

Diversity, Equity and Inclusion: Current Conditions and Best Practices across the National Sea Grant Network

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INTRODUCTION

The National Sea Grant College Program is a network of 33 programs that work on coastal, marine, and Great Lakes research, extension, and education efforts to serve the unique coastal communities in their states. Diversity and inclusion were first recognized as “cross-cutting principles” in the 2018-2021 Sea Grant Strategic Plan. Depending on state priorities, Sea Grant programs address issues of diversity, equity, and inclusion (DEI) with distinct approaches ranging from informal to formal efforts and strategies.

In 2016, a Sea Grant Community of Practice (CoP) on Inclusion and Diversity (SGID) was formed to conduct a systematic analysis and application of DEI principles across the network. As a result, a 10-year network visioning effort, “Looking Outward and Reaching Inward: Building Sea Grant Resilience from the Lens of Diversity, Equity, and Inclusion,” was initiated to help Sea Grant reach broader audiences by embracing and adopting best practices regarding DEI. Sea Grant program personnel are defining their roles in advancing DEI, reviewing current conditions, and building awareness of best practices across the network. The SGID CoP has representation from all 33 Sea Grant programs, as well as the National Sea Grant Office and Sea Grant Advisory Board.

The CoP’s vision is that Sea Grant empowers coastal communities to be resilient in the face of change. To that end, Sea Grant must implement initiatives to embrace DEI to proactively engage, reflect, and serve the diverse populations of coastal communities. The CoP envisions Sea Grant as a champion of DEI principles in which all coastal community members are respected and valued. The CoP defines DEI as core values or principles for Sea Grant in the following way:

Diversity

Sea Grant embraces individuals of all ages, races, ethnicities, national origins, gender identities, sexual orientations, disabilities, cultures, religions, citizenship types, marital statuses, education levels, job classifications, veteran status types, and income, and socioeconomic status types. Sea Grant is committed to increasing the diversity of the Sea Grant workforce and of the communities we serve.

Equity

Sea Grant provides individuals and communities voice and opportunity in decision making. Sea Grant is committed to a policy of equal opportunity for all persons and does not discriminate. Sea Grant works to challenge and respond to bias, harassment and discrimination.

Inclusion

Sea Grant is committed to building inclusive research, extension, communication and education programs that serve people with unique backgrounds, circumstances, needs, perspectives and ways of thinking. Sea Grant cultivates a sense of belonging among staff, partners, and communities served.

In other words,

*“Diversity is where everyone is invited to the party.
Equity means that everyone gets to contribute to the playlist.
Inclusion means that everyone has the opportunity to dance.”*

- Robert Sellers, Chief Diversity Officer at the University of Michigan

Dimensions of DEI pertain to well-known human demographic indicators and differences in environment. Human demographic indicators include disability, age, ethnicity, gender, race, and sexual orientation, among others. Differences in environment refer to broad categories of environment types that make up a community.

The full range of environment types should be considered in Sea Grant programming. The list below was generated by the National Research Council in 2012 and adapted for the Resilience America Roundtable in 2015 (NASEM 2017). They coincide with the community capitals framework formulated by Flora and Flora (2007).

Environment Types

- social/wellness environment (social capital) – the capacity for people to connect with each other, dependent on social norms of behavior and networks
- human environment (human capital) – the sum of people’s skills, knowledge, labor and good health
- financial/economic environment (financial capital) – level, variability and diversity of income sources and access to financial resources
- physical/built environment (physical capital) – critical infrastructure like homes, roads and power grids
- natural environment (natural capital) – natural resources and associated ecosystem services
- governance/leadership environment (political capital) – community power dynamics including the ability to influence and enforce policy, rules and regulations

In some communities, the social/wellness environment (social capital) is marked by cohesive vision and strong interpersonal networks among community members. In others, conflict is rampant and people are not well connected. Being aware of these social dynamics is critical to engaging with community members and hearing all voices on an issue. Another example relates to the natural environment (natural capital). Young people in an urban area may be familiar and comfortable with nature where they live (e.g., city parks, community gardens), but less comfortable and possibly unequipped (i.e., without access to hiking boots or a tent) to participate in an education program that requires hiking, camping or spending time in a national forest in a more remote location. Lack of exposure could negatively influence their willingness to participate.

The CoP views the principles of DEI as commitments that encourage Sea Grant programs to include multiple perspectives when addressing complex societal concerns. Scientists may perceive and communicate data distinctively from policymakers, community leaders, media,

interest groups, and the public. We live in a world where diverse perspectives may conflict with one another, yet be simultaneously valid. Some communities have easy access to decision makers, while others struggle to have their voices heard. To better communicate complex scientific data and create actionable outcomes, Sea Grant must hone its strategies to include diverse audiences, and these strategies must be tested and evaluated.

The primary focus of this paper is on specific DEI topic areas that feature case studies submitted by Sea Grant programs. These case studies outline best practices for applying DEI principles across the Sea Grant network. DEI topic areas include:

- Research: Broadening Participation and Building Capacity
- Extension: Equitably Serving our Coastal Communities
- Education: Inclusive Pre-K - 12th Grade Programming
- Communications: Reaching an Array of Audiences
- University Student Connections: Expanding the Next Generation Workforce
- Environmental Justice
- Professional Development
- Recruiting and Retaining a Diverse Workforce

What follows is (1) a discussion of why Sea Grant should embrace DEI, (2) an evaluation of the strengths, weaknesses, opportunities and threats (SWOT) for Sea Grant to address each DEI topic area, and (3) the DEI topic areas and related case studies.

WHY EMBRACE DIVERSITY, EQUITY, AND INCLUSION?

Sea Grant's relevance and success in providing valued research, education, and extension services is dependent on adapting to the needs of an evolving coastal population. The U.S. is projected to be more racially and ethnically diverse in the coming decades. By 2055, the U.S. will not have a single racial or ethnic majority if trends continue (Pew 2015). Awareness of population demographic change is necessary to understanding which communities are well served by Sea Grant and determining which ones require more attention.

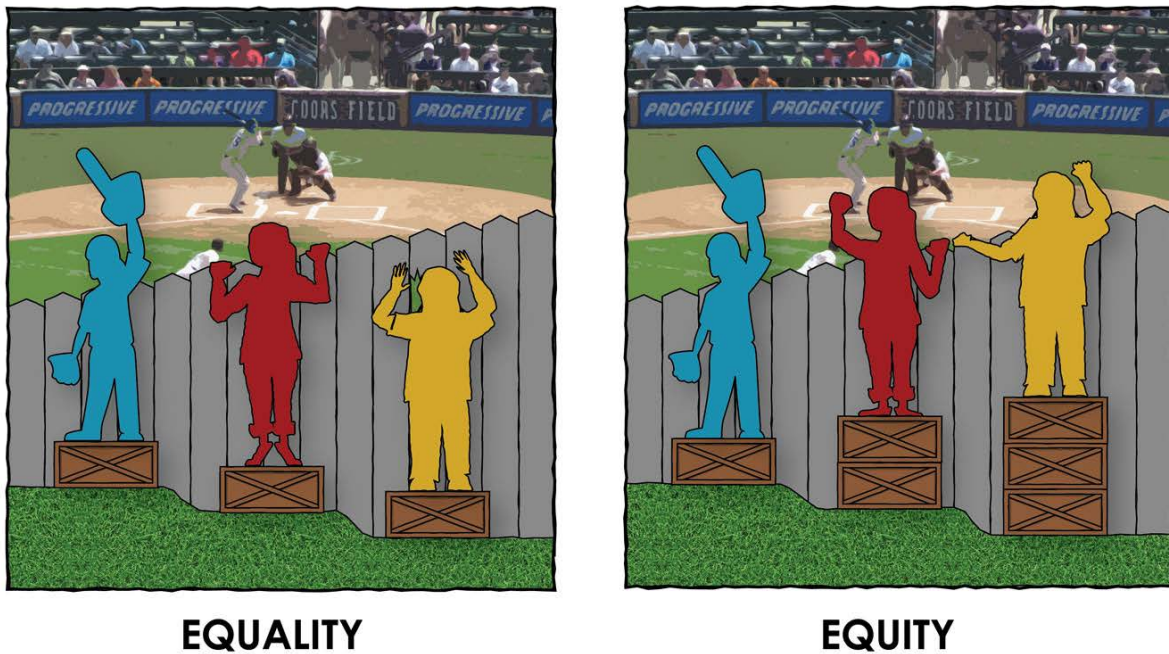
In part due to historical inertia, public awareness of Sea Grant programs and services may be limited to our traditional stakeholders, who may or may not reflect the changing demographics of the communities in which we work. This presents a challenge, and an opportunity, to explore new relationships and seek out non-traditional partners. Without acknowledging the need to challenge business-as-usual (even when successful), the future accomplishments and effectiveness of Sea Grant programming will be constrained and diminished.

Sea Grant programs are strengthened by including diverse voices in issue identification, problem solving, and decision making. Consider the distinct perspectives a long-term resident, an engineer, and an economist bring to a flooding problem. The long-term resident is aware of local flooding history and can identify locations where flooding occurs. The engineer models water flow and determines quantity of flooding potential. The economist calculates economic impacts of a flood event. All provide insight and data to motivate actions to reduce flooding risk. Similarly, people who are different from one another in demographic dimensions (e.g., race and gender) or geography (e.g., urban and rural) bring unique information and skills to a task which will likely result in a better decision-making processes.

Contributing to coastal community resilience requires making Sea Grant programs accessible and useful to historically marginalized and vulnerable populations. Social and economic vulnerability combined with physical hazards, such as sea level rise, pose significant threats to coastal communities. Addressing these issues requires new partnerships, investments, and ways of doing business.

Equity must be embraced to ensure that diverse voices can be heard. Consider the example in Figure 1 of three people watching a baseball game over a fence. In the illustration on the left, only the blue person on the far left can fully see the batter, even though each person is standing on the same size (equal) box. Because the fence shifts in height, the red and yellow individuals will miss the pitch. In the illustration on the right, each person has a different number of boxes (equitable), so all three can cheer on their favorite players. Sea Grant staff must consider the structural barriers and appropriate strategies to including various population groups to ensure access to participation in programming.

Figure 1. Equality versus Equity



Source: Kuttner (2015)

Diverse groups can minimize some of the negative impacts of groupthink, a process in which certain ideas, practices, and traditions become dominant regardless of their efficacy. Interacting with individuals who are different forces group members to consider alternative viewpoints and expect that reaching consensus will take effort.

When DEI principles are applied, they help to cultivate a sense of belonging among staff, partners, and stakeholders. Belonging, when honed, can reduce stress levels, improve physical health, emotional well-being, and performance (Walton et al. 2015). Recognizing staff and stakeholders as whole individuals and relating to one another beyond professional ties and project needs is essential to successful program outcomes as well as staff and partner retention. Being treated with respect and as a valued member of a group activates reward centers in the brain, which is a significant motivator in the workplace regardless of financial compensation (Lieberman and Eisenberger 2009).

