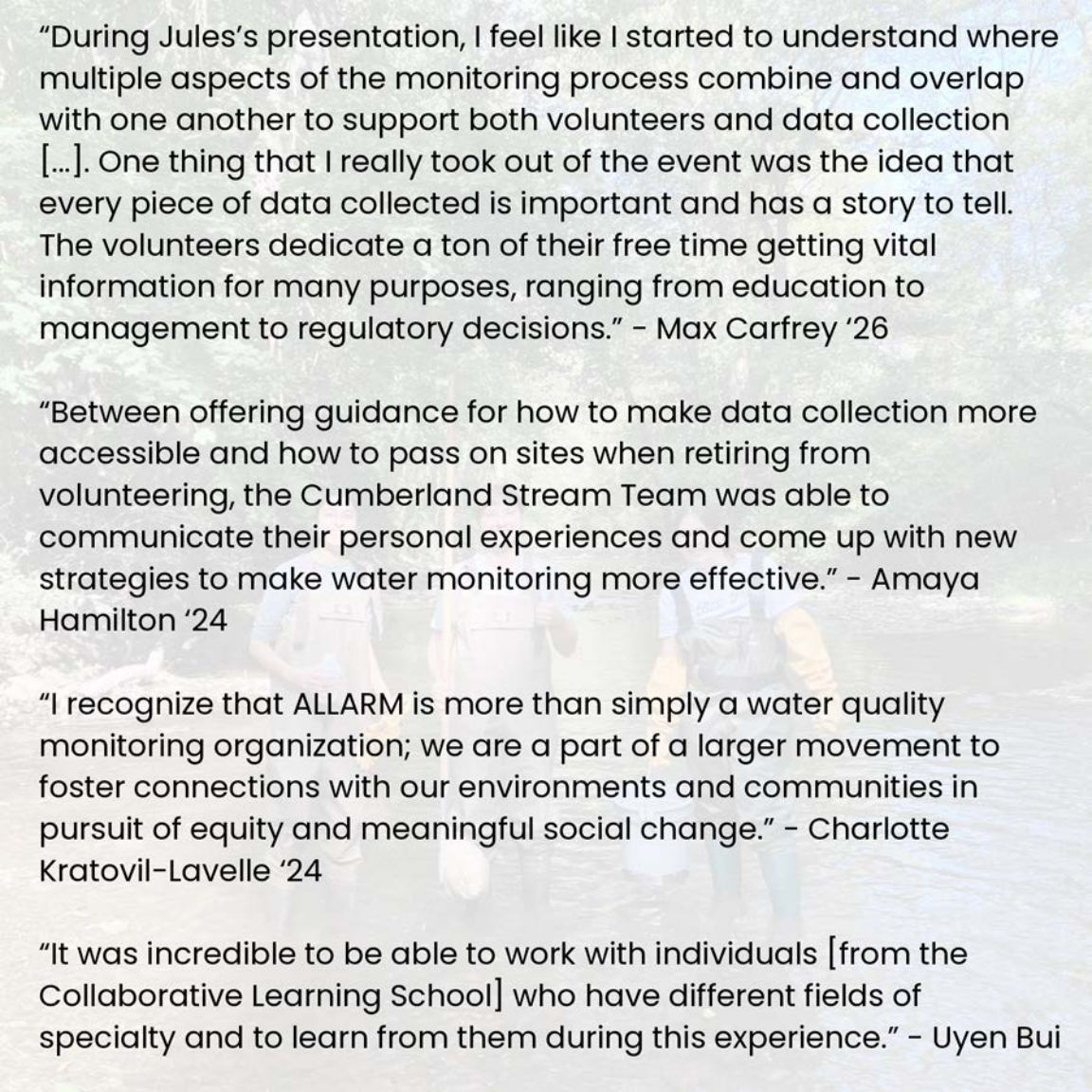


Scan this QR code or visit
<https://bit.ly/ALLARMDEIJ>

Watershed Coordinator Reflections



Students help full time staff sample macroinvertebrates for Tier 2 collection.

