

Reaching Outward and Looking Inward

Building Sea Grant Resilience from the lens of Diversity, Equity, and Inclusion

Table of Contents

<i>List of Abbreviations</i>	2
<i>Sea Grant DEI Vision</i>	2
Background	2
Development of the 10-year DEI Vision.....	4
<i>DEI 10-year Roadmap</i>	6
Administration	6
Research	8
Extension	10
Education.....	11
<i>Priorities for Investment</i>	13
Recommendation 1: Network Building.....	14
Recommendation 2: Targeted Research Calls.....	14
Recommendation 3: Undergraduate and/or Graduate Student Fellowships.....	14
<i>References</i>	15
<i>Appendix I: DEI Subcommittees</i>	17
<i>Appendix II: Survey Responses</i>	19
Survey I – Sea Grant Demographics and Workplace Climate.....	19
Survey II – DEI Efforts and Challenges for Sea Grant Programs.....	21

List of Abbreviations

DEI: Diversity, Equity, and Inclusion

SG: Sea Grant

NSGO: National Sea Grant Office

SGA: Sea Grant Association

NSGAB: National Sea Grant Advisory Board

MSI: Minority Serving Institution

HBCU: Historically Black Colleges and Universities

UU: Underrepresented/Underserved

CoP: Community of Practice

SGEN: Sea Grant Education Network

Sea Grant DEI Vision

Sea Grant champions diversity, equity, and inclusion (DEI) by proactively recruiting, retaining and preparing a diverse workforce; and engaging and serving communities that are representative of the populations where our programs operate. DEI are defined as core values 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, income, and socioeconomic status types. Sea Grant is committed to increasing diversity of the Sea Grant workforce and communities we serve.

Equity: Sea Grant provides all individuals and communities with the opportunity to be heard in decision-making processes. Sea Grant is committed to a policy of equal opportunity for all persons. 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 and learning. 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

Background

A leader in research, extension, and education for more than fifty years, Sea Grant fosters the practical use and conservation of coastal, marine and Great Lakes resources in order to create a sustainable economy and environment. Achieving this mission requires talented and committed teams working together to build innovative solutions that can be disseminated to a broad community. An essential component of these

teams is the full inclusion and participation of individuals from a broad diversity of backgrounds, who bring a range of perspectives, values, and tools to bear on major scientific problems.

A plethora of research shows the power of diverse groups in tackling complex problems¹. Groups with diverse membership find solutions that are more innovative, creative, and responsive to complex problems, promote higher-order thinking amongst the group, and have even been shown to outperform homogeneous groups comprised of the highest performing individuals (Antonio et al, 2004; Page, 2007; Sommers, 2007; Phillips, 2014). Page (2007) notes that not only does casting a wider recruitment net increase the chances of finding exceptional candidates, it also helps us leverage the enormous power brought by a diverse team: *“In choosing a team, admitting a class, or hiring employees, our concern should not be the average ability of the people hired, chosen, or admitted. Our concern should be the collective performance, which depends as much on collective diversity as it does on individual ability. The belief that the best group consists of the best individual people rests on faulty logic. Instead, the best collections contain people who are both diverse and capable.”* This measured power of diverse teams carries over into scientific publications: diverse author groups publish in higher quality journals and receive higher citation rates than scientists in homogeneous teams (Freeman & Huang, 2014). Put simply, diversity in our workforce is a scientific imperative if we are to continue to lead the world in our fields of research.

From a business perspective, Sea Grant has many reasons to embrace diversity as an institutional imperative. In studies of industry, companies with greater workforce diversity and inclusion have been found to have higher profits, and increased innovation compared to those with a homogeneous workforce (Herring, 2009; Forbes, 2011; McKinsey, 2015). More relevant to our program is the finding that employees who feel that they work in a fully inclusive and culturally competent environment, where their diverse identities and contributions are valued, are happier, more productive, and suffer fewer physical and mental health issues (Goffee & Jones, 2013; Hitlan et al. 2006; Nadal, 2011). They are also less likely to leave the organization for another job (McKay et al. 2007), which also creates financial and intellectual savings by decreasing hiring searches, reducing time spent training new employees, and increasing the retention of institutional knowledge. While recruiting diverse talent requires an up-front time and financial investment, in the long term, it pays for itself as recruitment and retention becomes easier as an institution becomes known for a welcoming and inclusive workplace environment (Dalbotten et al. 2014). In the non-profit sector, the alignment between employees’ values and organizational mission is referred to as mission valence and it has been shown to improve performance, recruitment, and satisfaction; especially, when linked to identities whether collective or individual (Wright et al., 2012). Businesses, the military, and universities are pouring huge resources into increasing diversity because they understand that it brings enormous business and educational benefits, not just because they believe it is the right thing to do.

The power of diversity is further amplified when we turn to societal impacts of our work. The communities most at risk when faced with severe weather and climate extremes for example are those who are traditionally underrepresented in the sciences – primarily people of color, and those from low socio-economic communities, with limited resources to commit to adaptation strategies (Howell et al., 2018). This is vital to understand in the context of racial disparities in public trust of science, where communities of color report lower trust of science and scientists than white communities (Sewell, 2015; NAP, 2015). We cannot develop solutions for climate change or severe weather mitigation without an understanding

¹ Research described in the Background section is adapted with permission from University Corporation for Atmospheric Research (UCAR, 2018).

of, or the trust of, the communities that we are trying to reach. In order to build trust with diverse communities, we must create teams of scientists, extension professionals, educators, communicators, and others from a broad range of backgrounds who share the cultural and social aspects of these places, thus maximizing uptake of solutions (Conner, 2016).