Formally embracing DEI principles will allow Sea Grant to broaden participation and support of its programs. It will help to ensure that stakeholders are heard, which will ultimately increase project success and social acceptability within communities impacted by Sea Grant initiatives. By weaving DEI principles into work plans, day-to-day activities, and interpersonal interactions, Sea Grant's research, extension, and education programs will be better equipped to serve America's coastal communities.

STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS

A SWOT analysis was conducted to uncover Sea Grant’s strengths, weaknesses, opportunities, and threats in advancing DEI principles. The analysis relies on information gleaned from conversations facilitated by the CoP and surveys of Sea Grant staff. The SWOT analysis provides a broad look at where Sea Grant can build on current successes and implement methods to correct weaknesses or mitigate threats.

Sea Grant’s greatest strengths are the well-established relationships that serve as an important foundation from which to build. Sea Grant has connections with other professional organizations that are also committed to DEI and want to help advance Sea Grant’s organizational performance and program success. Sea Grant’s weaknesses are a mix of societally systemic and internal, process-driven issues that need attention. Addressing these weaknesses is important for improving organizational performance and stakeholder engagement.

Sea Grant’s opportunities include both internal (administrative, organizational) and external (programmatic) elements. These opportunities provide Sea Grant with areas of focus that build on current strengths and provide improved opportunities for the program to progress in addressing DEI issues. There is some overlap between Sea Grant’s threats and weaknesses that must be recognized and managed as Sea Grant implements new initiatives to apply DEI principles.

STRENGTHS
<ul style="list-style-type: none">• Institutional support: NOAA Diversity & Inclusion Strategic Plan 2017-19; Sea Grant Strategic Plan 2018-21• Federal partners: Relationships with NOAA and other federal agencies• University partners: Host university resources available, including institutional support like DEI policies and programming• Coastal community relationships: Connections with community members and opportunities to learn from their knowledge, experience, cultural backgrounds, skills and talents; Relationships may be formal (e.g. advisory boards) and informal (e.g. collegial relationship between extension agents and community members)• Partnerships and alliances with other organizations implementing DEI efforts; Access to mentors• Utilization of science and evidence-based approaches• Honest broker role: Knowledge and expertise in facilitation strategies• DEI CoP: Commitment to cross-network collaboration among Sea Grant programs and groups (e.g. Sea Grant Extension Assembly, Fisheries Extension Network)

WEAKNESSES

- Limited resources: Insufficient staffing, funding and time to devote to underserved communities
- Incongruence of priorities among stakeholders and Sea Grant focus areas
- Lack of trust in stakeholder communities
- Disparity in education opportunities among underserved communities
- Geography: Office location and coastal community familiarity affects staff engagement
- Cultural, language and literacy barriers
- Feeling unsafe or insecure in distressed communities
- Lack of needs assessments of targeted audiences
- Implicit bias (e.g. Tendency to prefer or associate with “similar” individuals and groups)
- Lack of awareness of research and best practices to engage diverse audiences
- Lack of staff professional development on DEI issues
- Relative lack of diversity in traditional Sea Grant science/focus area fields
- Lack of racial/ethnic, gender and age diversity among Sea Grant advisory board members and staff

OPPORTUNITIES

- Establishment of DEI principles as core values
- Collaboration with Sea Grant programs, NOAA and university partners
- Engagement of diverse communities and constituencies: New opportunities to build and embed community trust
- Ability to increase diversity in Sea Grant workforce: Broadening of staff perspectives, improving the ability to problem solve and be effective
- Access to multilingual and multicultural college students
- Establishment of RFPs at national/regional level to conduct needs assessments with new communities as well as implementation funds
- Use of smaller tactical advisory committees to ensure DEI principles are followed
- Assignment of a regional or state Sea Grant program staff resource liaison for DEI
- Tailored messaging to targeted audiences
- Flexible communication strategies that consider language, literacy, and dis/abilities of target audiences

THREATS

- Political & budget uncertainty
- Limited resources
- Business as usual culture
- Competing priorities
- Unconscious Bias

TOPIC AREAS AND CASE STUDIES

This paper includes case studies that are relevant to programmatic and administrative topic areas. Each topic area begins with an introduction, followed by challenges faced by Sea Grant programs, strategies to address the topic area and general best practices employed across the Sea Grant network.

The following case studies were provided by a number of state Sea Grant programs. They are organized using the Relevance, Response, Results and Recap (RRRR) format from Sea Grant's PIER (Planning, Implementation, Evaluation and Reporting) framework, with slight modification. The "Recap" section has been retitled "Lessons Learned" and provides guidance for programs that wish to initiate similar efforts.

This paper cannot fully capture the diverse applications of DEI principles being employed by Sea Grant programs or professionals across the Sea Grant network. An ongoing online database of case studies could be developed to further advance cross-program learning and collaboration.

Research: Broadening Participation and Building Capacity

Research is the foundation of the National Sea Grant Program. It provides credibility to Sea Grant's extension and outreach activities and ensures that decision-making is grounded in the best available scientific knowledge and understanding. Students that are engaged in the research process acquire skills that are imperative for a competitive workforce. Investments in research enable Sea Grant to develop meaningful partnerships with university researchers, NOAA line offices, other funding agencies, and coastal stakeholders.

Barriers to integrating DEI principles into Sea Grant's research program include limited funds, staff time, and unestablished relationships with universities/colleges and communities that serve underrepresented populations. A 2009 report by the Sea Grant Advisory Board shows that research dollars have shrunk over the past few decades. Overall, Sea Grant appropriations from Congress has remained level funded. This is an impediment to building a strong and diverse Sea Grant research program. Personnel and time are necessary to understand the needs of diverse constituents and build sustained relationship with HBCUs, tribal colleges and universities, and other minority-serving institutions

Data on demographic and environmental diversity of communities that are impacted by Sea Grant-funded research are lacking. Understanding the populations that are served by Sea Grant-funded research is necessary to ensure that requests for proposals meet the needs of underserved communities. Training on implicit bias for Sea Grant staff is not always offered or available, but it is important in terms of understanding the barriers to diversifying research investments and considering how to ensure fairness in policies, procedures, and actions related to managing the Sea Grant research program.

Sea Grant can implement strategies to build capacity and make its research program more diverse, equitable, and inclusive. Some organizational strategies to do this include providing implicit bias training to reviewers and panelists to help effectively manage and correct inaccurate perceptions; collecting baseline data on diversity aspects of Sea Grant-funded research projects, institutions, and principal investigators; ensuring that research supports the diversity of the communities that the program seeks to serve; and building capacity at under resourced institutions. In addition, a triple bottom line approach to grant making would emphasize the social, economic, and environmental impact of research proposals, ultimately broadening the types of projects funded.

Stronger connections with other NOAA line offices should be made so Sea Grant is recognized as a vehicle through which to manage and implement research projects that embrace DEI principles. Additional research dollars could support building capacity at under resourced institutions. Several universities have a campus coordinator representing each of the major public universities in the state. Sea Grant could work with coordinators to meet with minority faculty and students while visiting colleges around the state to improve awareness of research funding opportunities. These actions will strengthen relationships with Sea Grant-funded researchers and the communities they serve, leading to new collaborative opportunities and collective problem solving as well as opportunities for additional research funding.

Case Study 1: Increasing Institutional Diversity in Research Portfolios Georgia Sea Grant

RELEVANCE: Every two years, Sea Grant programs solicit proposals from university investigators to conduct research on focus areas identified in their strategic plans. A site review of Georgia Sea Grant (GASG) reported that investments in research needed to increase to the required 40% investment level. The report also noted the need to diversify the program's research portfolio, including the institutions receiving funding, principal investigators, and projects.

RESPONSE: GASG's leadership made a concerted effort to meet with administrators and investigators at Georgia institutions that rarely interacted with the Sea Grant program. GASG sought to learn more about marine and coastal research conducted at these institutions to build new partnerships and inform investigators about funding opportunities available through GASG. These visits took place during the strategic planning process. GASG also expanded its research listserv to improve communication with representatives at different universities. GASG also funded smaller program development projects from investigators at minority-serving schools and colleges. During the proposal review process, consideration was also given to sponsor a "discipline-balanced" portfolio that supported research in physical science, social science, engineering, and marine education. GASG also organized a research symposium, inviting extension and education faculty, investigators from institutions traditionally connected to the program, as well as newly engaged researchers. The symposium was designed to be informative and interactive and included networking opportunities for participants.

RESULTS: GASG received a record number of 45 proposals from 10 institutions in Georgia, including HBCUs, two- and four-year colleges and universities, and research-1 universities. The program ensured that proposals were evaluated by a diverse group of peer reviewers and panelists (i.e., diversity in terms of ethnicity, gender, expertise and institutions represented). GASG funded an array of physical science, social science, and engineering research projects. The final portfolio of research projects awarded during GASG's FY2018-20 funding cycle included more investigators from institutions other than the University of Georgia, GASG's home institution (5 out of 7 in number), which was not the case in recent research cycles.

LESSONS LEARNED: Engaging diverse institutions and researchers required the development of a systematic and long-term outreach plan by GASG's leadership. It required a critical assessment of the institutional diversity represented in Sea Grant's research portfolio, and an honest acknowledgment of gaps in terms of engaging diverse researchers and institutions. Outreach to underrepresented institutions was time and resource intensive. Professional training on implicit bias helped the leadership team understand why additional outreach was needed for the research program.

Case Study 2: Collaborative Community Research North Carolina Sea Grant

RELEVANCE: Engaging diverse groups in research and science education can be improved by involving them in all aspects of the research process – issue identification, research methods, analysis, and sharing of results. While members of the public may have local knowledge of their own communities and environments, they oftentimes do not have the scientific expertise required to fully characterize a problem and craft science-based solutions. Conversely, academic experts may be knowledgeable of scientific principles and potential solutions to mitigate a problem, but lack the social and historical perspective to craft a solution that meets the needs of community of members.

RESPONSE: North Carolina Sea Grant (NCSG), in partnership with the William R. Kenan Jr. Institute for Engineering, Technology and Science, based at North Carolina State University, sponsors a competitive research funding opportunity using a collaborative research approach. It builds off the success of the N.C. Fishery Resource Grant Program, which between 1994 and 2003, encouraged cooperative research among commercial fishermen, recreational anglers, seafood businesses and university researchers. The Community Collaborative Research Grant (CCRG) program requires linking local knowledge experts with university researchers to develop new tools and approaches in coastal resource management. A NCSG extension staff person typically acts as a liaison for the research project and can continue community relations and applications beyond the life of the grant.