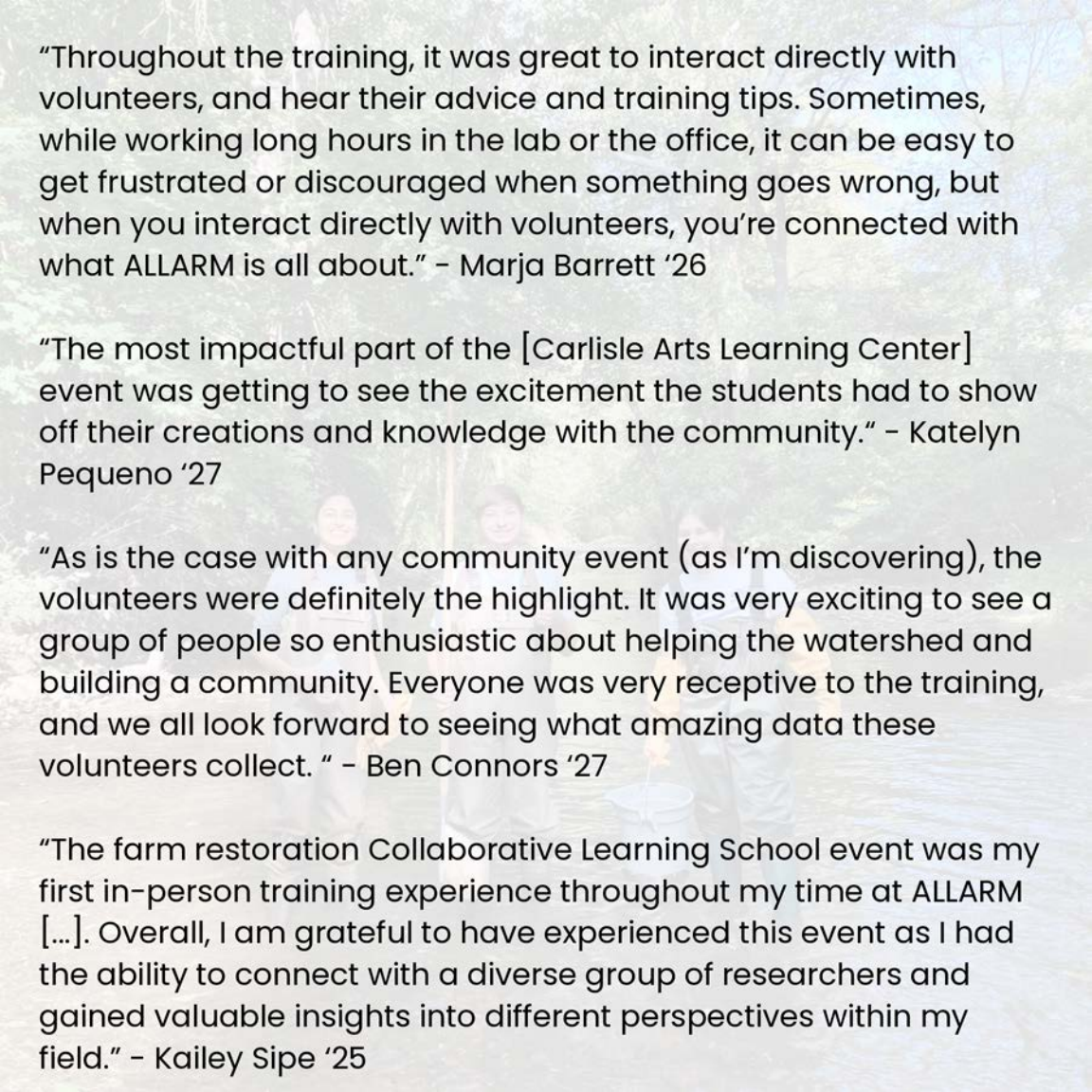
A background image showing several people in a river, likely participating in a water monitoring activity. They are wearing light-colored shirts and dark pants, and some are holding equipment. The water is calm and reflects the surrounding environment.

"During Jules's presentation, I feel like I started to understand where multiple aspects of the monitoring process combine and overlap with one another to support both volunteers and data collection [...]. One thing that I really took out of the event was the idea that every piece of data collected is important and has a story to tell. The volunteers dedicate a ton of their free time getting vital information for many purposes, ranging from education to management to regulatory decisions." – Max Carfrey '26

"Between offering guidance for how to make data collection more accessible and how to pass on sites when retiring from volunteering, the Cumberland Stream Team was able to communicate their personal experiences and come up with new strategies to make water monitoring more effective." – Amaya Hamilton '24

"I recognize that ALLARM is more than simply a water quality monitoring organization; we are a part of a larger movement to foster connections with our environments and communities in pursuit of equity and meaningful social change." – Charlotte Kratovil-Lavelle '24