Sea Grant programs must engage those underserved and underrepresented (UU) by our efforts in order to sustain relevance and broaden participation. Underserved communities are those that have experienced low levels of access to our programming, while underrepresented communities refer to persons for whom representation in our programs is smaller than that of the general population. Communities may be underserved for example because staff office locations are far away, timing of meetings is not convenient, topics researched are irrelevant, or additional resources are needed to participate in programming. By more fully representing and serving our diverse coastal communities, we can begin to realize the potential of their under-tapped resources. With wide-ranging perspectives including the best minds, we will find ourselves in a position of enormous opportunity, poised to drive innovation and creativity to solve our most difficult problems. We have a responsibility and opportunity here at Sea Grant to be world leaders in creating the environment where this innovation and potential can be realized.

Development of the 10-year DEI Vision

With an initial investment from the National Sea Grant Office (NSGO), the Sea Grant network led the development of a strategic DEI 10-year vision plan, entitled “*Reaching Outward and Looking Inward: Building Resilience through the lens of DEI.*” The theme signifies the goal to extend Sea Grant's solid foundation of "science serving America's coasts;" share its 50-year success; anticipate, prepare and respond to future changes; and model the way as a visionary program that embraces and nurtures all aspects of DEI.

Over the course of a year, Sea Grant’s DEI vision team (Appendix I) led a number of initiatives to draft this vision. The vision team examined DEI from both internal and external perspectives. Internally, the team explored ways in which Sea Grant could address DEI in its administration and management. Externally, the team examined ways in which Sea Grant can incorporate DEI into its research, extension, education, and communication programming to serve diverse coastal communities.

The DEI vision team undertook the following initiatives:

1. **Collection of baseline data and information** to examine all aspects of DEI in the Sea Grant network and document ways in which different Sea Grant programs incorporate DEI into its operations (i.e., administration, research, extension, education, and communication). Case studies of DEI best practices were collected across the network, and a paper was written, which is available on the NSGO website: (<https://seagrants.noaa.gov/Portals/1/DEI%20Best%20Practices%20Paper.pdf>). The DEI survey subcommittee conducted two comprehensive surveys to collect baseline data on various aspects of DEI in the administration and programming of Sea Grant. Results from these surveys are summarized in Appendix II.
2. **Initiation of a professional development series** on DEI topics. The vision team, with key support from the professional development subcommittee, organized in-person and virtual dialogues on

topics like institutional cultural change, implicit bias, and broadening participation in research. The series relies on in-house Sea Grant expertise and leverages the expertise of DEI experts from NOAA and non-profit conservation groups, and university scientists and administrators. All virtual sessions are recorded and available on the NSGO website (<https://seagrant.noaa.gov/insideseagrant/Implementation/Network-Visioning/DiversityInclusion>).

3. ***Broadening Participation in research and education*** is critical to Sea Grant's mission. To ensure that our science is relevant and responsive, it is important to create opportunities and develop innovative strategies to broaden participation among diverse individuals, institutions, and communities. This includes engaging individuals from UU communities in solving questions in ocean, coastal, and marine science; stimulating research and scholarship on issues of underrepresentation (e.g. NSF INCLUDES program); broadening the pool of investigators who compete for Sea Grant funding; and developing reporting mechanisms that track broadening participation activities in Sea Grant. A DEI broadening participation subcommittee was recently created to integrate broadening participation into Sea Grant's research and education programs. To develop Sea Grant's broadening participation strategic plan, the subcommittee is reviewing similar frameworks developed by other funding agencies like NSF that integrate broadening participation in its merit review and award oversight process: (https://www.nsf.gov/od/broadeningparticipation/nsf_frameworkforaction_0808.pdf).
4. ***Coordination with other visioning efforts*** to facilitate incorporation of DEI concepts in other vision plans. The Sea Grant DEI vision team coordinated with other visioning efforts to identify synergies and share DEI principles for use in other vision statements. We intend to include this information in this document at a later date.
5. ***Identification of Sea Grant's DEI goals, strategies, outputs, and outcomes*** for the next 10 years. A DEI vision meeting took place in February 2018 in Charleston, South Carolina. Representatives from various Sea Grant programs participated in this day-long meeting to engage with external DEI experts and draft Sea Grant's desired DEI goals and associated strategies, outputs, and outcomes over the next 10 years. Thereafter, a subcommittee refined the draft, and finalized logic models to distill all information. Four logic models were created that pertain to (1) Administration, (2) Research, (3) Extension, and (4) Education. Communications is considered cross-cutting. Where appropriate, goals in each realm were cross-referenced with case studies from the DEI best practices paper. What follows are the summary results from the logic model effort, i.e. Sea Grant's 10-year DEI roadmap.