RESULTS: NCSG's CCRG program helps to build and contribute to trusted partnerships between university researchers and coastal community members. For example, a recently funded CCRG research project combined the expertise of leaders of a community development organization and an ecotourism researcher to determine additional investments needed to support the tourism

workforce on Ocracoke Island, a remote community on the Outer Banks of North Carolina. The project involved interviews and focus groups with employers and employees, including employees that primarily speak Spanish. The community partner on the project was bilingual and conducted one of the focus groups in Spanish so that all the community members could participate in the research project. The ecotourism researcher also funded a Spanish-speaking graduate student to assist with the research and translate the focus group data. Finally, the NCSG extension staff member assigned to the project spoke Spanish as well. The research results are more likely to be integrated into community decision making as the extension person's time is not funded by the CCRG program.

LESSONS LEARNED: The CCRG program is an example of how to integrate the perspectives of those with intimate knowledge of coastal communities into coastal research and decision-making. Targeted grant programs that emphasize community collaborations with scientists have the potential to produce science that is acceptable to a wide range of decision makers and user groups. Some challenges include the time and effort required to connect community stakeholders with researchers, the ability to find a mutually desired research question and methods, as well as ongoing financial support for the grant program.

Extension: Equitably Serving our Coastal Communities

Sea Grant extension programs are designed to effectively transfer science-based information from universities to user constituencies. Extension agents, also known as outreach specialists, provide a tangible link to coastal community members. The number and diversity of communities and the issues that extension agents are asked to address are growing. Determining which communities to serve can be a perplexing decision for an outreach specialist and requires thoughtful consideration.

Some coastal communities are underrepresented and/or underserved by Sea Grant extension service. A significant challenge to building outreach programs in underrepresented or underserved communities is the long-term commitment needed to build trust and establish relationships. Administrators may not be willing or able to support the level of commitment that's necessary to reach a new community. Extension specialists may lack experience in working with certain demographic or cultural groups. Language, literacy, and socioeconomic barriers can make connecting with communities more challenging. Financial hardship can make it difficult for low-income communities to participate in Sea Grant programs. Sea Grant facilities may be geographically distant from underserved communities, making it difficult to fill programs. Some communities are insular, mistrusting, or have had bad experiences with outside organizations that discourage cooperation. Employees may feel uneasy about working in high crime areas of distressed communities. Finally, there may not be adequate resources nor sufficient understanding of community needs to initiate effective outreach programs.

Sea Grant extension programs' strengths in engaging diverse audiences come from their experience in implementing successful outreach programs for many types of stakeholders. Developing a successful extension program generally includes three main steps: (1) assessing

community need, (2) developing and delivering the program, and (3) evaluating the impact. To successfully engage underrepresented and underserved communities additional time and resources may be needed for each step. Assessing community needs may require in-person interviews and/or attendance at community meetings that have no relationship to Sea Grant focus areas. Many under resourced communities have limited time to engage and may prefer to meet at already scheduled events. Developing and delivering programs for under resourced communities for example require additional steps – consideration of childcare needs, grant funding secured to provide attendance honorariums, and an understanding that unexpected issues are the norm. In evaluating impact, the number of people served is likely to be lower than in communities where engagement is easier. Reporting metrics will be less robust, so support from administrators for extension programming initiatives is key.

Case Study 3: Expanding Outreach on Fish Consumption Pennsylvania Sea Grant

RELEVANCE: Health concerns about the Delaware River’s PCB (polychlorinated biphenyl) and mercury contamination led Pennsylvania Sea Grant (PASG) outreach specialists to consider how to advise local anglers about wild fish consumption advisories. Even though a consumption survey had never been done in the area, views on the problem fell into two camps – one believing that no one ate the fish, and the other believing there were many subsistence anglers with a high risk of negative health impacts. It was common knowledge that Asian immigrants were shore fishing in great numbers, but specialists had little interaction with this angling community and were unaware of the languages spoken and cultural norms.

RESPONSE: In collaboration with the Partnership for the Delaware Estuary, PASG staff secured a grant to conduct an angler consumption survey with assistance from an experienced fish consumption survey specialist. Results showed that most shore anglers released what they caught or ate within recommended amounts. When the survey results were broken down by ethnicity, the study showed that a significant number of Vietnamese and Cambodian shore anglers consumed more than recommended amounts.

PASG developed a research objective and awarded a grant to a Temple University team to compare the effectiveness of various community engagement methods in the Asian immigrant community of Philadelphia. The survey findings were vital to plan the outreach approach. Since women cooked most of the fish caught, workshops focused on engaging wives and mothers in practicing cooking techniques that reduce fat-soluble contaminants. The Temple University professor was of Asian descent, and the project hired Vietnamese and Cambodian undergraduate interns who spoke the languages of the anglers and lived in the target communities. Temple University partnered with Penn State Extension Nutrition Links and an Asian community center to organize workshops in the community. This partnership was invaluable in determining appropriate communication materials and translating information to Cambodian and Vietnamese. Many of the older immigrants had a low level of literacy, so materials were designed to tell the story visually with a minimum of words. Three-dimensional props were developed to illustrate the steps in fileting, skinning, and trimming the PCB-heavy fat from fish.

RESULTS: Direct and indirect community engagement worked synergistically as residents altered their fish consumption practices to eat within recommended amounts. Shore anglers learned about the fish consumption advisories from multiple accessible sources: workshops, native language newspaper articles, and second hand from friends or relatives. Thus, the Philadelphia Vietnamese and Cambodian immigrant communities became part of a robust informal communication network that widely shared safe fish consumption messages.

LESSONS LEARNED: Sufficient funds to cover community partner participation need to be considered to deliver successful extension to underserved communities. It can take much more time and money to achieve the same result as when serving other audiences. PASG provided the Asian community center with modest funding which did not cover staff time, but they agreed to help because they recognized the health risks PASG sought to address. Outreach specialists applied for several additional grants without success. Most of the fish consumption advisory outreach effort ended when grant money ran out and when outreach needs shifted. Research findings, extension resources, and community needs are always evolving. Outreach specialists must be agile to monitor and adapt to new needs, which will require ongoing learning to engage with new audiences.

Case Study 4: Activating Connections a Few Links Away Virginia Sea Grant

RELEVANCE: Historic and socioeconomically vulnerable communities in Hampton Roads, Va., are struggling to be resilient to coastal hazards due to increasing flooding linked to sea level rise, economic instability, and multiple urban issues, such as food deserts. Given the complex interactions between resilience, social justice, and economic instability in rural, urban and suburban coastal communities in Virginia, effective integration of knowledge and diverse perspectives are needed to spur innovation and create feasible, effective solutions to hazards.

RESPONSE: Virginia Sea Grant (VASG) extension partners are leveraging a seven-university partnership to address coastal urban resilience challenges by working with university students from primarily African-American racial minority groups. They establish network relationships to activate connections to underrepresented groups that are 1-2 links away from VASG. A few examples of these collaborative partnerships and projects are provided below.

VASG funded a project with the non-profit Wetlands Watch to generate designs to improve the resilience of a historic African-American neighborhood located along the Elizabeth River in Norfolk. Engineering and architecture students from minority-serving institutions, Old Dominion University and Hampton University, engaged a local neighborhood association to understand community priorities and generate ideas for shoreline, road infrastructure and private property designs that could reduce flooding while retaining the character of the community. The designs were refined by professionals and contributed to a successful grant proposal to the U. S. Department of Housing and Urban Development. The resulting funded project is implementing these resilience designs as a demonstration for the region.

A VASG extension partner at Old Dominion University established a network of community organizations, including neighborhood associations, non-profits, and government offices that have coastal resilience needs. These organizations are matched with university faculty and students to provide help through class and student projects. Among the first of the projects was oyster reef restoration, which involved engaging communities of color in shoreline resilience activities and environmental education for an urban neighborhood undergoing shoreline restoration.

VASG partners with Virginia Tech's Seafood Extension Center in the City of Hampton, Hampton University's biology program, and a VASG long-term summer internship program to fund an Aquaculture Ambassador program. Students of color, typically underrepresented in aquaculture fields, from Hampton University attend trainings at the Center and participate in aquaculture applied research projects. Some take on community projects, such as setting up an aquaponics project in an urban food desert. This investment has led to continued workforce development as one of the Aquaculture Ambassadors secured a Knauss fellowship.

RESULTS: Through partnerships, VASG has seeded multiple programs, built new professional relationships, and gained a more diverse professional network in flood-prone, socioeconomically vulnerable communities on Virginia's coast. VASG extension partners regularly engage students of color to address coastal resilience in the urban and suburban area. Students at minority-serving institutions created coastal urban design projects that are generating new ideas for African-American neighborhoods that are experiencing increased flooding. Residents of the Southeast Newport News community are better engaged with their local government to address emergency management inequities. VASG extension partners have also provided aquaponics expertise to nurture local small businesses while helping to provide local fresh food to an underserved area.

LESSONS LEARNED: VASG personnel utilize their connections with partners to engage with minority-serving institutions and community groups in urban and suburban neighborhoods challenged by social inequities. They have launched discussions, listened, and sought to explore mutually beneficial projects. Successful projects have strengthened professional relationships, which have grown into long-term partnerships with greater credibility and trust. These relationships demand patience, listening, empathy, and long-term commitment. Some underrepresented groups have expressed frustration with universities who partner to obtain grants and then disengage when the grant ends, a practice VASG seeks to avoid. VASG extension partners actively pursue partners to simply connect them to other parts of the network. VASG leadership strive to create an integrated program with a network that reflects the diversity of the communities they serve. Commitment at the leadership level is critical to ongoing support of such initiatives. Challenges remain in nurturing these long-term relationships which can take many years to build. VASG personnel must sometimes overcome communities' past experiences with other university programs, and evolve their approach over time as new partners join and staff change. Thus, on-going monitoring of the network, its connections, and the partners of our partners, requires substantial time and effort.

Case Study 5: When Cultures Collide Louisiana Sea Grant

RELEVANCE: The Vietnam War prompted a massive exodus of South Vietnam refugees, many of whom settled in Louisiana's coastal fishing communities. They brought their knowledge of fishing and applied it to the shrimp, tuna, and shark commercial fisheries in the northern Gulf of Mexico. These immigrant families labored hard fishing in the Gulf and in the seafood processing plants. Fishers of Vietnamese heritage eventually grew to become a third of the Gulf commercial fishing fleet.

With this prosperity came tremendous tension with Anglos from communities who feared that traditional Vietnamese fishing practices and gear created an unfair advantage that threatened the fisheries and their livelihoods. Mississippi River bar pilots, responsible for guiding ships in the area, raised issues of navigation hazards regarding Vietnamese fishing boats and gear; bridge-to-bridge communication was not occurring between Anglo and Vietnamese vessels. This prompted the Anglo fishing community to lobby the Louisiana legislature to enact a ban on using some of the most effective Vietnamese gear. Most in the Vietnamese community did not have sufficient command of English to understand the legalese and did not contest the new regulations. Enforcement of the new regulations, which many Vietnamese boat captains ignored, further aggravated the cultural conflict. For example, the Louisiana Department of Wildlife and Fisheries inflamed the situation by setting-up a sting operation under the guise of an informational workshop and arrested scores of Vietnamese shrimpers.

