URGE Policies for Working with Communities of Color for the Ocean Mapping and Engineering pod at the University of New Hampshire

This is what was found by the Ocean Mapping and Engineering pod at the University of New Hampshire on Policies for Working with Communities of Color, as well as plans for improved processes and/or needed resources.

- **Audit of previous interactions with communities of color at our organization:**
The individuals that comprise the UNH OME pod come from a variety of career stages (e.g., graduate students, university faculty, research scientists, and staff). The pod, therefore, has a wide range of experiences working with communities and individuals of color, generally consisting of outreach efforts, research efforts, and professional efforts. Several of these experiences are summarized below.

  - **Outreach Interactions: These experiences are related to service projects, interactive efforts, and other community-oriented activities.**
    - Volunteer work at an Acoustical Society of America meeting leading interactive acoustics-related activities for inner city school children.
    - Conducted a SeaPerch (underwater ROV) design and build workshop with English language learners from a local elementary school.
    - Coordination of and participation in UNH’s annual Ocean Discovery Day, which showcases research and activities conducted within the UNH School of Marine Science and Engineering (SMSOE). The event is free and open to the public.
    - Travel to South Africa to work with girls of color at a “tech” camp. The camp was aimed at exposing girls to STEM through interactive, hands-on projects.

  - **Student Interactions: These experiences encompass interactions with graduate students, undergraduate students, and primary/secondary school students of color.**
    - Delivery of a seminar to Tennessee State University (HBCU) environmental sciences students on the graduate opportunities in the geosciences, and potential geosciences career paths.
Coordination of a weekly UNH SMSOE seminar, in which outside speakers are invited to discuss their work and research in the fields of ocean engineering and ocean sciences. Recently, inner-city school students learned of the seminar via social media and have attended remotely via Zoom. Efforts are also being made to increase the number of BIPOC speakers.

- Founding of the UNH chapter of the National Society of Black Engineers (NSBE) (2009). NSBE provides support and networking opportunities for all STEM underrepresented minority students.

- **Professional Interactions:** These experiences are comprised of career- and research-oriented efforts conducted with and within communities of color.
  - Recruitment of summer student interns from HBCUs and MSIs for the Woods Hole Partnership Education Program (WH-PEP).
  - Experience as a recruiter for the National Oceanic and Atmospheric Administration (NOAA), with focus on recruiting from HBCUs and MSIs.
  - Work in the oil and gas industry in the Gulf of Mexico with a majority of coworkers being BIPOC.
  - Repeated travel to the Arctic via research vessel. The crew included a marine mammal observer who was a member from one of the local indigenous tribes. Logistics of the cruises were also coordinated with local tribes.
  - Participation in discussions by the Arctic Research Commission on the “co-production of knowledge” (i.e., involving local tribes earlier in the research process and collaborating on production of information).

- **What worked well in these interactions?**
  A summary of what worked well in these interactions is provided below.

- **Outreach Interactions**
  The general consensus between pod members was that young students were always intrigued by the content of the outreach material, regardless of their race or ethnicity. Participation by students of color was high, and the students seemed to appreciate and enjoy being involved in STEM activities.

  In some cases, the outreach activities were brought directly to the students, removing the need for school districts to find funding for transportation. In one instance, an ASL interpreter was provided for a student with a hearing disability. Though this was not a direct result of the student’s race, the inclusion of the interpreter allowed for the participation of all students present, serving to promote diversity, equity, and inclusion.

- **Student Interactions:**
  As in the outreach interactions, students of color seemed interested in the seminar information provided to them. The seminar delivered at Tennessee State University was well-received by the students, and positive feedback was provided about the content and
format of the presentation (in this case, the seminar speaker was a graduate student, making the undergraduate student audience feel comfortable discussing opportunities in the geosciences with someone seen as a peer, rather than a professor or superior).

The UNH chapter of NSBE still exists and continues to serve as a resource for BIPOC students on the UNH campus.

- **Professional Interactions:**
  For the examples provided, clear and dedicated efforts were made to recruit students from HBCUs and MSIs. Within WH-PEP, these efforts continue to exist and are strengthened by new connections being made with HBCUs. The pod discussed the possibility of expanding this practice at UNH in some form or another, and efforts are also being made within the Earth Sciences department at UNH to connect and partner with HBCUs to share resources, knowledge, and provide speaking opportunities.