DEI 10-year Roadmap

10-year DEI Goals At-A-Glance			
Administration			
Recruit and retain a diverse workforce.	Maintain a sustained focus on DEI with broad SG Network involvement.	Collect, analyze, and utilize data related to DEI climate.	Provide regular training and professional development on various aspects of DEI.
Research			
Address issues of diversity and underrepresentation of research reviewers, panelists and awardees.		Stimulate research and scholarship to address topics of value to diverse communities.	
Extension			
Possess capacity and skills, including knowledge of best practices and demographic data to effectively serve diverse communities.		Communities have equal access to relevant scientific information via extension programming that facilitates sound, science-based decision-making.	
Education			
Train a coastal and marine workforce that is representative of the demographics of SG locations.	Educators and fellowship administrators have the capacity, skills, and knowledge of best practices and demographic data to effectively serve diverse communities.		Prepare an environmentally literate and informed citizenry that is reflective of diverse populations.

Administration

Goal 1: Sea Grant recruits and retains a diverse workforce.²

Strategies

1. NSGO and state SG programs develop strategies to recruit and retain a diverse staff. Emphasis is given to develop specific strategies to recruit employees from UU communities including minority serving institutions (MSIs).
2. NSGO and SG programs develop and build on relationships with national networks and state organizations, respectively, that represent UU communities.
3. NSGO and SG programs recruit advisory committees and boards from UU communities.

Outputs

1. Summary of job announcements reflecting DEI emphasis.
2. Summary of SG program recruitment strategies for UU communities including communication products that raise awareness of SG employment opportunities to UU communities.
3. Summary of UU community networks reached through job announcements by SG programs and NSGO.
4. Summary of number and percent of UU applicants and placements for SG jobs.

Outcomes

² Refer to case study 15 in DEI best practices paper.

1. NSGO and SG program hiring managers are aware of how to reach UU networks, including MSIs, in job searches. (short-term)
2. Increase in number of applicants from UU groups for SG employment opportunities. (mid-term)
3. Increase in number of individuals from UU groups working for SG. (long-term)

Goal 2: Sea Grant maintains a sustained focus on DEI with broad involvement across the Network.

Strategies

1. SG programs and NSGO dedicate staffing and funding to support and sustain SG capacity to do DEI related-work.
2. SG programs identify at least one “DEI champion or advocate” who will coordinate with the community of practice (CoP) and provide DEI leadership to their respective state SG program.
3. In coordination with SG programs, NSGO identifies performance metrics and other evaluation criteria to incentivize DEI activities.

Outputs

1. Listserv of SG DEI CoP members, which includes a “DEI champion” for each SG program.
2. Best practices paper that documents DEI-related best practice case studies throughout the SG network.
3. A ten-year DEI vision document that examines SG’s current DEI climate and outlines goals and strategies to advance SG’s DEI commitment.
4. Agendas and minutes from regular network-wide DEI meetings; webinar recordings of professional development sessions.
5. Summary of performance metrics and evaluation criteria the NSGO uses to evaluate programs’ implementation of DEI initiatives.

Outcomes

1. NSGO makes financial investments to implement DEI priorities identified in various network-wide vision plans. (short-term)
2. SG programs are aware of the importance of having targeted focus on DEI initiatives. (short-term)
3. SG programs demonstrate the importance of incorporating DEI principles into all aspects of programming and operations by designating DEI champion(s) for each program. (short-term)
4. SG programs sustain existing best practices and develop strategies that advance DEI within their programs and the national network. (mid-term)
5. SG mission and strategic plans reflect DEI as a core value and philosophy. (mid-term)
6. SG personnel who are involved in DEI initiatives receive recognition for their commitment to DEI during their performance review and promotion processes; supervisors encourage personnel to pursue DEI activities and include it in their work plans. (mid-term)
7. SG programs that implement sustained DEI initiatives are recognized by the NSGO through development of new metrics that capture these contributions and/or additional resources for DEI activities. (long-term).

Goal 3: Sea Grant consistently collects, analyses, and utilizes data related to its DEI climate.

Strategies

1. SG CoP forms a DEI survey subcommittee to investigate the DEI climate and catalog DEI accomplishments of various SG programs.
2. DEI survey subcommittee develops, and every two years, administers, analyzes, summarizes and broadly shares results of surveys on DEI climate and SG program efforts to incorporate DEI.
3. SG CoP creates communication products (e.g. infographic one-pagers) explaining the importance

of DEI to SG network.

Outputs

1. DEI survey instruments.
2. Summaries of SG survey data.
3. A report on longitudinal analysis of DEI climate surveys.
4. DEI communication products.

Outcomes

1. SGA, NSGO, and NSGAB are aware of DEI climate surveys and understand the importance of participating in them. (short-term)
2. Results from DEI surveys are highlighted in publications, reports and presentations to the SGA, NSGO and NSGAB. (short-term)
3. All SG programs and at least 70% of individuals complete DEI surveys. (mid-term)
4. DEI climate data inform SG policies and procedures. (mid-term)
5. SGA, NSGO, and NSGAB support long-term assessment of SG's efforts to advance DEI. (long-term)

Goal 4: Sea Grant provides regular training and professional development on various aspects of DEI.³

Strategies

1. SG CoP facilitates the creation of a DEI professional development subcommittee that coordinates learning opportunities and shares experiences regarding DEI best practices via in-person and virtual dialogues.
2. NSGO and SG program directors promote DEI professional development and dialogue with their staff.
3. SG staff participate in DEI learning opportunities sponsored by the SG CoP and host universities.

