This is what was found by UARK Geosciences at University of Arkansas on Policies for Working with Communities of Color as well as plans for improved processes and/or needed resources.

There are no established policies that we could find for working with communities of color. We describe below some experiences and initiatives implemented over the years.

**Audit of previous interactions with communities of color at our organization:**

**Departmental/Collective initiatives**

**Initiative #1**
In the Geosciences (GEOS) at the U of A reaching out to URM groups began in earnest in 2006 when the Department first attended the National Association of Black Geoscientists (it was National Association of Black Geologist and Geophysicists at that time).

GEOS continued to attend NABG every year since and have hosted the conference twice in Fayetteville (2009, 2019). We began our own NABG -UA chapter in 2009. We also realized that it was not enough to recruit students but also offer something substantial in return to the organization that helped keep these bright students in the geosciences. In 2009, the Department was awarded funding to bring students from all across the country to the NABG annual meetings (covering registration, travel, food, and hotel). GEOS has been successful in receiving these funds since 2009 and able to fund 570 students over this time. We have also taken a lead since 2009 in collecting and disseminating information to the NABG student members and the U of A acts as a student liaison for the NABG student membership. This has helped us better serve students whether recruiting them to the U of A or wherever would best suit their interests.

**Initiative #2**
In 2007, Fort Valley State University was looking for partner universities to join a Math, Science and Engineering Academy (M-SEA) gifted high school program. The program consists of providing opportunities for students to join U of A for a second bachelors in Geosciences or Engineering on a scholarship following a completed Chemistry or Math degree at Fort Valley. So far, we have had 17 Engineering students come through the program and 4 geoscientists as well as 6 MS students in Geosciences at various stages of completion.
There are other initiatives at the University level and some brief info follows below:

- **Biomedical Research Camp** [https://fulbrightreview.uark.edu/southeast-arkansan-middle-school-students-take-on-covid-19-during-virtual-u-of-a-biomedical-research-camp/](https://fulbrightreview.uark.edu/southeast-arkansan-middle-school-students-take-on-covid-19-during-virtual-u-of-a-biomedical-research-camp/)
- **The Kemke Journalism Project** [https://ljp.uark.edu/](https://ljp.uark.edu/)
- **Accounting Careers Awareness Program** [https://news.uark.edu/articles/42278/walton-college-hosts-accounting-career-awareness-program](https://news.uark.edu/articles/42278/walton-college-hosts-accounting-career-awareness-program)
- **Engineering Career Awareness Program**: [https://ecap.uark.edu/](https://ecap.uark.edu/)
- **Summer Pre-Law Program (SPPARK)**: [https://law.uark.edu/service-outreach/spark/](https://law.uark.edu/service-outreach/spark/)
- **Native Youth in Food & Agriculture Leadership Summit**: [https://law.uark.edu/service-outreach/youth-summit.php](https://law.uark.edu/service-outreach/youth-summit.php)

**Research related personal initiatives/perspectives**

Previous interactions with communities of color are varied and the department does not collect data on the number of research projects undertaken in countries or regions with communities of color, but we will describe the personal experiences of three faculty.

**Faculty#1**

Nascent project in the Arctic - a few locals were included originally more by convention than with extreme intention (bear monitors, transport upriver). We just put in a more comprehensive proposal for the same region and have intentionally included training and dependence on locals to help with field work/monitoring as well as inclusion of local oral and photo history to better understand the landscape through time. We have not included any locals in the project development - as newbies we are still trying to figure out how to make mutually beneficial connections.

Another recently funded project includes working with the local tribes (we consulted with them beforehand) on a collaborative project exploring the intersection of geology and human activity in the watershed through time.

**Faculty#2**

I have participated in the Ft. Valley State program (see above).

Have approached the Caddo and Osage tribe leaders with respect to naming new species.

I am also part of a research project in which the PIs have started to work with the Navajo Nation. I am doing research on Navajo Nation land (related to the previous stated proposal) but have not directly reached out to researchers from the Navajo Nation, I've just put in the research proposal application to do work on the land.
South Dakota Sioux tribes contacted USGS hydrologists (and GEOS faculty) for guidance on water-supply monitoring and characterization. Close contact was maintained throughout the work to ensure that the work was relevant and answered needs.

An alternative example was NAWQA sampling in Memphis, where contact was made with State and municipal water agencies, but little contact with local people, homeowners, local stakeholders who lived near sampled wells.

What worked well in these interactions?

**Departmental/Collective initiatives**

Sincerity, listening to what the students and organizations need from us, a long-lasting commitment and sufficient funding.

**Research related personal initiatives/perspectives**

**Faculty#1**

Successful projects require huge investments in building trust. In a previous project, I rode in on the shoulders of others who had paved the way. I was involved with that project for ten years or so.

**Faculty#2**

In the project with the Navajo Nation, local collaborators were included as authors in a recent collaborative project.