RESPONSE: Louisiana Sea Grant (LASG) extension agents made it a priority to engage the Vietnamese fishing community to learn their needs and knowledge gaps. The first project they undertook with Vietnamese fishers was to understand the real and perceived impediments to safe Mississippi River navigation from non-complying Vietnamese fishing gear. Over time, the agents learned who was genuinely open to bettering their situation and willing to be an early adopter. A breakthrough happened when a NOAA Fisheries statistician of Vietnamese descent involved with Gulf shrimping introduced one of the agents to a respected Vietnamese community leader. Nguyen became instrumental in helping the LASG extension agents work with the fishing communities to recover from Hurricanes Katrina, Ike, and the BP Horizon oil spill. The agents put together a team of Vietnamese professionals and a Vietnamese-American university student to develop Vietnamese language outreach on legal issues and sustainable fisheries practices, and translate the U.S. Coast Guard regulation manuals for Vietnamese anglers. The senior extension agents mentored the Vietnamese-American university student, a first-generation college student, on fisheries and community engagement practices. When she graduated, she was hired as an extension agent and LASG's first hire of Vietnamese descent.

RESULTS: LASG established lasting relationships with the Vietnamese community that resulted in better fishing practices and the career development of a Vietnamese-American college student. LASG leadership noted the cross-cultural progress and supported the hiring of a Vietnamese-descent extension agent. During countless extension events, the new extension hire's guidance

and wisdom built professional credibility and trust within and between Vietnamese and Anglo fishing communities. LASG grew to serve the commercial fishing population of Louisiana with parity. The new hire went on to earn a Master's degree and a respected position as a fisheries extension agent serving multiple communities. Another extension agent involved in the project received a '2010 Citizen of the Year' award from the Radio Free Vietnam network for his contributions within the Vietnamese fishing community. In 2017, LASG agents received special recognition from the U.S. Coast Guard Marine Safety Unit for their assistance as Vietnamese translators during an October search and rescue operation.

Diversity in shrimp fishing practices eventually led to enhancements to fisheries gear that excluded turtles and reduced finfish bycatch. Vietnamese fishing gear, originally perceived to provide unfair fishing advantages, was adapted to create the "skimmer," which blends the western butterfly net and the Vietnamese "chopsticks gear which is pushed in pairs rather than towed. Eventually two Vietnamese-Americans, a shrimp dock owner and a fisherman, accepted appointments to an eight-state coalition that promoted the sale of domestic shrimp, viewed by both Anglo and Vietnamese fishermen as a milestone in Vietnamese acculturation.

LESSONS LEARNED: Making a commitment to learn and understand the culture and needs of Vietnamese and Anglo communities helped extension agents build trust and engage the fishers who wanted to improve the situation and serve as models for their community. These commitments helped to bring the Anglo and Vietnamese communities closer, thus healing cultural misunderstanding. These close ties were especially evident as the groups came together to recover their fishing communities after devastating hurricanes and the BP Horizon oil spill. By translating information, nurturing the career development of a Vietnamese-American marine extension agent, and exploring differences between cultures to find innovative solutions to fisheries conflicts, LASG extension agents could create cross-community ties and help the Vietnamese community better integrate into the American fishing industry.

Education: Inclusive Pre-K - 12th Grade Programming

As affirmed by wide participation in workshop sessions at the Mid-Atlantic Sea Grant Regional Extension Meeting and Sea Grant Week in 2016, Sea Grant programs are determined to improve their programs and activities with regards to DEI. This will involve developing and implementing accessible, equitable, and inclusive education programs for Pre-K-12 students. Students often report that what they learn in science lacks relevance to their lives. Thoughtful consideration is required to effectively engage traditionally underrepresented young people in coastal, marine, and Great Lakes science education.

A 2017 survey completed by members of the Sea Grant Education Network showed that increasing and improving services to under resourced and diverse audiences is a high priority; however, there are many challenges and obstacles associated with doing so.

Surveyed educators noted a lack of targeted and sustained professional development training for Sea Grant personnel on diversity and inclusion issues. Respondents expressed frustration in their lack of knowledge and training on the research and best practices for working with underserved groups and diverse populations. Other challenges were lack of resources including; funding, staffing, and staff time; lack of qualified translators to help with language barriers; and the lack of a diverse set of role models throughout the Sea Grant network, including marine and environmental educators. Poverty and homelessness within coastal communities were noted as barriers as they can preclude participation in Sea Grant education programs. The cost of transportation to programs and lack of adequate clothing (e.g., outdoor apparel) are some examples of resources that, when absent, lower or prevent attendance in Sea Grant education programs.

Some respondents indicated they had some assets at their disposal to reach more diverse groups of students, but none were available network-wide. Respondents noted available assets at their program's host institution, such as multilingual and multicultural college students willing to assist with translation and interpretation, and access to university-based diversity and inclusion specialists. Established partners and partnerships were also viewed as key assets. Partners include schools in underserved areas; education groups, such as NMEA (National Marine Educators Association), NAAEE (North American Association for Environmental Education, NSTA (National Science Teachers Association); after-school programs (e.g., 21st Century Learning Centers); early childhood education (e.g., Head Start); and free choice learning institutions (e.g., Scouts, 4-H, Boys and Girls Clubs).

Targeted outreach to community groups representing underserved populations is needed. Best practices to achieve this include connecting with science curriculum specialists in underserved districts, seeking out funding for long-term support and assistance to underserved groups, developing scholarship programs for exemplary programs that are currently fee-based, and advocating for the increase of the number of bilingual and racially diverse agents working in the field. In addition, education programming that includes families from underrepresented populations is needed to build environmental literacy. Sea Grant educators should seek out and get involved with free-choice learning groups and after-school programs that work with diverse populations. They also need to ensure that education programming is culturally relevant to students.

Sea Grant educators view the adoption of diversity and inclusion as a cross-cutting goal in the 2018-21 National Sea Grant College Program Strategic Plan as a step in the right direction. Other ways that respondents felt the National Sea Grant Office could help this effort include compiling a document on best practices for engaging underrepresented and diverse audiences, producing multilingual materials, and urging NOAA education to do the same, providing dedicated funding for training and sustained professional development, and making a concerted effort to recruit more diverse Sea Grant staff and advisory board members. Metrics need to be created to ensure that state achievements in DEI are recognized and are counted as part of reporting and program assessment.

Case Study 6: Partnering with Community Learning Centers New Jersey Sea Grant

RELEVANCE: The 21st Century Community Learning Center (CCLC) program provides federal funding for the establishment of community learning centers that provide academic, artistic, and cultural enrichment opportunities for children in high-poverty and low-performing schools, to meet state and local standards in core academic subjects such as reading, math, and science. The program is intended to offer a broad array of activities for students, and include families and the community in the educational process. It does not necessarily have the staff or materials to provide science-based programming.

RESPONSE: NJSG staff initially became familiar with CCLCs through a project funded by the National Science Foundation that connected science-based organizations with local schools. The project resulted in new relationships between NJSG educators and local school personnel, eventually leading school staff to connect NJSG to CCLCs. Each year NJSG educators reach out to designated CCLCs to offer assistance with science-based programming. They also attend a state-wide annual conference about after school programming to build relationships with after school program administrators and staff.

RESULTS: NJSG educators now routinely provide programming to four CCLC's throughout the state that serve predominantly minority populations of students in grades K-8. For example, for the years 2014-17, NJSG educators delivered 12 different workshops each year on a variety of marine-related topics at one CCLC location. They have four year-round educators supported by NJSG funds and 40 seasonal educators supported by cost share with schools or grants. Connecting with CCLCs has allowed NJSG educators to serve a more diverse population of K-8 students.

LESSONS LEARNED: CCLCs are effective community partners that value the science-based education programming offered by NJSG. Because CCLCs depend on grand funds, NJSG staff have gone a step further than simply providing educational programming and assisted them in grant writing. In addition to providing marine science programming at each center, NJSG staff serve on their advisory boards and volunteer groups that help sustain these informal education outlets, going above and beyond their essential duties as educators.

Communications: Reaching an Array of Audiences

The Sea Grant Communications program works to support the implementation of research, extension, and education programs through effective internal and external communication mechanisms. The goal of the communications program is to amplify Sea Grant's message and connect individuals to our programs and specialists. Incorporating DEI principles into Sea Grant's communications program is essential to broadening awareness and increasing the visibility of Sea Grant's programmatic priorities. By trade, communicators have the experience and skillset needed to effectively convey information to various target audiences.

Communicators work with research, education, and extension specialists as well as with

management teams, to help develop communications skills and products that will enhance DEI initiatives in Sea Grant programs and across the network.

Challenges to incorporating DEI in communications and across programmatic areas include a lack of awareness about the needs and preferred communication channels for under resourced or underserved communities. Researching the needs of a community or target audience may require additional time and effort, as will creating multiple deliverables to reach a variety of audiences. Some programs might lack the necessary tools or resources to create communications deliverables that are accessible to diverse audiences. For example, finding appropriate closed captioning software needed to create videos for people with vision or hearing impairments, or producing content in other languages without translators on staff may be challenging.

A clear strategy to incorporate DEI considerations involves diversifying target audiences by identifying new outlets through which to disseminate communications products. Connecting with a community leader or other trusted sources of information to learn preferred channels of communication before developing a product helps communicators understand what is effective for a given community. Being aware of population demographics of coastal areas and building sustained relationships with untapped target audiences can enhance communications strategies designed to improve DEI. Sea Grant communicators should strive to develop products that are accessible to vision and hearing impaired populations and geared towards the appropriate education or reading level of the end user. Pictorial communication products over written products might be more appropriate for communities with low literacy rates or non-English speaking audiences, as well as those with a visual learning style. Sea Grant communicators need to be aware of potential language/vocabulary issues within a community and seek out relevant, diversity-focused best practices and style guides to develop accessible deliverables. Communicators can identify opportunities to engage other language speaking resources to conduct and review translations when needed. Communicators should reflect on best practices to consider DEI in all communication modes, including websites, video, newsletters, social media, reports, press releases, internal communications, promotional materials, advertisements, photography, presentations, and others.

Case Study 7: Minimizing Dangers Posed by Ghost Nets Wisconsin Sea Grant

RELEVANCE: Tribal, commercial, and recreational fishermen tap Lake Superior's fisheries. Tribal and commercial fishermen whose target species is whitefish deploy trap nets, anchored to the lakebed and stretching for miles. These nets can sometimes break free, drifting as a form of marine debris that poses a hazard to recreational anglers who may become entangled, endangering their fishing equipment and potentially swamping their boats and capsizing, which can be deadly in the year-round cold waters of the lake.