Outputs

1. SG-led DEI professional development training agendas and/or minutes or recordings.
2. Summaries of the number of SG staff and faculty who participate in DEI professional development trainings (both those offered by SG and other institutions).
3. Summary of SG-led DEI professional development training evaluations.

Outcomes

1. SG staff are aware of DEI professional development programs offered by SG CoP. (short-term)
2. SG staff who participate in DEI professional development opportunities demonstrate increased DEI awareness. (short-term)
3. Increase in number of SG staff, including directors, who participate in DEI professional development opportunities. (mid-term)
4. SG staff are able to articulate why DEI is important and share best practices. (mid-term)

Research

Goal 1: Sea Grant addresses issues of diversity and underrepresentation of its research reviewers, panelists and awardees.⁴

³ Refer to case study 14 in DEI best practices paper.

⁴ Refer to case study 1 in DEI best practices paper.

Strategies

1. SG CoP facilitates the creation of a DEI broadening participation subcommittee that develops a strategic plan to measure and diversify representation among its research reviewers, panelists, and awardees.
2. DEI broadening participation subcommittee provides training for staff, reviewers, and panelists on issues relevant to inclusivity, including implicit bias.
3. SG programs engage diverse representation of research community when recruiting reviewers and panelists, with particular emphasis on UU individuals and early-career scientists.
4. In coordination with SG programs, NSGO clearly communicates broadening participation practices within SG.

Outputs

1. Updated NSGO guidance and policies to increase engagement of PIs and research partners from UU communities.
2. Communication products that raise awareness of SG research opportunities to UU communities.
3. Summary of SG federal funding opportunities (FFOs) and request for proposals (RFPs) with language that encourages diversity of awardees and communities served.
5. Analysis of data highlighting diversity of SG applicants, awardees, reviewers, and panelists, with summary results made available through NSGO and state SG program websites, presentations, and other communication products.

Outcomes

1. SG directors and research coordinators are aware of strategies aimed at broadening participation strategies. (short-term)
2. NSGO guidelines and policies are consistently updated with content focused on broadening participation. (short-term)
3. SG FFOs and RFPs include language that encourages diversity of among applicants and communities served. (short-term)
4. Diverse institutions, faculty, and students including those that have been underrepresented in prior research portfolios, are aware of and apply for SG research opportunities. (mid-term)
5. Increased participation of diverse institutions, faculty, and students in SG funded research. (long-term)

Goal 2: Sea Grant takes a leadership role in stimulating research and scholarship to address topics of value to diverse communities.⁵

Strategies

1. SG programs leverage their extension and education programs to identify emerging topic areas that can help to develop targeted RFPs and FFOs to engage diverse stakeholder groups, including UU communities.
2. SG funded investigators conduct research on topics that address diverse communities' needs.
3. In coordination with NSGO, SG programs develop reporting metrics to track ways in which SG-funded research addresses diverse communities' needs by encouraging SG awardees to report outcomes of broadening participation activities as part of the reporting process for grants.
4. In coordination with SG programs, NSGO initiates the development of SG-wide classification codes in PIER for all broadening participation funding activities. Classification codes can be found on this website:

⁵ Refer to case study 2 in DEI best practices paper.

https://seagrant.noaa.gov/Portals/0/Documents/funding_fellowship/forms_templates/Classification%20Codes/sg_classification_codes_2013.pdf

5. NSGO develops a publicly accessible webpage on its website that highlights SG's broadening participation efforts, and facilitates broad dissemination of information. For example, see NSF's broadening participation portfolio:
https://www.nsf.gov/od/broadeningparticipation/bp_portfolio_dynamic.jsp

Outputs

1. Targeted FFOs and RFPs encourage research that serves diverse stakeholder groups.
2. Communication products that raise awareness of SG research to UU communities.
3. Summary of evaluation data that demonstrate ways in which SG addresses diverse communities' needs.

Outcomes

1. FFOs and RFPs are developed to engage diverse stakeholder groups. (short-term)
2. Stakeholders participate in pre-proposal stage evaluation of the relevance of proposed research projects. (mid-term)
3. Diverse stakeholders are engaged in SG research, including participatory or use-inspired research. (long-term)
4. Enhanced accountability and tracing of SG-supported broadening participation efforts through several mechanisms. (long-term)

Extension

Goal 1: Sea Grant extension staff have the capacity and skills, including knowledge of best practices and demographic data to effectively serve diverse communities.

Strategies

1. SG programs analyze the demographics of those served to identify gaps in extension and outreach services.
2. SG extension programs assess advisor and partner representation.
3. SG DEI CoP sponsors DEI professional development opportunities for extension staff.
4. NSGO and SG programs develop evaluation protocols to assess demographics of audiences served and cultural relevance of extension programming.

Outputs

1. SG program summary of state (or program area) demographics compared to demographics of extension audiences reached.
2. SG program summary of state demographics compared to demographics of extension advisors and program partners.
3. Summary of number of SG extension staff who participate in DEI professional development opportunities.
4. Summary of case studies that describe how traditional knowledge and cultural relevance is included in programming.
5. SG extension program evaluation summaries that assess demographics of audiences served.