"It was incredible to be able to work with individuals [from the Collaborative Learning School] who have different fields of specialty and to learn from them during this experience." – Uyen Bui



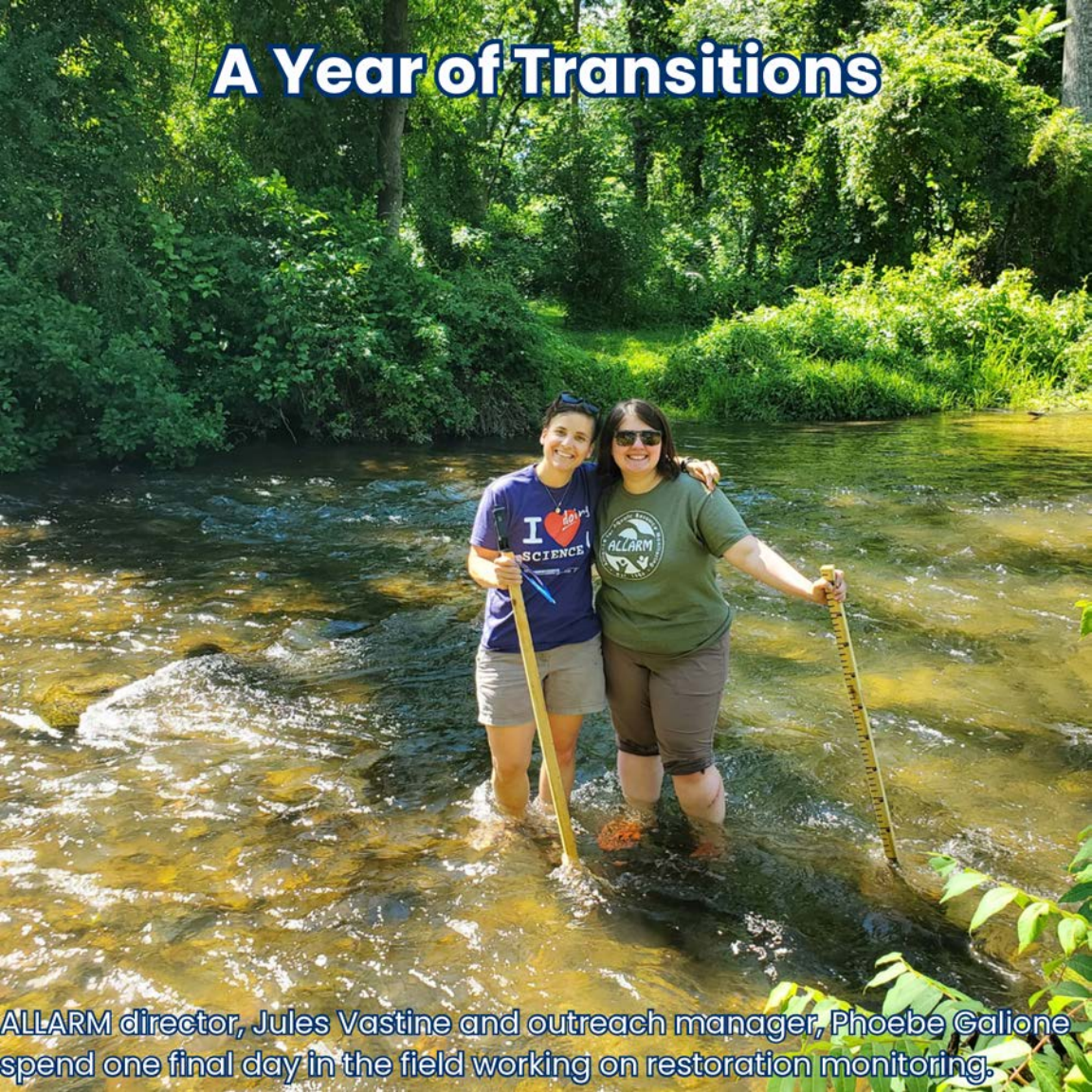
"Throughout the training, it was great to interact directly with volunteers, and hear their advice and training tips. Sometimes, while working long hours in the lab or the office, it can be easy to get frustrated or discouraged when something goes wrong, but when you interact directly with volunteers, you're connected with what ALLARM is all about." – Marja Barrett '26

"The most impactful part of the [Carlisle Arts Learning Center] event was getting to see the excitement the students had to show off their creations and knowledge with the community." – Katelyn Pequeno '27