RESPONSE: Two management agencies are responsible for the Wisconsin waters of the lake; the Wisconsin Department of Natural Resources (WDNR) and the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), which represents the 11 Ojibwe tribes in Wisconsin,

Minnesota, and Michigan. There is a longstanding relationship between the two agencies, but by mutual admission, it has not always been an amicable or productive one. Yet, both recognized the need to address the ghost net issue to ensure lake safety. Wisconsin Sea Grant, with the assistance of a grant secured from the NOAA Marine Debris Program, brought the two agencies together, along with the Apostle Islands Sport Fishermen's Association, to further education on ghost nets among recreational anglers. Deliverables included a [13-minute video](#), and a ghost net kit, distributed to anglers and including instructional material along with a small flagged weight to mark a ghost net for reporting and later collection by either WDNR or GLIFWC rangers. Partners helped develop the video and it was then reviewed by a small group of sportfishers to ensure its effectiveness. A representative group of stakeholders helped develop the posters and graphics were then tested at local sports shows to gauge those which resonated the most with a wider group of stakeholders. Posters were shared through bait shops and at boat landings.

RESULTS: Since 2015, the video has been viewed nearly 2,500 times. The ghost net posters and kits are branded with a memorable image of a fish skeleton and have proven recognizable and effective in raising awareness among the target audience according to the sport fishermen's leadership. Since 2015, more than 10,000 feet of ghost net has been removed from Lake Superior. When an angler became entangled in a net in the summer of 2016, he was able to free himself by following the steps outlined in the Sea-Grant produced video and lost only some fishing equipment.

LESSONS LEARNED: This effort demonstrates the value of engaging tribal partners who share a common resource with the majority population. The project benefited from a carefully cultivated relationship of trust brokered by Sea Grant between the WDNR and GLIFWC. The work also did not seek to impede tribal fishing rights, only to address what can be a consequence of that harvest—a ghost net. Finally, the initiative has been validated. Successes could be counted; the recovered ghost nets and the individual whose property, and possibly life, was saved because he had viewed a video produced jointly by Wisconsin Sea Grant and the state and tribal management agencies.

Case Study 8: Communicating Risks to Fish Consumers Michigan Sea Grant

RELEVANCE: Fish from the Detroit River were found to contain high levels of mercury and Polychlorinated biphenyls (PCBs), a group of organic compounds used in the manufacture of plastics that can cause health problems. Fish consumption advisories have been developed by the U.S. and Canada for some commonly caught species. Researchers wondered who was most at risk, how contaminated were fish species that were not routinely tested, if new or existing pollution sources were to blame, and if there were contaminant hot spots.

RESPONSE: In 2007, Michigan Sea Grant funded a research team led by Wayne State University to investigate the drivers of contaminants that lead to fish consumption advisories and identify research-based approaches to creating fish consumption advisories for the Detroit River. Researchers conducted interviews and organized workshops with more than 60 stakeholder

groups to help focus project research questions. They then gathered, reviewed, and analyzed relevant data from the Detroit River, including contaminant measurements from fish, mussels, plankton, water, and sediment from both Canadian and U.S. sources.

Researchers also formed a diverse working group to improve communication about fish consumption advisories for at-risk populations fishing along the Detroit River. A graduate student team involved with the project interviewed anglers on the Detroit River to assess fishing habits, knowledge, attitudes, and beliefs about fish contamination among people of different cultural backgrounds and income levels. Michigan Sea Grant outreach specialists helped develop compelling graphics to illustrate the risk associated with different fish species and demonstrate the best way to prepare fish for consumption to reduce the risk. Use of descriptive graphics in addition to text allowed messages to reach diverse groups including people who cannot read English.

RESULTS: The research results, stakeholder workshops, and education tools are helping environmental professionals address the risks of fish contaminants. Based on project findings, the project team made recommendations for additional testing, identified high-risk fish species, developed a better understanding of contamination sources, and conducted outreach activities to engage underserved and at-risk populations. A graduate thesis written in conjunction with the project notes that people of color were more likely to eat high-risk fish species, such as catfish, from the Detroit River. The Michigan Department of Community Health and other partners worked to distribute fliers about safe fish-eating habits and alternate locations for catching catfish and other high-risk fish. Forty-four new signs were posted in 24 communities along the Detroit River, where many anglers are low income and unlikely to use web-based advisories.

LESSONS LEARNED: Researchers found novel approaches for addressing contaminant levels in the river and better communicating the risks to fish consumers of different backgrounds and income levels. The project provided a better understanding about who is eating what from the Detroit River and led to improved and consistent fish advisories for the Detroit River. The new approach showed the value of tailoring fish consumption information to specific audiences and water bodies.

University Student Connections: Expanding the Next Generation Workforce

Sea Grant seeks to contribute to a diverse marine, coastal, and Great Lakes workforce that understands technical and social challenges facing coastal communities and the environment. A lack of diversity exists in marine-related STEM fields at the college and professional levels. Sea Grant is uniquely positioned to contribute to, and benefit from, advancing diversity and inclusion efforts in fellowship and scholarship programs in STEM fields. Sea Grant leverages resources through relationships with coastal communities, local industries, policy-makers, university scientists, and management agencies to provide undergraduate and graduate students, as well as recent graduates, real-world opportunities in marine science, policy, management, and outreach.

Fellows entering the workforce can apply skills gained through these opportunities to the most pressing coastal and ocean issues facing local communities and the nation.

Enhancing diversity in Sea Grant fellowship and scholarship programs has the potential to inspire innovation and problem-solving across a broader range of thinkers. It will allow the Sea Grant Network to better tailor communications programs and messaging to the multitude of communities that Sea Grant serves and will increase capacity for understanding marine and coastal issues from a variety of perspectives.

Sea Grant fellowships place students with host offices that support students in carrying out their own projects. Sea Grant programs support federal fellowships and state opportunities. In addition, programs often hire undergraduate and graduate students for short-term research and environmental education opportunities. Challenges and best practices to increase diversity and be more inclusive vary across programs and exist throughout the fellowship and scholarship program cycle.

State populations with limited demographic diversity or opportunities deemed unattractive to underrepresented students can limit the recruitment of a diverse applicant pool. Expanding networks by building relationships and using a variety of communication and outreach platforms would lead to a more diverse pool of applicants. A pipeline approach should be considered; talented individuals from underrepresented groups are more likely to apply to Sea Grant fellowships if they are connected to the program or related entities in Pre-K-12 or college.

Review criteria and panels play an important role in achieving diverse classes of awardees. Sea Grant programs that sponsor state competitions for graduate and undergraduate students can modify procedures in the application process (i.e., request for applications, interview questions, and review criteria) to address issues of diversity. Diverse review panels may also bring fresh perspectives to application assessment.

Fellows and interns placed in non-academic environments may face cultural challenges. Providing support to awarded fellows is necessary to cultivate an inclusive environment, and ensures their success during and after the program. This is especially true for host offices with homogenous populations or institutions that lack resources to support cultural needs (e.g., translation services, cultural-based community groups, recreational activities, formal and informal workplace mentors). Working with host offices to provide cultural resources to meet those needs may foster a greater sense of belonging among fellows from diverse backgrounds.

Evaluating success in achieving diverse fellowship awardee classes is difficult to assess. There are many dimensions of diversity. Some elements are considered private or sensitive information and prohibited from data collection. Assistance from university diversity offices can help to develop voluntary and confidential survey tools to collect useful and appropriate data.

Strategic and explicit action needs to be taken at each stage of the fellowship cycle to increase applicant diversity and foster inclusivity once fellows are established. Inherent challenges exist

in establishing diversity goals for fellowship programs, including setting diversity targets and evaluating them. A unified vision and resource sharing across and within Sea Grant education, research and fellowship programs will increase the likelihood of success.

Case Study 9: Puerto Rico Undergraduate Education Initiative Maryland Sea Grant

RELEVANCE: Opportunities for racial and ethnic minorities to receive training and education in STEM disciplines are often lacking, lowering workforce diversity in these fields. Offering undergraduate students guidance, mentorship, and hands-on STEM experience can make a positive difference for their future career paths and make them stronger candidates for employment and graduate school.

RESPONSE: To create a more competitive and creative pool of experienced STEM participants, Maryland Sea Grant (MDSG) built on their successful Research Experience for Undergraduates (REU) model to develop a program specifically for underrepresented and underserved, early-stage undergraduate students in Puerto Rico. This NSF-funded program partnered researchers from the University of Maryland Center for Environmental Science with the students to conduct marine research in Puerto Rico's coastal lagoons. Students hailed from a variety of fields, including computer science, biomathematics, environmental science, chemistry, general biology, and molecular biology. Their research projects focused on understanding the natural, economic, social, and cultural values of bioluminescent coastal lagoons in Puerto Rico. They also received training on applying to internships and graduate schools.

RESULTS: Since 2012, the MDSG program has trained 40 undergraduates from Universidad Metropolitana (UMET), Universidad del Turabo (UT) and Universidad de Puerto Rico en Bayamón (UPRB). Students receive professional development focused on marine science and parlay their experiences into conference presentations and longer-term, U.S.-based internships. A total of 22 research posters were presented by participants at various professional conferences, including the Joint Aquatic Sciences Meeting and the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS). Former participants received internships in locations including Vermont, Texas, California, Maryland, and Puerto Rico.

In 2016, MDSG received NSF funding to create a collaborative research and education center in Puerto Rico – Centro TORTUGA (Tropical Oceanography Research Training for Undergraduate Academics) – designed to provide new opportunities for Hispanic undergraduate students in coastal science. A primary goal of the new center is to increase the number of Hispanic students studying marine and coastal science at the undergraduate and graduate levels in Puerto Rico and U.S. academic institutions. Improved science education opportunities for Hispanic students addresses a wider national problem: the relatively low retention and graduation rates for students underrepresented in STEM fields. Building capacity for students to participate in education and research activities across multiple institutions and STEM disciplines aims to overcome shortcomings in funding and infrastructure that are prevalent at non-research universities.

LESSONS LEARNED: Better informed and more diverse undergraduates can strengthen the future STEM workforce. Direct efforts by Maryland Sea Grant and their partners to provide education and research opportunities to underrepresented and underserved university students in Puerto Rico are excellent examples of incorporating diversity and inclusion into college level STEM education.

Case Study 10: Growing the Summer Scholars Program Oregon Sea Grant

RELEVANCE: To be competitive when applying for jobs in the marine field, applicants are typically asked to provide multiple past research experiences with accredited organizations. Students from diverse backgrounds who lack those experiences are less likely to apply for and be awarded those opportunities, thus contributing to the current lack of diversity¹ in the marine workforce. Diversity in the marine field is beneficial because more diverse groups bring in unique knowledge and experiences that result in improved problem solving and more effective communication strategies.