Outcomes

1. SG extension staff are aware of how to access demographic data for the population in their area of operation. (short-term)
2. SG extension staff are aware of best practices for engaging UU groups. (short-term)

3. SG extension staff have the knowledge to undertake programming that is inclusive of traditional knowledge and is culturally relevant. (short-term)
4. NSGO and SG program routinely use standardized collection and analysis of demographic data for planning and decision-making. (mid-term)
5. SG extension staff use best DEI practices to engage UU groups. (mid-term)
6. SG extension staff share best practices and improve their extension programming based on lessons learned from engagement with UU communities. (mid-term)
7. SG extension staff undertake programming that is inclusive of traditional knowledge and culturally relevant; they engage audiences and address coastal challenges with socioeconomic and historic lens. (long-term)

Goal 2: Communities have equal access to relevant scientific information via extension programming that facilitates sound, science-based decision-making.⁶

Strategies

1. SG extension staff develop and sustain partnerships with organizations that represent UU communities.
2. SG extension staff create and expand upon programming that serves UU communities.
3. SG extension staff engage UU groups in program planning.
4. SG extension staff develop program evaluations to assess how needs of diverse audiences are met.

Outputs

1. Summary of organizations with which SG programs partner, with UU groups specifically identified.
2. Summary of SG programming designed to serve UU groups.
3. Summary of evaluation data that demonstrate SG programs met audience needs.

Outcomes

1. SG extension staff recognize the specific needs of UU communities for extension programming. (short-term)
2. Increase in number of UU groups that are aware of SG extension resources relevant to them. (short-term)
3. Increase in number of UU groups that are represented in SG extension programming and have access to SG extension resources. (mid-term)
4. SG extension program participants are more reflective of population demographics.(long-term)

Education

Goal 1: Sea Grant educators and fellowship administrators have the capacity, skills, and knowledge of best practices and demographic data to effectively serve diverse communities.⁷

Strategies:

1. SG educators, in coordination with the DEI CoP, survey current SG practices and programs that build capacity for education efforts that incorporate DEI considerations.
2. SG educators and fellowship administrators participate in DEI professional development opportunities.

⁶ Refer to case studies 3, 4, 5, 7, 8, 12 and 13 in DEI best practices paper.

⁷ Refer to case study 11 in DEI best practices paper.

3. SG programs annually identify administrators/faculty at K-12 institutions, homeschool groups, technical schools, community colleges, HBCUs, MSIs, tribal colleges, community-based organizations, and other UU-serving organization to communicate SG teacher trainings and student programming, internship, research, and fellowship opportunities.

Outputs

1. Summary of number and proportion of SG education staff and fellowship administrators who participate in DEI professional development opportunities.
2. Summary of SG program outreach tools and plans to reach administrators and faculty at K-12 institutions, homeschool groups, technical schools, community colleges, HBCUs, MSIs, tribal colleges, community-based organizations (including homeschoolers), and other UU-serving organizations.

Outcomes

1. Increase in number of SG educators and fellowship administrators that have participated in education- and fellowship-related DEI programs. (short-term)
2. Administrators/ faculty at K-12 institutions, homeschool groups, technical schools, community colleges, HBCUs, MSIs, tribal colleges, community-based organizations, and other UU-serving organizations are aware of SG teacher trainings and student programming, internship, research, and fellowship programs. (short-term)
3. SG educators and fellowship administrators are aware of DEI best practices to build capacity for education efforts and fellowship programs that incorporate DEI considerations. (mid-term)
4. SG educators and fellowship administrators have strong relationships and partnerships with organizations serving UU communities. (mid-term)
5. Models of best practices for environmental education that reflect DEI considerations are widely available to SG educators. (long-term)

Goal 2: Sea Grant trains a coastal and marine workforce that represents the demographics of the locations where Sea Grant programs operate.⁸

Strategies

1. SG programs collect demographic and institution data for student applicants to fellowship, internship, and research assistantship programs.
2. SG programs in coordination with NSGO identify and develop strategies to alleviate barriers to participation in SG fellowship programs.
3. SG programs and NSGO initiate fellowship opportunities (undergraduate and/or graduate) that encourages participation by students from diverse backgrounds.
4. SG programs and NSGO sponsor efforts that encourage students from UU communities to participate in research, extension, and education.
5. SG program develop communication products to raise awareness of coastal and marine STEM career pathways to UU communities.

Outputs

1. Summary of demographic and institution data on students participating in SG programming, fellowships, internships, and research assistantships.
2. Summary of strategies that can be undertaken to alleviate barriers to participation in SG fellowship programs.

⁸ Refer to case studies 6, 9 and 10 in DEI best practices paper.

3. SG programs and NSGO initiate efforts to recruit UU undergraduate students into coastal, ocean and marine fields.
4. Summary of SG-funded programming, fellowships, internships, and research assistantships that specifically encourage UU student participation.
5. Communication products that raise awareness of coastal and marine STEM career pathways to UU communities.

Outcomes

1. K-16 and informal educators who serve UU communities are aware of coastal and marine STEM career pathways. (short-term)
2. Fellowship administrators understand best DEI practices and barriers that limit UU students in fellowship programs. (short-term)
3. Students from UU groups are aware of SG fellowship, internship, and research assistantship programs, and have access to resources to be competitive applicants. (mid-term)
4. Fellowship cohorts represent the diversity of students enrolled in coastal, ocean, and marine fields. (long-term)

Goal 3: Sea Grant prepares an environmentally literate and informed citizenry that is reflective of diverse populations.