The Osage and Caddo Nations were not involved in the project but are acknowledged in the publications’ acknowledgement. I also had to put in an application to the Osage to ask permission to use the name Pawhuska as a species name. In addition, I will be providing replicas to the nation as well as a write-up for the general public.

**Faculty#3**

South Dakota Sioux tribe members were included in the project from the earliest stages. Local involvement improves final outcomes and maintains relevance of the science.
What did not work well and how can this be better addressed in future plans?

Departmental/Collective initiatives

There needs to be more buy-in from the U of A. We can work hard to recruit students but if there are not funds, other students to identify with, and faculty to advise the students it is not as productive as it could be.

Research related personal initiatives/perspectives

Faculty #1

As for sharing findings and data, attempts weren’t always successful. Two reasons- 1) Some scientists are lousy communicators - even given the directive that they should be able to describe their science such that anyone can understand it- many fail 2) Small non-profits and even universities do not have the budget to do this - which makes me realize perhaps we need to budget for this. Time allocated to the process of working within the community's governance, customs, and priorities are also limited by 3-year cycle grants.

On challenges connecting with local communities of color:
Working with local Gwich’in Renewable Resource Board we ran into problems as the required NSF language for letter of support means something different to the tribe than it meant to the NSF- and we were facing not getting a key letter for our proposal - even though the Board supported our intent to hire locals for field training/monitoring and working with the council to seek local knowledge about landscape change over time to inform our project/work with the community with planning for risk assessment. Luckily, we were working with Arctic program and they came up with a go around.

Funding programs need to be aware of these potential roadblocks and, as in the case above, allow for flexibility that respects all perspectives on programmatic directives.

Faculty#2
For the NSF proposal on the Navajo Nation, we are hoping to include students and teachers for the Navajo Nation and listening sessions were planned but COVID cancelled all of them.

Are there ways to improve the outcomes of projects already undertaken?

Departmental/Collective initiatives

A wider commitment on the part of the department would help program underway continue into the future. Presently programs are too individual specific. There need to be funds available when a student is recruited.
We need to work harder to make NABG UA Chapter a space for students to connect. This is often a fluctuating group depending on who the President is any given year. We can work more with FVSU and other HBCU to encourage students toward Geosciences. We can discuss how to create a MS program where students come in with a BS in Chemistry or Math and can still complete a MS in 3 years (and we need to find a way to fund it). This trend has started at the U of AL and UT-Austin to help students from 3-2 program choose Geosciences over Engineering.

Research related personal initiatives/perspectives

Faculty #1
After watching the session interview with Patricia Cochran, I realized how much we were doing wrong. My Arctic research partner had the same reaction - and we immediately agreed to meet this week to revamp our approach - including reaching out now before we even begin developing a proposal to talk about community needs, existing knowledge, how to partner up from the start.

Faculty #2
We have sought to build trust with the Navajo Nation and we have a collaborator that is part of the Navajo Nation leadership and are paying her consulting fees.

Data and findings sharing are planned for the Navajo Nation and for the Caddo and Osage, we are planning on providing a "for the public" write up as well as 3D prints of the specimen for educational use.

Faculty #3
Actively seek to include local students in research. Native Americans are hugely underrepresented in the sciences and such involvement is a path to greater inclusion and representation.

Are there specific resources or guidelines that are needed to improve the process for planning ahead and working with communities of color?

Good intentions are great but there has to be commitment and funding. An example is we were accepted to a group at AGU where we would have access to students of color applying to graduate school, but we would have to wait until April. At that time each year our funding is gone and there is no drive to hold or create new funding for students from this pool.

Commitment – faculty need to be prepared to attend conferences like NABG, SACNAS, or STEM annually to create a trust and connections with students.

A common thread to meaningful interactions with communities of color came from involving the community from the onset of the project. This seemed to allow for contribution from the community, involvement of the community when possible, and also helped build trust between the scientist(s) and the community. Negative experiences seemed to stem from a lack of
involvement and communication with the community and too much managing from state partners versus the community itself. In the future, it is important to involve the community in the research from the beginning, and where possible, to allow them to provide input on the problem in hand and their ideal deliverable from the research project. Regular communication with the community will also help build and keep trust through the life of the project. Another common thread was that it takes time to build trust, so longer projects would be beneficial, however, this is highly dependent on funding and not always possible.

We would like to include this type of research on the tenure package to promote community science within the department. This will help with early career scientists who are invested in this research, but do not feel they have the time or resources to take on a project where research objectives are dictated by the community and not the state of the science. Sadly, it is difficult for pre-tenure faculty to do this type of research because building relationships and trust with communities takes a long time. If a connection is not already formed by senior faculty, then it is difficult to receive grant funding. A potential solution is to find ways to include (and value) this type of multi-year time investment and commitment in faculty annual evaluations.