Sources of Shared Knowledge: Community Stakeholders, Undergraduate Students, and Archaeologists on an International Archaeological Dig

Sophie Baggett

I have had the dream to become a physician and specialize in cardiology for about seven years now. As a pre-med undergraduate student at Carleton College, I knew that meant I would have to take the Medical College Admissions Test and organic chemistry, as well as get meaningful clinical experience. However, I had no idea I would also lead community outreach for a project doing archaeological field research in Peru! Although this was not a typical pre-med experience, my time with Dr. Sarah Kennedy's Proyecto Arqueológico Medio Ambiental (PAMA) in Puno, Peru, was one of the most beneficial experiences I have had during my career.

In the Puno region, colonial-era (AD 1600–1800) silver refineries used heavy metals such as mercury to purify and refine mined silver ore (Kennedy & Kelloway, 2021). In 2018, Dr. Kennedy (Carleton College) and her co-principal investigators (PIs), Dr. Sarah Kelloway (University of Sydney) and licensed archaeologist (Lic.) Karen Durand Cacerés (Universidad Nacional de San Antonio Abad del Cusco) used portable X-ray fluorescence (pXRF) spectroscopy to test for these heavy metals in archaeological soils. With this protocol, they found hazardous levels of antimony, arsenic, mercury, and lead at the Trapiche Itapalluni archaeological site near Puno, Peru (Kennedy & Kelloway, 2021). In the 2022 field season, Dr. Kennedy, Dr. Kelloway, and Lic. Durand applied the protocol at five additional abandoned silver refineries in the region, and also added vegetation and water analyses. Further, they expanded collaboration with indigenous landowners in their research and connected with community stakeholders to disseminate their findings.

The field research team included Peruvian archaeologists, Indigenous community members, local landowners, and North American, Australian, and Peruvian archaeology students. Undergraduate students primarily contributed classroom knowledge to the project, as most did not have previous archaeology research experience. Peruvian archaeologists, Indigenous community members, and local landowners did have prior experience conducting research and working with the land we planned to visit. Lic. Durand had 20 years of such experience. Dr. Kelloway had extensive prior experience with pXRF work, and Dr. Kennedy had been working in Peru for over a decade. No one member had all the training and background necessary for this project, rather each person brought their unique skills to the team. Personally, I did not have any formal or informal experience with archaeology prior to this project. However, I did have fluent Spanish skills, experience as a student and anthropology research intern in Madrid, Spain, and knowledge from two years of work-study at Carleton's Center for Community and Civic Engagement that I used to lead the community outreach side of the project.

I joined the PAMA team in Puno for the first stage of the project. During this time I interviewed 15 community stakeholders: three government officials, three landowners near sites, two directors of non-governmental organizations (NGO), two archaeologists, an archaeology student, a professor, a doctor, a nurse, and an environmental activist. My initial goals for these interviews were to inform the community of heavy metal risks at abandoned silver mines and refineries, as well as to distribute flyers, pamphlets, and door hangers with information on how to prevent heavy metal poisoning. However, my goals shifted over the course of the project. Through my interviews, especially with NGO directors, I realized that creating and distributing comprehensive and digestible informational materials would be impossible during my short time in Puno. I took a step back and used these conversations to develop a set of best practices for distributing our results, as well as building connections for the team to use in future field seasons.

Every community member I spoke to was invested in the project for different reasons. Reconciling the goals of community members and the research group was one of the biggest challenges of these conversations. For example, the

Peruvian Ministry of Health did not want our team to present any heavy metal findings to landowners without their approval. A representative from the regional management of energy and mining was enthusiastic about our work and asked us to collaborate with his academic group. One NGO director enthusiastically proposed to connect our outreach project with community members through their infrastructure of virtual forums, but for a cost. A landowner asked what I was going to do to solve the heavy metal contamination and wanted the work to be done by Peruvians, rather than foreigners. Another landowner declined to answer questions about heavy metals and instead wanted to focus on road and building repairs that would convert their land into a more accessible tourist destination.

In these conversations, I strove to accurately represent PAMA's goals and interests. I always conducted interviews with another team member present, although the PIs were often busy conducting fieldwork or managing project bureaucracy. Community members sometimes had questions that only one of the PIs could answer, and I had to learn how to say, "I do not know" or "we do not have full results yet." Dr. Kennedy and I met before each community member interview to plan and develop goals, and we debriefed afterwards to discuss any unanswered questions. This scaffolding allowed me, as a student, to feel more comfortable meeting with community members without a PI present. Working and traveling with another team member also helped me feel safer navigating the city and following the stringent local COVID-19 precautions. A Peruvian archaeologist accompanied me for conversations with Indigenous landowners in case interpretation was necessary, but most of the time I worked with another undergraduate student. Either way, this collaboration allowed team members from the field research team to connect with the outreach portion of the project. Explaining our community engagement goals while onboarding fellow team members kept me on track throughout the project. Splitting the day's tasks was sometimes overwhelming, but also taught me a lot about delegating. In such supportive and partnered settings, undergraduate student leadership allows work to happen in multiple places at once and students to practice project management skills, as well as peer-to-peer mentoring.

The skills I developed and honed through the PAMA project are directly applicable to my future career as a physician. Specifically, I learned how to work with team members from various backgrounds, age groups, and varying skill sets. I also learned how to work towards multiple goals simultaneously and how to collaborate with various stakeholders with diverging, and sometimes contrasting, aims. These abilities will help me become an effective member of the patient care team. Furthermore, the active listening that was key to listening in my second language, taking notes of important new things learned, respecting community partners' time, and maintaining flexibility to shift goals throughout the project will be just as important in the healthcare setting. As a future physician, instead of meeting with an NGO director, I may meet with a patient's family member. Rather than collaborating with a diverse archaeological team, I will be working closely with nurses, nursing assistants, residents, interns, therapists, specialists, and community health workers.

Furthermore, through working with the PAMA project I gained a better understanding of reciprocal community engagement. I had first learned about reciprocal community engagement in my student work-study job at Carleton's Center for Community and Civic Engagement, where we use the critical service-learning framework. This approach values every stakeholder as "a conveyor of knowledge—a teacher—with valid and powerful ideas, experiences, and perspectives to share" (Mitchell, 2008, p. 58). It ensures that all participants achieve meaningful outcomes. In Puno, I saw the challenges of putting this theory into practice, but also the benefits. Although we did not distribute informational materials this summer as planned, we are now working to create a pamphlet for tourists visiting the Chorrillos archaeological site. In future field seasons, we plan to use what we learned from community interviews– that visuals are essential for storytelling, that working with teachers and elders in Indigenous communities lends a project credibility, and that information about problems must be accompanied by solutions—to present our heavy metals results and safety strategies to those who live near and visit the sites. Finally, through this reflection and future publications, we hope to share what we have learned with the broader archaeological and community-engaged scholarship communities, the importance of a diverse project team, the potential of scaffolded undergraduate leadership, and the value of community outreach.

References

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About the Author

At the time of this writing, Sophie Baggett was an undergraduate student at Carleton College.