Strategies

1. In partnership with advisory boards and committees, SG programs and NSGO identify additional UU community partner organizations.
2. SG programs conduct needs assessment of community partner organizations to identify educational resources needed to better serve UU groups and communities.
3. SG programs develop accessible education resources in partnerships with UU communities that are inclusive of traditional knowledge, locally relevant, and culturally reflective.
4. SG educators provide connections for all audiences to engage in citizen science efforts and to build collaborative citizen science monitoring opportunities to build a greater understanding of coasts, oceans and great lakes that reflect community concerns and knowledge.

Outputs

1. Education resources needs assessment of UU community partner organizations.
2. Accessible education resources developed in partnership with UU communities.
3. List (by each SG program) of administrators/faculty at technical schools, community colleges, HBCUs, MSIs, tribal colleges, community-based organizations, and other UU-serving organizations that should be made aware of SG education programs.

Outcomes

1. SG educators are aware of needs of UU partner organizations as related to SG focus areas. (short-term)
2. SG programming reflects education needs and priorities of UU communities. (long-term)

Priorities for Investment

The DEI 10-year roadmap is designed to be comprehensive, detailing goals and strategies that are already being implemented, as well as those that could be undertaken. Some state SG programs have made great strides to reach various goals and implement strategies that are already identified in this vision document. The SG network and NSGO can examine the DEI 10-year roadmap, and tailor goals and strategies to the priorities identified in their strategic plans. Whereas no single program can achieve all goals without the

investment of substantial resources (e.g. funding, staff time), we have highlighted three priorities that are especially ripe for investment.

Recommendation 1: Network Building

We recommend that NSGO and SG programs develop and build relationships with national networks and state organizations, respectively, that represent UU communities. Relationship-building requires physical presence at UU-led meetings and events like the annual conference of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), Emerging Researchers National Conference in STEM, and National Society for Black Engineers, among others. SG programs should develop and sustain relationships with administrators/faculty at technical schools, community colleges, HBCUs, MSIs, tribal colleges, and community-based organizations that serve UU communities. ***Funding for staff time and travel is needed to prioritize network building.***

Recommendation 2: Targeted Research Calls

We recommend that SG programs and NSGO develop targeted research calls aimed at addressing research needs of UU communities identified by SG extension and education programs. SG network and NSGO should consider collaborating on updating guidelines and policies with content focused on broadening participation. Lastly, in coordination with NSGO, SG programs should consider developing reporting metrics to track ways in which SG-funded research addresses diverse communities' needs by encouraging SG awardees to report outcomes of broadening participation activities as part of the reporting process for grants. Some representative examples include:

NSF INCLUDES: https://www.nsf.gov/news/special_reports/nsfincludes/index.jsp

NOAA EPP: <http://www.noaa.gov/office-education/epp-msi>

US Department of Education: <https://www2.ed.gov/programs/hsistem/index.html>

Funding for staff time and financial investments in research are required to establish targeted research calls.

Recommendation 3: Undergraduate and/or Graduate Student Fellowships

We recommend that in coordination with SG programs, NSGO should initiate an undergraduate and/or graduate student fellowship program that encourages participation of students from diverse backgrounds, especially students from UU communities. Students would work under the supervision of state SG programs and obtain on-the-ground learning experience by directly supporting SG-led research, extension, education, and/or communications programs. SG can instigate cohort-building by providing peer-mentoring and professional development opportunities for student fellows. Some representative examples include:

UCAR SOARS: <https://www.soars.ucar.edu/>

NSF INTERN: <https://www.nsf.gov/pubs/2018/nsf18102/nsf18102.jsp>

NASA MUREP: <https://www.nasa.gov/offices/education/programs/national/murep/about/index.html>

Funding for staff time and financial investments in education are needed to support student fellowships.

References

- Antonio, A.L., Chang, M. J., Hakuta, K., Kenny, D. A., Levin, S., Milem, J. F. (2004). Effects of racial diversity on complex thinking in college students. *Psychological Science*, 15(8), 507-510
- Conner, T.W. (2016). Representation and Collaboration: Exploring the Role of Shared Identity in the Collaborative Process. *Public Administration Review*, 76(2), 288-301.
- Herring, C.A. (2009). Does Diversity Pay? Race, Gender, and the Business Case for Diversity. *American Sociological Review*, 74, 208-224.
- Dalbotten, D., R. Haacker-Santos, and S. Zurn-Birkhimer. (2014). The role of undergraduate geoscience research in supporting alternative perspectives on the anthropocene. *Future Earth-Advancing Civic Understanding of the Anthropocene*, D. Dalbotten, G. Roehrig, and P. Hamilton, Eds., J. Wiley and Sons, 77-88.
- Forbes. (2011). Fostering Innovation Through a Diverse Workforce. Available at http://images.forbes.com/forbesinsights/StudyPDFs/Innovation_Through_Diversity.pdf
- Goffee, R. & Jones, G. (2013). Creating the Best Workplace on Earth. *Harvard Business Review*. Available at <https://hbr.org/2013/05/creating-the-best-workplace-on-earth>
- Hitlan, R. T., Clifton, R.J., DeSoto, M.C. (2006). Perceived Exclusion in the Workplace: The Moderating Effects of Gender on Work Related Attitudes and Psychological Health. *North American Journal of Psychology*, 8(2), 217-236.
- Howell, J., & Elliott, J.R. (2018). Damages Done: The Longitudinal Impacts of Natural Hazards on Wealth Inequality in the United States. *Social Problems*.
- McKay, P. F., Avery, D. R., Tonidandel, S., Morris, M. A., Hernandez, M., Hebl, M. R. (2007). Racial Differences in Employee Retention: Are Diversity Climate Perceptions the Key? *Personnel Psychology*, 60(1), 35-62.
- McKinsey. (2015). Diversity Matters. <http://www.mckinsey.com/business-functions/organization/our-insights/why-diversity-matters>
- Nadal, K.L. (2011). The Racial and Ethnic Microaggressions Scale (REMS): Construction, reliability, and validity. *Journal of Counseling Psychology*, 58(4), 470-480.
- National Academies of Sciences, Engineering, and Medicine. (2015). Does the Public Trust Science? Trust and Confidence at the Intersections of the Life Sciences and Society. A Workshop Summary. Washington, DC: The National Academies Press.
- Phillips, K. W. (2014). How Diversity Makes Us Smarter. *Scientific American*, 311(4). Available at <https://www.scientificamerican.com/article/how-diversity-makes-us-smarter/>