"As is the case with any community event (as I'm discovering), the volunteers were definitely the highlight. It was very exciting to see a group of people so enthusiastic about helping the watershed and building a community. Everyone was very receptive to the training, and we all look forward to seeing what amazing data these volunteers collect. " – Ben Connors '27

"The farm restoration Collaborative Learning School event was my first in-person training experience throughout my time at ALLARM [...]. Overall, I am grateful to have experienced this event as I had the ability to connect with a diverse group of researchers and gained valuable insights into different perspectives within my field." – Kailey Sipe '25

A Year of Transitions



ALLARM director, Jules Vastine and outreach manager, Phoebe Galione spend one final day in the field working on restoration monitoring.

Some Endings and Some Beginnings

2024 was a transitional year for ALLARM. The organization said goodbye to long-time director, Jules Vastine after over 20 years. Additionally, the organization bid farewell to Phoebe Galione, the organization's outreach manager.

In October we added a new member to the team: Dr. Jill Arriola is the new Staff Scientist at ALLARM and has already hit the ground running by engaging with volunteers, mentoring students, updating manuals, and acting as the point person for the Restoration Monitoring Program. Jill has her Ph.D. in Marine Science and was most recently an Assistant Research Professor at Penn State University.

"This role [as outreach manager] has built such a foundation in my heart for science communication and teaching and I look forward to bringing this passion into my future." – Phoebe Galione

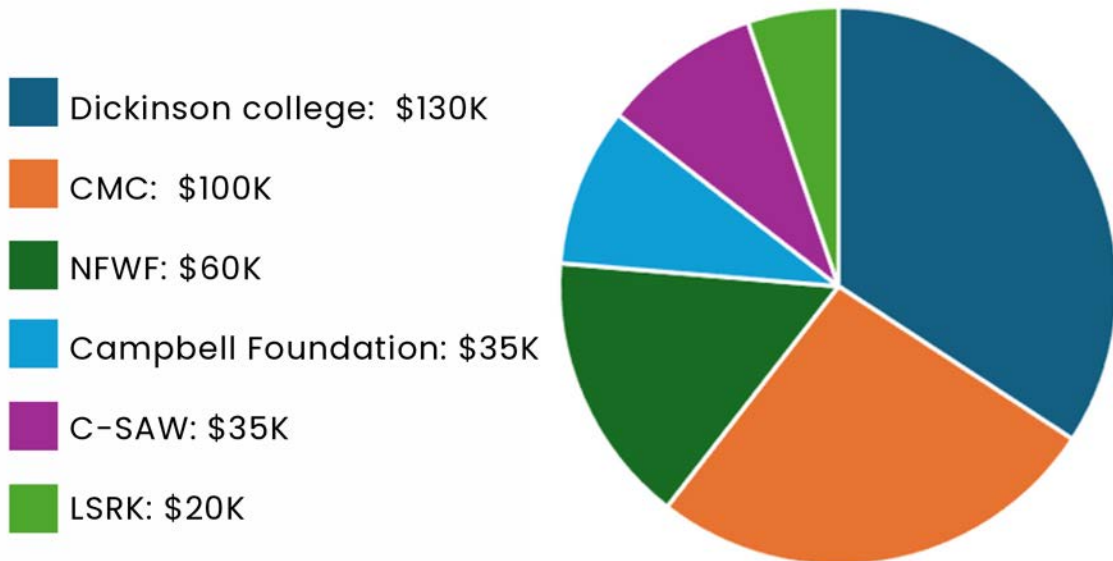
"The highlight of my time at ALLARM so far has been meeting, training, and collaborating with our volunteer monitors. I'm energized by their passion for their local waterways." – Jill Arriola



From top to bottom, left to right:

Michelle Hom '24, Marja Barrett '26, Prerana Patil '24, David Marsh '26,
Jules Vastine, Whimsy Mark-Ockerbloom '24, Crosby Wilkin '26, Emma
Spinelli '25, Amaya Hamilton '24, Lindsay VanFossen, Isabel Ruff, Max
Carfrey '26, Amelia Harper '25, Phoebe Galione

Funding Sources



Thank you for helping support a wonderful 2024!

ALLARM's 2024 By the Numbers

11 Workshops run

12 Community partners supported in PA and NY

27 Community meetings attended

67 Water samples tested

150 Dickinson College students reached

220 Volunteers reached

850 Number of lab tests performed

5000 Hours of Monitoring

