Laying Proper Foundations for Diversity in the Geosciences

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Diversity constructed on the tenets of justice and accountability will create a truly better community that creates truly better science.

Author Robin D. López visited Tuzigoot National Monument in Arizona in 2017 to learn more about indigenous spaces and understand how past cultures interacted and protected the environment. The Tuzigoot pueblo seen here was once occupied by the Sinagua people. Credit: Ruby E. Reyes and Evelyn Y. Reyes

By Robin D. López and Ataya Cesspooch 4 December 2019

This article is part 3 of a series produced in collaboration with AGU's Diversity and Inclusion Advisory Committee (https://www.agu.org/Learn-About-AGU/About-AGU/Governance/Committees/Diversity-Committee) to highlight perspectives from underrepresented communities in the geosciences. Read the introduction here (https://eos.org/agu-news/why-diversity-matters-to-agu) along with part 1 (https://eos.org/opinions/creating-spaces-for-geoscientists-with-disabilities-to-thrive), part 2 (https://eos.org/opinions/promoting-racial-diversity-in-geoscience-through-transparency), and part 4 (https://eos.org/opinions/understanding-our-environment-requires-an-indigenous-worldview). Attendees of AGU's Fall Meeting 2019 can also use this field guide to Ethics, Diversity, and Inclusion events (https://www.agu.org/Fall-Meeting/pages/ethics-diversity-and-inclusion-field-guide).

At a recent meeting for graduate students interested in furthering diversity, equity, and inclusion (DEI) within the College of Natural Resources at the University of California, Berkeley, we were asked to respond to the question "What does diversity mean to you?"

A bit hesitant, we looked at one another and shifted in our seats. In this room full of talented rising scientists who champion for change, we each seemed to be having an internal crisis. The term "diversity" has helped develop conversations about race, justice, and identity. However, the idea of diversity felt foreign to us; our lived truths as people from marginalized backgrounds don't align with the institutional definitions of the term.

Much like geoscience fieldwork, understanding the terrain of diversity requires exploration beneath the surface. A core sample would reveal the complex issues that have accumulated atop one another over decades. As we contemplated the question about what diversity meant to us, we thought of the thousands of Native American remains being housed nearby in Berkeley's Phoebe A. Hearst Museum of Anthropology (https://hearstmuseum.berkeley.edu/), yet to be repatriated to their tribal communities

Perspectives on Diversity

- Why Diversity Matters to AGU (https://eos.org/agu-news/why-diversity-matters-to-agu)
- Creating Spaces for Geoscientists with Disabilities to Thrive (https://eos.org/opinions/creating-spaces-for-geoscientists-with-disabilities-to-thrive)
- Promoting Racial Diversity in Geoscience Through Transparency (https://eos.org/opinions/promoting-racial-diversity-in-geoscience-through-transparency)
- Laying Proper Foundations for Diversity in the Geosciences (https://eos.org/opinions/laying-proper-foundations-for-diversity-in-the-geosciences)
- Understanding Our Environment Requires an Indigenous Worldview (https://eos.org/opinions/understanding-our-environment-requires-an-indigenous-worldview)
- Transcending Science: Can Artists Help Scientists Save the World? (https://eos.org/opinions/transcending-science-can-artists-help-scientists-save-the-world)
- Shining a Spotlight on LGBTQ+ Visibility in STEM (https://eos.org/articles/shining-a-spotlight-on-lgbtq-visibility-in-stem)

(https://www.sfchronicle.com/bayarea/article/UC-Berkeley-struggles-with-how-to-return-Native-13270422.php).

We thought of the systemic barriers based on class and race that marginalized communities face when attempting to enter academia. For example, a 2018 survey revealed (https://calanswers.berkeley.edu/home) that there were more underrepresented minority staff members (1,995) on campus than there were underrepresented minority graduate students and faculty combined (1,512). We thought about what it means to be just two of the few award-winning scholars of color in spaces where, as marginalized people, we are seldom recognized for our potential and actual contributions in geoscience. What would the landscape of recruiting and retention look like if more people from marginalized identities were properly recognized and honored? The reality is that most people who look like us face deep-seated structural barriers that limit their ability to enter into the scientific profession. However, when we, as rising scholars, are seen by our communities, we become opportunity manifest—real examples for others to follow. Such is the case with one of the author's cousins who works on campus and unlocks the doors to our buildings every morning. That cousin finally sees someone who looks like him walking the halls and entering laboratories and classrooms where science is advanced. And so we thought not just of diversity, but of accountability and justice and how these foundational concepts are not often included in discussions of diversity and inclusion.