Sewell, A. A. (2015). Disaggregating ethnoracial disparities in physician trust. *Social Science Research*, 54(1), 1-20.

Sommers, S. R. (2007). Race and the decision making of juries. *Legal and Criminal Psychology*, 12, 171-18.

University Corporation for Atmospheric Science. (2018). UCAR Case for Diversity. Available at https://www.ucar.edu/sites/default/files/documents/related-links/2018-05/The%20Case%20for%20Diversity_Final.pdf

Wright, B. E., Moynihan, D. P., & Pandey, S. K. (2012). Pulling the levers: Transformational leadership, public service motivation, and mission valence. *Public Administration Review*, 72(2), 206-215.

Wynne, B. (1992). Misunderstood misunderstanding: social identities and public uptake of science. *Public Understanding of Science*, 1(3), 281-304.

Appendix I: DEI Subcommittees

DEI Vision Team: The DEI vision team includes representatives from nearly all 33 Sea Grant programs. Jane Harrison (North Carolina Sea Grant) and Mona Behl (Georgia Sea Grant) coordinated and facilitated integration of DEI subcommittee efforts.

DEI Vision Team Participants	Sea Grant Program	Survey Subcommittee	Professional Development Subcommittee	Preparation of DEI Logic Models	Broadening Participation Subcommittee
Paula Cullenberg	AK				
Michele Frandsen	AK				
Lisa Schiavianato	CA			X	
Theresa Talley	CA				
Nancy Balcom	CT				
Anoushka Concepcion	CT				
Syma Ebbin	CT	X	X	X	X
Sylvain De Guise	CT				
Jim Falk	DE				
Ed Lewandowski	DE		X		
Jen Merrill	DE				
Chris Petrone	DE				
Victor Blanco	FL				
Karl Havens	FL				
Marty Main	FL				
Armando Ubeda	FL				
Ana Zangroniz	FL				
Jessica Brown	GA				
Jill Gambill	GA				
Mark Risse	GA				
Marie Auyong	GU	X			
John Peterson	GU				
Austin Shelton	GU				
Tara Owens	HI				
Stuart Carlton	IL-IN				
Laura Kammin	IL-IN				
Caitie Nigrelli	IL-IN				
Kristin TePas	IL-IN				
Carolyn Foley	IL-IN				X
Ashley Eaton	LC				
Elissa Schuett	LC				

Kris Stepenuck	LC	X			
Bill Valliere	LC				
Dianne Lindstedt	LA				
Beth Bisson	ME				
Kristen Grant	ME				
Mike Allen	MD	X			
Jen Dindinger	MD				
Fredrika Moser	MD				
Rhett Register	MI	X			
Catherine Riseng	MI	X			
Thomas Beery	MI				
Dale Bergeron	MI	X			
John Downing	MI				
Cynthia Hagley	MI				
LaDon Swann	MS-AL				
Julie Simpson	MIT				
Michael Triantafyllou	MIT				
Robert Vincent	MIT				
Stephanie Otts	NSGL				
Judith Gray	NSGAB				
Joshua Brown	NSGO				
Kola Garber	NSGO				
Jon Pennock	NSGO				
Becky Briggs	NSGO				X
Erik Chapman	NH				
Julia Peterson	NH				
Claire Antonucci	NJ				
Pete Rowe	NJ				X
Diana Burich	NJ				
Kathy Bunting-Howarth	NY		X		
Helen Cheng	NY				
Jane Harrison	NC				
Christy Perrin	NC			X	
Susan White	NC				
Jessica Whitehead	NC				
Jill Bartolotta	OH				
Sam Chan	OR				
Dave Hansen	OR				
Sarah Kolesar	OR		X		X
Mary Pleasant	OR	X			

Shelby Walker	OR				
Ann Faulds	PA		X	X	
Marti Martz	PA				
Sarah Whitney	PA				
Pam Rubinoff	RI				
Susan Lovelace	SC				
Susannah Sheldon	SC				
Linda Chilton	USC			X	
Linda Duguay	USC				
Phyllis Grifman	USC				
Alyssa Mann	USC				
Nick Sadrpour	USC				
Michell Covi	VA				
Troy Hartley	VA				
Mike Jahncke	VA				
Lisa Lawrence	VA				
Gywn Hinton	WA				
Kate Litle	WA				
Melissa Poe	WA				
Maile Sullivan	WA				
Melissa Watkinson	WA				
David Hart	WI				
Julia Noordyk	WI				
Deidre Peroff	WI				
Terri Liebmann	WI				