RESPONSE: The Oregon Sea Grant (ORSG) Summer Scholars Program (SSP) places undergraduates from around the country with national, state, and local organizations in Oregon to gain practical experience under the mentorship of a career professional. Selection as a Summer Scholar and receiving hands-on experience with a respected organization gives undergraduates an advantage when applying for graduate school or jobs in the marine field. In 2016, the ORSG Research and Scholars Team developed a vision and mission with an emphasis on diversity for the scholars program and a specific set of goals for the SSP. Applicants and SSP hosts alike were directed to the new vision, mission, and goals, and informed during the application process that the 2017 SSP encouraged applicant diversity. Also, to increase the diversity of applicants, ORSG altered the 2017 cohort's application to attract students from academic departments not typically targeted in prior years, such as conservation psychology, and focused recruitment efforts on national diversity-focused clubs such as MANRRS (Minorities in Agriculture, Natural Resources, and Related Sciences) and SACNAS (Society for Advancement of Chicanos and Native Americans in Science). The personal statement and interview questions were updated to include questions on experience with diverse groups and anticipated benefits that the SSP could provide that past internships had not.

RESULTS: Among the 10 selected 2017 Summer Scholars there was a wider variety of academic backgrounds than in the past, including students studying agricultural policy, photography, creative writing, marine social sciences, social psychology, and sociology. The 2017 SSP included a professional development opportunity focused on diversity in fisheries science to increase awareness of this issue. Additionally, a survey measuring demographic metrics was distributed to all applicants with assistance from Oregon State University's Office of

¹ The Oregon Sea Grant Scholars Program defines diversity as persons from various cultural, ethnic, and socioeconomic backgrounds who contribute a diverse perspective stemming from their lived experiences, skills, and interests.

Equal Opportunity and Access. This survey will be administered each year to Summer Scholar applicants to evaluate ORSG's diversity and inclusion efforts in the SSP. These strategies have been expanded and used in recruiting and selecting applicants for ORSG graduate fellowship opportunities.

LESSONS LEARNED: To increase diversity in coastal and marine professions, applicants from underrepresented populations must have research experiences that make them competitive in the job search. To effectively recruit and retain students from underrepresented populations, Sea Grant programs should consider the following efforts: advertising on various platforms to a broad range of disciplines, partnering with organizations serving underrepresented populations, incorporating DEI into the request for applications and selection criteria, and integrating DEI into the program vision, mission, and objectives. Further, disseminating a demographic survey to applicants could help to measure the efficacy of DEI efforts over time.

Case Study 11: Employing New Strategies for Knauss Fellowships Sea Grant Program Mission Committee

RELEVANCE: Students applying for fellowship, internship, funding, and employment opportunities have varying levels of experience with the application process and access to resources for improving application materials. For example, some academic institutions lack the capacity, networks, and knowledge to assist student applicants. In contrast, other applicants benefit from services including prior review and proofreading of application materials, and participation in mock interviews. The Sea Grant network recognized this disparity in available support for applicants to the John D. Knauss Marine Policy Fellowship, which may introduce inequities and/or biases.

RESPONSE: In May 2017, the Sea Grant Program Mission Committee (PMC) surveyed Sea Grant programs to gather preliminary information on current practices with respect to the Knauss Fellowship application process. The survey addressed concerns that the current Federal Funding Opportunity (FFO) limited feedback to applicants regarding their application materials.

RESULTS: Twenty out of 33 Sea Grant programs responded. Results revealed that in the absence of restrictive guidelines, most programs provided applicants with guidance, advice, and feedback on application materials. Feedback ranged from recommendations to improve personal statements and resumes to minor proofreading. The survey sparked discussions within the Sea Grant network regarding issues of promoting diversity and inclusion in the Knauss Fellowship application process. Specifically, discussions highlighted that applicants with less experience applying to fellowships and those who come from academic institutions that do not offer resources to improve applications may benefit from additional guidance and feedback from the Sea Grant program through which they apply. It was also noted that the Knauss Fellowship provides a unique professional development opportunity to non-U.S. students, who are ineligible to apply for Congressional Fellowship programs. Further, many in the Sea Grant program regard application feedback as an educational and professional development training opportunity for the students they serve. This information was detailed in a brief feedback document to the National

Sea Grant Office. Additional suggestions included development of guidance outlining acceptable types of assistance for applicants prior to the issuance of the next Knauss FFO to ensure consistency across Sea Grant programs and fair and equitable access to resources for applicants.

LESSONS LEARNED: Student applicants for Sea Grant funding opportunities vary with respect to their application experience and available resources for improving application materials, which can create inequities in recruitment and selection processes. Sea Grant, at both the national and state level, should consider these potential biases when developing application announcements (i.e., Federal Funding Opportunities or Request for Applications) and when defining consensus guidance outlining acceptable types of applicant assistance. Soliciting and implementing feedback on the application guidelines from partners serving the target population(s) could improve student access to Sea Grant funding opportunities.

Environmental Justice

Environmental justice is the concept that all people have a right to access clean water, lands, and air, as they are integral to human life. Ensuring access means that all people can exercise meaningful participation in decision-making processes about how natural resources are utilized. In addition to access, environmental justice refers to equity, meaning all people should have equitable protection from harms associated with polluted water, lands, and air. Concern about safe and healthy living and work spaces is central to environmental justice issues. Environmental justice activities in the U.S. have led to environmental and socioeconomic improvements for resource-dependent, disenfranchised communities as well as natural resource and economic redress.

There are a number of challenges for Sea Grant programs wishing to address environmental justice issues. These include lack of knowledgeable staff or partners with experience in these issues, limited funding for environmental justice-associated research, and the potential for becoming an "advocate" or "activist," in violation of Sea Grant's honest broker intent. In addition, approaching historically disenfranchised or underprivileged populations with traditional conservation initiatives is unlikely to be successful. The priorities of these populations may be more focused on material needs and have a different perspective on topics like land preservation.² Because conservation efforts have often been promoted by those of Western European ancestry and colonial powers, careful consideration must be given for how to partner with marginalized groups that may view issues from a distinct lens.

Sea Grant programs have the assets to address environmental justice, either explicitly as a topic or as an underlying principle of research, extension, and outreach. Sea Grant's science-based, multi-stakeholder approach is appropriate to help resolve complex resource use conflicts. Sea Grant's access to university expertise and resources enable the cross-disciplinary collaboration

² For example, establishment of the U.S. Glacier, Yellowstone, and Yosemite National Parks required dislocation and erasure of Native American tribes. Inequities in international resource use, specifically tiger and big game reserves in India and Africa, led to the removal of peasants and discontinued access to farms and pasture lands.

required for environmental justice work, specifically between scientists and departments of public health, law, nursing, social work, education, and public administration.

To incorporate environmental justice in Sea Grant efforts, staff and researchers must shift from an interest in inclusiveness to a commitment to build the relationships and trust to ensure all stakeholders have a voice. Developing relationships with change agents, or local leaders in disenfranchised communities, as well as staying up-to-date on locally relevant current events will help Sea Grant fulfill this commitment.

Disenfranchised populations should not be the object of research but considered as partners that contribute to the process. Sea Grant staff should be aware of the local history of natural resource use if they are to appropriately address emerging conflicts regarding resource use and community needs. Understanding who has had access to them, who uses them and who determines how their used is important, as is knowing the impact of resource use on public health and the specific populations it has historically affected and could potentially affect the most.

Strategies employed to address environmental justice issues require dedicated time and resources. Communication strategies may be time intensive to reach specific audiences, including phone calls, texts, and attending community meetings organized by the community. To encourage stakeholder participation in programming, Sea Grant staff should consider peoples' access to transportation, time, and funds. Some communities may require that a meeting be held at a central location to decrease transport costs, others may require a weekend or weeknight meeting time to accommodate work schedules. Some communities may benefit from having child care, interpreters, vouchers, or reimbursements to cover meeting costs.

Case Study 12: Working to Sustain Culture and Environment Guam Sea Grant

RELEVANCE: Spanish, Japanese, and American colonial powers in Guam attempted to transform the Chamorro, or indigenous people, via physical relocation. This limited access to natural resources (e.g., land and water). They also introduced policies suppressing native language use over a several hundred-year period. Cultural revitalization efforts that began in the 1970s have since tried to address the numerous social problems linked to historical disenfranchisement.

RESPONSE: Guam Sea Grant (GSG) staff use identity-affirming education to improve social, health, economic, and environmental outcomes among the Chamorro people. They piloted a workshop on Chamorro fish names that included a brief lecture about scientific taxonomy. The workshop flyer was developed in Chamorro and English. It took place at a centrally located site where various cultural practitioners gather (carving, canoe building, dance), and incorporated activities where participants could comfortably practice hearing and using the language.

Indigenous workshop leaders and hosts were given honoraria for their time. The event was family-friendly. Activities for children and adult supervision was provided. The location easily accommodated parents who needed to step away with fussy children.

RESULTS: The use of native knowledge in the fish identification workshop combined Chamorro understanding and Western science, resulting in a culturally-relevant, informal education experience. The pilot workshop generated a waiting list, and several people asked for a repeat at a different time. As requested by stakeholders, GSG continues to offer activities that affirm Chamorro identity and cultural practices, including fishing derbies and outdoor education where organizers consistently use Chamorro language and references.

LESSONS LEARNED: As with other indigenous peoples, colonization on Guam has attempted to erode Chamorro cultural tradition by controlling access to natural resources and suppressing cultural practice. GSG offers interdisciplinary workshops that, while science-based, emphasize cultural practice for the benefit of a historically disenfranchised population. Recruiting indigenous workshop leaders, who are not necessarily academic experts, helped to ensure authentic application of indigenous cultural knowledge.

Case Study 13: Relying on Local Values to Drive Indigenous Resilience Washington Sea Grant

RELEVANCE: Native American communities in the Pacific Northwest depend on ocean resources for their livelihoods, food, identity, and well-being. As tribal and coastal communities plan for the future, they consider the interconnected risks of ocean and coastal changes to resources and people. Yet the cumulative risks from ocean changes, including ocean acidification (OA), on well-being are largely unknown. Studies of OA risks to people tend to focus on economic aspects without considering the health and socio-cultural impacts facing communities. Moreover, OA vulnerability studies have focused on regional and national scales of risks and responses, generally overlooking the needs, perspectives, and capacities of local communities. Given their cultural connections to oceans and coasts, and history of dispossession by U.S. federal and state governments, tribal communities in the Northwest may face unique and disproportionate risks. Thus, improving knowledge about and action in response to OA impacts on tribal community well-being is an environmental justice priority. Cultivating partnerships with diverse experts to better understand and respond to these challenges so that coastal communities and marine life can thrive is a core principle of Washington Sea Grant (WASG).