  With respect to the Arctic expeditions, the consideration of local indigenous practices and concerns when planning research efforts showed consideration for the individuals living in the area. The inclusion of an indigenous individual on the research cruise also strengthened the emphasis on the incorporation of indigenous knowledge in the research process. In addition, applications for funding from sources that sponsor research expeditions such as these now require plans for involving and informing indigenous communities, further emphasizing the importance of indigenous participation.

- **What did not work well, and how can this be better addressed in future plans?**
  A summary of what did not work well in these interactions is provided below.

  - **Outreach Interactions**
    Funding for transportation and other travel-related needs (e.g., student lunches, chaperones) is often scarce for school districts where a majority of students are non-white. Due to a lack of funding for buses, many local schools cannot afford to send their children to UNH’s Ocean Discovery Day, which robs them of the opportunity to witness and participate in ocean engineering and ocean science activities.

    The UNH SMSOE holds a yearly “603” fundraising challenge, in which funds are gathered by UNH students, faculty, and alumni to support various endeavors within the Marine School. For example, the 2020 603 Challenge provided money to graduate students to pay for research vessel time to conduct dissertation research. In the future, UNH OME pod members will explore whether general 603 Challenge funds can be allocated to busing grants for communities of color to attend Ocean Discovery Day, thereby diversifying the audience we are able to reach.

  - **Student Interactions**
In general, the peer-to-peer interactions conducted by UNH OME pod members were mostly positive. However, more of an effort could be made to partner with local elementary, middle, and high schools to disseminate information about the geosciences and scholarship opportunities at an early age. In many cases, financial barriers prevent people of color from pursuing a college education, in addition to the problem of being unaware of the existence of many fields of earth and ocean sciences in the first place. Similarly, more outreach seminars aimed at undergraduate geosciences students at HBCUs and MSIs could help diversify the population of graduate students within UNH’s SMSOE and at other institutions as well.

- **Professional Interactions**
  Unlike the outreach efforts, results of many professional efforts made by our pod members were generally unsuccessful with their target audience. For example, despite consistent efforts made by one pod member to recruit individuals from HBCUs and MSIs, it was noted that many persons of color were not interested in pursuing a career in the geosciences. Potential causes for this include a lack of exposure to the careers that exist, a perceived lack of qualifications for those careers (e.g., many black Americans cannot swim, which may prevent them from wanting to become an ocean engineer or scientist), and financial pressures, which lead individuals of color to seek higher-paying jobs outside of the geosciences. Similarly, efforts to coordinate with native Arctic tribes on research were not always fruitful, due to a lack of interest or trust by the native population in the ability of researchers to communicate results. This stemmed mostly from infrequent communication, rather than from a language barrier or lack of understanding.

To remedy these issues going forward, researchers should increase the frequency with which research activities and results are communicated to indigenous communities or individuals of color that are involved with or impacted by the research. Additionally, informing individuals of potential careers in the geosciences and providing opportunities to build skills needed for careers in ocean engineering may help increase the likelihood that recruitment and outreach efforts at the professional level are successful. For example, Cornell University requires all first-year undergraduate students to complete a swimming and water safety competency test. UNH could explore a similar requirement for undergraduates.

- **Are there ways to improve the outcome of projects already undertaken?**
  Many of the efforts and interactions described above are ongoing projects, and suggestions for outcome improvement have been discussed in the previous section. Additionally, the discussion of inquiring whether outreach audiences require a translator, financial assistance for busing, or the need for exposure to particular geosciences topics prior to the outreach event taking place may help increase the success of the event and improve the experience had by the students.

- **Are there specific resources or guidelines that are needed to improve the process for planning ahead and working with communities of color?**
One resource identified by this pod to help foster the relationship between UNH faculty and students is training or information for faculty and advisors on how to work with minority students such that the students feel comfortable and supported. Being made aware of certain considerations or accommodations that could be made for BIPOC students may help create more trust between students and advisors and will lead to a greater sense of belonging and inclusion.

While general knowledge and guidance are always beneficial, most of the above-mentioned interactions mainly require two resources: funding and available personnel. University resources and external fundraising opportunities must be identified and/or applied for if grant money for busing is to be secured for UNH’s Ocean Discovery Day. Coordination efforts are also required between interested parties (e.g., the SMSOE and local school districts) in order to develop actionable plans for future collaborations. Lastly, and perhaps most importantly, these lines of communication must be maintained, and funding must continue to be secured if any plan for improvement is to be successful. It is therefore pertinent for our pod to identify individuals or groups that have the resources and authority to perform the tasks we have identified so that we can encourage positive collaborations with communities of color.