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We were uncomfortable when asked to define diversity because we have heard the term used in derogatory ways, such as "that person is a diversity hire" to signal that someone doesn't truly belong. This dismissiveness is a result of diversity initiatives that typically entail meeting a quota of underrepresented minorities. Addressing diversity in this way lends credence to the idea that minority researchers are present in the geosciences only because of our demographics and not our intellectual merit. This approach devalues diversity by not recognizing the academic importance of diverse life experiences. That is, a group of scholars that includes a variety of viewpoints is more likely to develop unorthodox and innovative ideas and solutions to address some of today's most pressing geoscience problems. We see this innovation take form at AGU's annual Fall Meeting, where scholars take advantage of access to different perspectives to further develop their research and their professional lives. One can only imagine the magnitude of innovation as AGU continues to raise the bar for equity and access in the geosciences.

We need to begin viewing justice and accountability as integral components of diversity initiatives. To be clear, we don't mean adding the additional letters *J* and *A* to "DEI"; we are urging geoscientists to think about those concepts as the foundation of diversity, equity, and inclusion. For example, programs that

are becoming more inclusive can often still leave students powerless to change the larger framework that was originally built on inequality. Creating diverse and inclusive places by focusing on justice and accountability means providing underrepresented minorities not just a seat in the room, but one at the decision-making table.

In the geosciences, people of color are often, even once included, left with a feeling of otherness. Two years ago one of the authors of this essay, Robin, was on a field team of about 20 researchers tasked with subsurface exploration and site modeling. However, he was just one of two people of color on the project. Did the team think he was only there because of a quota? If so, would his perspective and opinions be valued the same as others on the team?

There wasn't much he could do with the answers to these questions even if he had them. The percentage of people of color on the team more or less matched representation in all of the geosciences: a percentage that is still far too small. But Robin was at the decision-making table now. He sought out grants to hire additional people for the team and easily found four highly qualified people of color to work on the project. Once they were on board, he made efforts to foster their sense of belonging. Together with the new researchers, he reduced the isolation of individuals in the group and raised the overall quality of the team by adding scientists with years of relevant research experience as well as with backgrounds not yet represented in the group. When diversity is understood as an integral component of rigorous research, it becomes clear that a more diverse research team will lead to more advances in geoscience.

Crucially, we must also ensure compensation for the "invisible labor" placed on minorities—the never-ending requests to appear on task forces and panels to create diversity, to be the face of outreach and community engagement.

As we develop these components of justice to evolve our concept of diversity, we must also embrace accountability. Every geoscience field site in North America is the home of an indigenous nation. Though these tribes have been forced off most, if not all, of their lands, these places are still their traditional territories. We believe, as we begin our careers as field researchers, it is our responsibility to learn whose land we wish to work on and, more importantly, ask permission and respect the responses of these indigenous peoples prior to initiating activities that will disturb the ground, such as core sampling. These practices acknowledge indigenous sovereignty and show respect for indigenous communities, whose claims on their land continue to be erased. These interactions may also lead to interesting and fruitful collaborations that contribute to the research through indigenous ecological knowledge. Holding ourselves accountable to people we may affect with our research shouldn't be seen as a burden, but as a way to pursue more just scholarly work.

These values are also reflected in how we compensate scholars belonging to marginalized identities. This compensation includes ensuring equitable pay for fieldwork, lab analysis, or leading workshops and presentations. Crucially, we must also ensure compensation for the "invisible labor (https://www.theatlantic.com/education/archive/2016/11/what-is-faculty-diversity-worth-to-a-university/508334/)" placed on minorities—the never-ending requests to appear on task forces and panels to create diversity, to be the face of outreach and community engagement, or—as in this article—to speak about personal and professional challenges they must overcome in an attempt to create a diverse, equitable, and inclusive community. Here again, we must understand that this accountability enriches the geosciences and increases recruitment and retention by making our community a rewarding place to be.

We must address more than the surface issues of diversity. It is time to take a good look at a core sample to see the complex issues occurring below the surface. An approach that focuses on justice and accountability will enable us to dig deeper into these issues and yield more substantial solutions compared to shallow approaches that view diversity as a quota.

In fact, accountability can yield creative and innovative solutions, including land acknowledgement, compensation for unseen labor, development of diversity statements for institutions, unconscious bias training, and so on. Sometimes these solutions will come out of the uncomfortable moments of disrupting the comfort of privileged spaces or the status quo with conversations about what accountability and justice look like in our community. That uncomfortable work will ultimately create a more inclusive geoscience community, and our science will be all the better for it.

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