RESPONSE: In partnership with the Squaxin Island Tribe, located in south Puget Sound, WASG developed the first-ever community-based participatory action research project (CBPAR) to assess the social and cultural vulnerability of OA. With the assistance of a tribal liaison from the community, WASG social scientists conducted interviews and workshops with tribal members on the topics of well-being and OA. The project defined locally-relevant indicators of indigenous well-being tied to ocean resources. These indicators were used in a risk assessment to measure OA impacts to the community, such as loss of shellfish, and access to other traditional foods and cultural activities. Facilitated discussions identified community-led adaptation strategies,

focusing on ecosystem and tribal community resilience. Funding came partly from NOAA's Integrated Ecosystem Assessment as well as flow-through support from the Swinomish Indian Tribal Community and the National Institute of Health. The OA CBPAR project evolved out of earlier collaborations initiated between the Squaxin Island Tribe and WASG in 2013 on the cultural ecosystem services of shellfish and its importance for sense of place and ecosystem restoration.

RESULTS: Seven indicators of indigenous well-being were developed by tribal members. Indicators include measures such as physical health, cultural practices, community connections, education, and self-determination. Additionally, existing programs were identified that support community health so OA and climate risk mitigation topics could become the focus of new activities. The Squaxin Island Tribe initiated resilience programs in the community: (1) training youth in climate change and restoration of impaired waters, and (2) strengthening community and food sovereignty through a community garden program. Interviews with tribal members, including elders, harvesters, and cultural experts documented traditional knowledge, community perspectives, and local histories that became part of the Squaxin Island Tribe's community archive. The success of the collaborative project between the Squaxin Island Tribe and WASG has inspired other partnerships to undertake CBPAR on risks and resilience to OA. On the Olympic Coast, the Quinault Indian Nation, and the Hoh, Quileute and Makah Tribes are teaming up with WASG and other agency collaborators to identify their vulnerability and adaptation actions to OA.

LESSONS LEARNED: CPBAR is effective for developing knowledge, measures, and outcomes based on local values and priorities. CBPAR supports communities in preparing for the impacts of ocean changes, such as OA, by focusing attention on those aspects of well-being most sensitive to changes. Building on the strengths of existing programs and developing new adaptation actions can strengthen resilience strategies that are based on community ethics and priorities. In the Pacific Northwest, incorporating indigenous values and perspectives is integral to understanding how OA can impact entire indigenous communities, such as through traditional marine food systems that are central to relationships among people and between people and the land and ocean. WASG followed several best practices for CBPAR in indigenous communities: (1) recognize the existing strengths, wellness, and values within tribal communities, which have long endured and responded to cumulative social-ecological changes and impacts; (2) respect tribal government protocols for transparent and informed collaborative work in the community; (3) establish agreements at the outset of a project about activities and outcomes, including the use and ownership of indigenous and community knowledge; (4) dedicate fiscal resources and employ tribal/community liaisons for deeper community-engaged, applied projects that are sensitive to community needs, priorities, and values; (5) allow adequate time and flexibility for participation in all phases of the project (i.e., development, implementation, and producing outputs) and recognize that meaningful collaboration takes time, capacity, and coordination; and (6) form long-term commitments by Sea Grant staff to build trusted relationships and mutual understandings that yield results in the interest of participating communities and researchers involved.

Professional Development

Sea Grant personnel need professional development on DEI topics so they have the knowledge and tools to broaden participation in their programming. Basic understanding of these topics is required to increase staff diversity and ensure equitable access to research, extension and education activities.

Implicit bias training is useful in considering the challenges and strategies to applying DEI principles in Sea Grant programs as well as establishing a commitment to them. Implicit bias refers to the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner. It is pervasive; all humans are biased. We all use heuristics, or mental shortcuts that ease the cognitive load of making a decision. They are incredibly useful in accomplishing everyday tasks. For example, it would be an especially arduous process to clean the dishes if after washing each plate or utensil you had to re-learn that you needed hot water, soap, and a rag to complete the task. Because heuristics rely on a set of assumptions learned over time, they are sometimes employed at the expense of deliberate thought.

There are currently no consistent training opportunities for Sea Grant personnel on DEI topics, so awareness and capacity on these topics vary greatly. The lack of in-house professional development opportunities requires personnel to seek training elsewhere. Work plans that do not incorporate DEI professional development may limit personnel from spending time on these issues. If individual staff members and leadership do not recognize and promote the need for professional development, it will not take place. Staff members in remote locations need encouragement and access to resources to attend distant trainings.

Relationships with parent institutions, like universities and NOAA, present the most obvious resources for professional development training. University resources are typically free or low cost, whereas NOAA resources may be inaccessible since Sea Grant personnel are not federal employees. Both parent entities have equal opportunity offices with trained staff that offer education and customized training. Universities offer a wide variety of trainings, from how to be inclusive in search and hiring decisions to communication strategies for diverse groups. External consultants offer a greater array of professional development opportunities, but there is a financial cost, as well as time required to find an appropriate facilitator for the topic at hand. Staff-wide training activities should be tailored to specific Sea Grant program needs to ensure buy-in and mitigate backlash.

Sea Grant-specific professional development opportunities should be developed to ensure a consistent framework of understanding across programs. These efforts are underway and should continue at regional and national meetings. Training modules should be developed so that state programs (i.e., leadership and personnel) can reflect annually on whether coastal populations currently served correspond with state demographic trends. The culture of each state program must allow for a work environment in which personnel and populations served can be proud of their unique perspectives and willing and eager to share them. Simply attending diversity trainings is not sufficient to create an inclusive atmosphere.

A list of training resources and facilitators was developed based on personal recommendations from members of the Environmental Leadership Program Network & Sea Grant personnel. The training resources and facilitators list can be found in Appendix A.

Case Study 14: Professional Development for Free North Carolina Sea Grant

RELEVANCE: Sea Grant programs generally do not have the resources, time, or expertise to provide in-house professional development on the topics of diversity, inclusion, and equity. Because of this, Sea Grant staff must seek out external training opportunities, which can be costly and may not be available across the entire program.

RESPONSE: North Carolina Sea Grant (NCSG) staff have access to free professional development DEI trainings at their parent institution, North Carolina State University (NCSU). The Equal Opportunity Institute (EOI) at NCSU is a program designed to increase individual knowledge of equal opportunity issues in the workplace and help participants develop skills necessary to thrive in diverse working and learning environments. North Carolina Sea Grant (NCSG) personnel participated in this free program to proactively learn about areas of equal opportunity and diversity, and how it relates to their work.

RESULTS: NCSG personnel who completed the EOI designed an individual education plan and set personal goals to reach within the academic year. They attended a minimum of 10 workshops (most are two-hours in length) in addition to an orientation. Workshops focused on cross cultural communication, unconscious bias, and federal laws and regulations related to affirmative action and the American Disabilities Act, among other topics. NCSG personnel who graduated from the EOI have a new depth of understanding about DEI topics and a network of individuals they can learn from, and collaborate with, across NCSU. An unintended consequence of EOI participation was greater awareness throughout the NCSG program of DEI topics, resulting in synergy among staff members. For example, an additional initiative was undertaken to participate in an internship program that encourages young people of color to work in conservation fields.

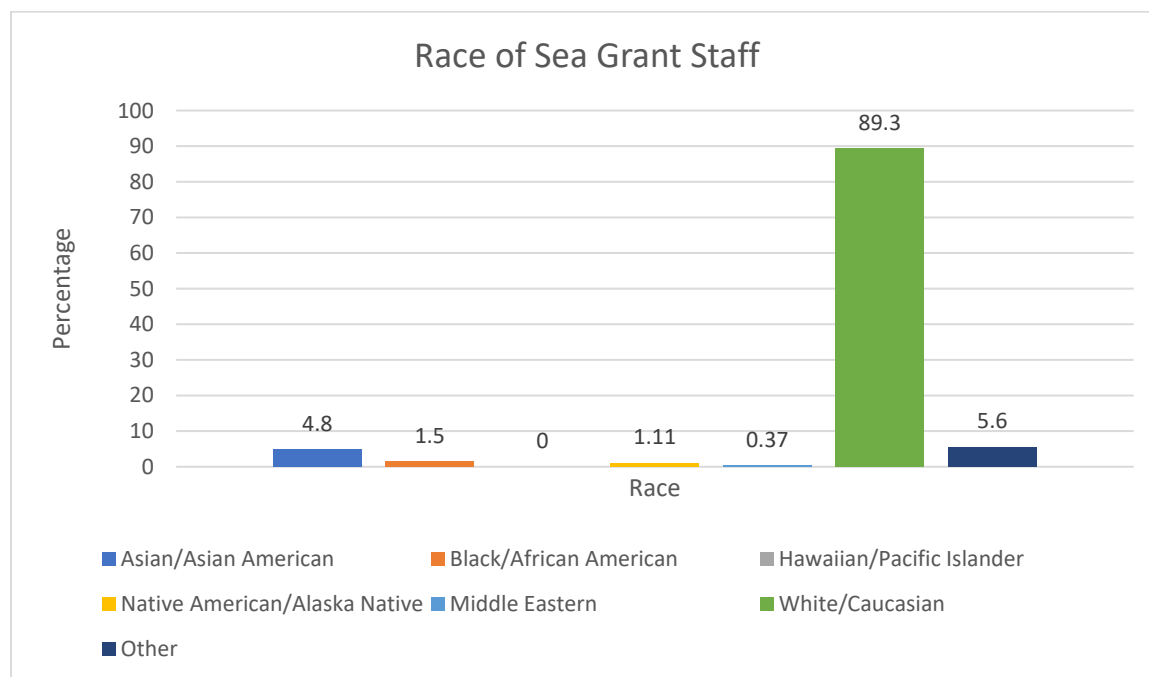
LESSONS LEARNED: Universities often provide free professional development opportunities on DEI topics and are an excellent resource for Sea Grant personnel interested in furthering their own knowledge and understanding of these issues. These university programs have the added benefit of connecting Sea Grant personnel with others interested in these topics, potentially serving as a catalyst for collaboration. Sea Grant program leadership should become aware of these opportunities and alert their staff when available. Leadership staff should search out opportunities for each office location because it may not be feasible for staff in remote locations to travel for training.

Recruiting and Retaining a Diverse Workforce

Sea Grant's workforce severely underrepresents certain demographic groups, replicating trends in the fields of science, technology, engineering, and mathematics (STEM). A 2017 survey of

Sea Grant staff revealed that almost 90 percent identify as white (See Figure 2). About six percent identify as Hispanic or Latino, which was asked as a separate question from race. Nationally in the U.S., African-American, Hispanic/Latino, American Indian, Alaska Native, Native Hawaiian, and those of two or more races make up 31% of the adult population ages 25-64. Yet they represent 12.3% of those employed in science and engineering occupations, and 6% of those employed as earth scientists, geologists, or oceanographers (NSF 2017). The coastal and marine STEM workforce is even less diverse than that of other STEM careers, prompting the need for added intervention. Conservation organizations similarly struggle to recruit and represent people of color (Taylor 2014).

Figure 2. Race of Sea Grant Staff



Recruiting and retaining a diverse Sea Grant workforce fulfills three primary objectives. First, a diverse workforce contributes to a broadening of perspectives for Sea Grant programs, improving the ability to problem solve and be effective. Second, a diverse workforce helps to ensure that staff reflect the demographics and environments of the coastal communities Sea Grant programs serve. Finally, some populations have been historically underrepresented in marine and coastal STEM fields. Equity in job opportunities is improved by reducing bias and barriers to employ a diverse workforce.

One obstacle to recruiting individuals from underrepresented groups is the low proportion of these populations in the application pipeline. Many jobs are filled by known candidates and trusted referrals. For example, hiring experienced interns who have learned and benefited from the on-the-job-training opportunity is a common practice in state Sea Grant programs. How can we change our strategies to increase the diversity in that applicant pool?

Searches to fill job vacancies provide an opportunity for programs to recruit candidates and individuals from underrepresented populations. The 2017-19 NOAA Diversity and Inclusion Plan provides ideas for building a diverse workforce. The plan outlines a timeline for accomplishing tasks and outcomes to measure progress. The three main goals of the plan also capture what Sea Grant seeks to accomplish:

1. Workforce Diversity — Recruit from a diverse, qualified group of potential applicants to secure a high-performing workforce drawn from all segments of American society.
2. Workplace Inclusion — Cultivate a culture that encourages collaboration, flexibility, and fairness to enable individuals to contribute their full potential and further retention.
3. Sustainability — Develop structures and strategies to equip leaders with the ability to manage diversity, be accountable, measure results, refine approaches based on such data, and institutionalize a culture of inclusion.

There are several strategies that Sea Grant programs can use to diversify the Sea Grant workforce and establish a culture of inclusion that enables employees to see themselves as future leaders. Sea Grant programs can participate in professional development opportunities that focus on hiring best practices at university campuses, Sea Grant meetings, or through NOAA. Other strategies include tracking the national demographics of Sea Grant staff and new hires, imitating successful leadership training models from organizations that offer a substantial number of needs-based scholarships, and communicating the organizational benefits of diverse hires to staff and administrators. Finally, programs should consider “cluster hires,” a recent practice by universities to increase diversity and interdisciplinary research. A group of individuals is hired, rather than a single person, with the intent to stimulate collaboration. Cluster hires allow the new personnel, of any background, to support one other and develop a sense of camaraderie in an unfamiliar institution.

Case Study 15: Expanding the Applicant Pool North Carolina Sea Grant

RELEVANCE: Searches for qualified applicants for an open hire generally rely on the professional networks of the search committee and organization staff. Oftentimes those networks exclude potential minority or diverse candidates, not because they are not qualified, but because they are not aware of those networks. Applicants of color and other minority groups often have their own distinct professional networks, which may not coincide with Sea Grant networks.

RESPONSE: North Carolina Sea Grant (NCSG) partnered with an internship program called Diversity in Conservation, managed by a regional land trust and sponsored by the U.S. Forest Service and Americorps, to bring more students of color into the marine and coastal science career pipeline. The internship program connects talented undergraduate and graduate students of color with conservation organizations in North Carolina for summer employment. About two-thirds of the intern’s salary is paid by the sponsors, while one-third is paid by the host organization, in this case, NCSG.

RESULTS: NCSG staff created a position description to advertise through the Diversity in Conservation internship program. Because any student could apply, many initial applicants were not students of color. Students of color only applied at the very end of the application window, and those that applied did not have some of the job or educational experiences that some of the other applicants had. NCSG staff ultimately decided to hire a student of color who showed great potential in her interview. Although she did not have the same types of career or educational experiences as other applicants, her communication skills and drive were apparent, both from her interview and recommendation letter. Without the internship goals set ahead of time though, NCSG staff would have likely hired someone with connections to their existing network.

In the beginning, hosting the intern was challenging for the NCSG internship supervisors. The undergraduate student did not have much knowledge about sustainable coastal landscaping, but she was expected to help form an extension program on the topic. NCSG staff employed several strategies to improve the internship experience for both parties.

- NCSG staff assigned the intern a weekly task to write down five questions. They could be about her job activities, professional careers, or of a more personal nature. Oftentimes both the intern and NCSG staff would answer the questions, learning about one another through the process and becoming more comfortable with one another.
- NCSG staff traveled offsite with the intern to conduct field work for a sustainable coastal landscape project. This hands-on approach helped her understand the extension program's intentions more comprehensively by interviewing landscaping experts and visiting garden and plant nurseries.
- NCSG staff and the internship program coordinator conducted an evaluation about a month after the internship began. The intern sat through the evaluation, which allowed all parties to hear each other's perspectives and consider improvements that could be made to the internship experience.

LESSONS LEARNED: Many Sea Grant programs do not have the appropriate networks or time available to attract qualified applicants of color to their workforce. Partnering with another organization focused on this effort can save time and extend knowledge of Sea Grant's work to potential hires that otherwise would not be aware of the organization. Sea Grant staff must be willing to look beyond the applicants that "check" all the right boxes. There may be an equally qualified candidate who simply has not had the same life experiences as what is assumed to be required. Sea Grant staff must be willing to reflect on their ability to mentor and work with people from different backgrounds. This will likely take additional staff time. They may need to find their own mentors to solicit feedback on improvements they can make as a supervisor and team member.

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Appendix A. Professional Development Training Resources and Facilitators

Programs seeking to identify external training resources and facilitators should consider the following list. Many of the organizations listed and their facilitators are willing to travel to conduct trainings. They often have wide networks of facilitators that are based nationwide. The list is based on personal recommendations from members of the Environmental Leadership Program Network & Sea Grant personnel and includes anonymous quotes from the individual that recommended each organization.

The Peoples Institute for Survival and Beyond | New Orleans, LA

<http://www.pisab.org/>

“I attended the...undoing institutional racism [workshop] and it absolutely changed my life. Highly HIGHLY recommend them. They do trainings and workshops all over the country. They've been doing this work for quite some time now and their trainings are very effective, especially at building a common language around equity.”

The Center for the Study of White American Culture | Roselle, NJ

<http://euroamerican.org>

“One thing that sets them apart is the inclusion of white culture as one of the cultures discussed. In my experience ‘diversity trainings’ often leave this part out, even though it’s the unspoken dominant narrative.”

Kirwan Institute, The Ohio State University | Columbus, OH

<https://kirwaninstitute.osu.edu>

“Similar to Sea Grant, they conduct research, outreach, and extension, but on issues of race and ethnicity. They provide a variety of trainings and are willing to travel. Scientists would likely find their approach accessible given the research that informs their outreach.”

Anti-oppression resource & training alliance | Mid-Atlantic and other regions

<http://aorta.coop>

“I have not been to an AORTA training either but have heard them speak. Their cooperative model is unique and an interesting way of putting principles into action.”

Race Forward | NY and CA

<https://www.raceforward.org/about>

“I am at a racial justice training right now in Chicago by a group called Race Forward and it is awesome.”

Training for Change | Philadelphia, PA

<https://www.trainingforchange.org/>

“I also highly recommend Training for Change (trainingforchange.org). They have a set schedule for trainings in and around Philly, but will also arrange something for a predetermined group of participants.”

Allison Chin | Green Leadership Trust | Nationwide

<http://www.greenleadershiptrust.org/>

“I recommend that you touch base with Allison Chin. She is a Chair of the Green Leadership Trust which has recently released an industry best practices library on Diversity, Equity and Inclusion. She is also a Director of the Sierra Club among other wonderful things and an integral part of the DEI training efforts there. She is highly sought after but can likely put you in touch with someone else if she is unavailable.”

Brendon Barclay | Clarkston, NC

<https://www.linkedin.com/in/blabarclay>

<https://www.youtube.com/watch?v=Nt8PmG8KaDM>

“Fast forward to the following segment to 16:05 time marker and watch at least ‘til about 33:00. If you like it and would like to discuss more about what I may offer your group, let’s talk. I am an education director of a small non-profit in Clarkston, the city Time Magazine dubbed “The Most Diverse Square Mile in America.” As home of World Relief and refugee services, Clarkston has people from all over the globe, and they have been living right in my back yard for the past 20 years...Divine providence had a plan which has landed me doing diversity training as a lifestyle among grassroots constituents and for non-profits. I live it, am passionate about it, and would love to share it with your team, staff and board.

Visions Inc. | Nationwide

<http://visions-inc.org>

<http://interactioninstitute.org/trainings>

“Earlier this year I participated in a training with Visions and Interaction Institute, which I thought was stellar.”

Interaction Institute for Social Change | Boston, MA

<http://interactioninstitute.org>

“Earlier this year I participated in a training with Visions and Interaction Institute, which I thought was stellar.”

Fatimah Gilliam | The Azarah Group | Nationwide

<http://www.theazaragroup.com/>

“Her [Fatimah Gilliam] company does training for Fortune 500 companies like Aetna, Pfizer, and Goldman Sachs.”

Sherry Snipes | Washington, D.C.

<https://www.linkedin.com/in/sherrysnipes>

“I highly recommend Sherry Snipes.”

Lisa Santer and Shakira Abdul-Ali | National Coalition Building Institute | Philadelphia, PA

<http://ncbiphilly.webs.com/>

“Sensational Philadelphia-based trainers from the National Coalition Building Institute”

Angela Park | Mission Critical | Boston, MA

<http://www.sustainabilityleadersnetwork.org/fellows/angela-park>

“Only bring her in if there is significant buy-in from the top of your organization for change. She offers pro-bono or reduced rates for nonprofits.”

Ariela Rosenstein | MindFit Solutions | Washington, D.C.

<https://mindfitsolutions.com>

“I highly recommend my dear friend and former colleague Ariela Rosenstein. She is a very gifted trainer, facilitator and learning strategist with whom I worked for many years at Rare. She has recently founded MindFit Solutions to focus on a particular mindfulness training with organizations and teams, but she contracts independently with organizations to deliver many different types of workshops and trainings.”

Queta Gonzalez | Center for Diversity & the Environment | Portland, OR/West coast

<http://cdeinspires.org>

She [Queta Gonzalez] is stellar.”

Desiree Adaway | Asheville, NC

www.desireeadaway.com

“My friend Desiree Adaway would be an excellent resource for this. She does trainings herself and works with organizations on their diversity strategies. She is also a coach for professional/life work. I worked with her while I was Program Director at TransAfrica Forum and as an individual (participated in her Mastermind program in 2015 and also one-on-one coaching).”

Nora Rasman | Maximize Good | Washington, D.C.

<http://www.maximizegood.org/>

“Another option is Maximize Good, an organization that does diversity and inclusion trainings, as well as anti-racism work. I know the founder very well, worked with her at TransAfrica and in Haiti.”

Michael Gagne | Environmental Leadership Program | Philadelphia, PA

www.elpnet.org

“The 2015 ELP [Environmental Leadership Program] diversity and inclusion segment conducted by Michael Gagne was amazing.”

TMI Consulting | Richmond, VA

<http://www.tmiconsultinginc.com/family/dr-deborah-egerton>

“They did some work for one of my former employers on diversity and inclusion. I think you may like them.”