Appendix II: Survey Responses

Survey I – Sea Grant Demographics and Workplace Climate

Information was collected from individual Sea Grant personnel on their demographics and perceptions of workplace climate. This first survey effort was intended to collect baseline data. The intent is to deploy the same survey instrument every two years and evaluate results over time. An online survey was conducted to collect this information in fall 2017. The total population of Sea Grant program employees, approximately 850 individuals, were contacted by email with a response rate of 33%. It should be noted that respondents from Gulf of Mexico Sea Grant programs made up only 6% of the total survey sample (compared to 20% for other regions) and hence may be underrepresented in the survey results.

Key findings:

- 68.9% respondents identified themselves as female; 29.3% as male, 0.4% transgender/gender non-conforming; and 1.5% indicated that they preferred not to respond.

- Majority of Sea Grant professionals identified themselves as white (89.2%); 4.8% of Sea Grant professionals were Asian American; 1.5% African-American; 1.1% Native American/Alaska Native; 0.4% Middle Eastern; and 5.6% indicated other. None of the respondents identified themselves as Hawaiian/Pacific Islander.
- Majority of the respondents identified as non-Hispanic (94%); 6% identified themselves as Hispanic or Latino.
- On average, respondents indicated agreement with positive DEI workplace climate statements that were personal in nature. For example, statements like, “At work, my opinions seem to count.” However, there was some spread in the data and differences based on demographics and employment characteristics. For example, female respondents were less likely to strongly agree with positive workplace climate statements as compared to male respondents.
- In comparison with positive DEI climate personal statements, respondents had lower levels of agreement with statements about (i) awareness of the difficulties that underrepresented or underserved populations face in pursuing employment in coastal/marine STEM careers, (ii) satisfaction with their state Sea Grant program’s efforts to hire staff of diverse backgrounds, and (iii) inclusion of people from diverse backgrounds as a stakeholder audience.
- Just over one-third, or 36% of respondents indicated that they “always” feel they belong at work; 43% of respondents said they “usually” feel they belong, and 16% said they “sometimes wonder whether” or “rarely feel” they belong.
- By gender:
 - 30% of females, 48% of males, 0% of transgender/gender non-conforming, and 50% who preferred not to respond said they “always” feel they belong;
 - 47% of females, 38% of males, 100% of transgender/gender non-conforming, 0% who preferred not to respond said they “usually” feel they belong, and
 - 15% of females, 9% of males, 0% of transgender/gender non-conforming, and 0% who preferred not to respond said they “sometimes wonder whether” they belong,
 - Finally, 4% of females, 3% of males, 0% of transgender/gender non-conforming, and 50% who preferred not to respond “rarely feel” they belong.
- About 30% of respondents indicated that they had witnessed/experienced: (i) employees being unfairly treated, (ii) microaggressions, and (iii) credit not always given when due.
- About 15% of respondents stated that they had witnessed/experienced: (i) biased recruitment decisions, (ii) unfair hiring processes/decisions, and (iii) inequitable opportunities for professional growth.

Representative Examples of Positive Comments from Survey Respondents

- “Generally I feel very supported in my position. I feel my co-workers and supervisors are invested in my personal well being and professional success.”
- “I think the academy helped create a broader sense of belonging to not only my program but to the national program.”
- “Our program has created a Spanish-speaking working group to address this issue.”
- “I feel we are learning more about our blind spots and trying to do better in hiring and inclusion/target populations.”

Representatives Examples of Room for Improvement Comments

- “I do not feel like our staff is diverse at all. I would estimate 95% of our staff would classify themselves as White.”

- “I have control over hiring as people leave their positions, but I struggle with how to get a truly diverse pool of candidates.”
- “We try to recruit broadly, but the positions are specific, and we get what we get. The system is not perfect, but putting effort into training the next generation, so that there is a diverse workforce with the appropriate background and skills -- my SG program is getting better that at.”
- “I do think though that our staff care about inclusion but don't always have the funds or flexibility to make it happen... We have people who write grants to cover the educational fees for low income or underserved populations but we can't always provide transportation.”
- “I accept a significant share of responsibility for the status quo in my workplace that led me to answer 'Disagree' to both questions. I should have pressed my organization to do better.”
- “We are an all-white organization, so racial tension doesn't arise.”
- “We have some colleagues who make disparaging and hurtful remarks about women and about our work.”
- “Our SG leadership allows us to do DEI training and push the DEI envelope, though I wish they would engage in DEI training so they could have the same background.”
- “Saying that we do, and then actually ACTING on intent are two different things. We could do better on implementing.”
- “Some of our stakeholders are very inclusive, while others will show up with things like vehicles and clothing with big confederate flags on it.”
- “I think that the intentions are there...However, everyone is already working at their maximum capacity so learning tactics and strategies to improve DEI efficiently would be helpful...I'm happy to see that this is topic that is gaining momentum but lots of work still needs to be done. Thanks for your work on this important issue.”

As a result of survey I, several research questions and future needs analysis emerged. Here are a few of them.

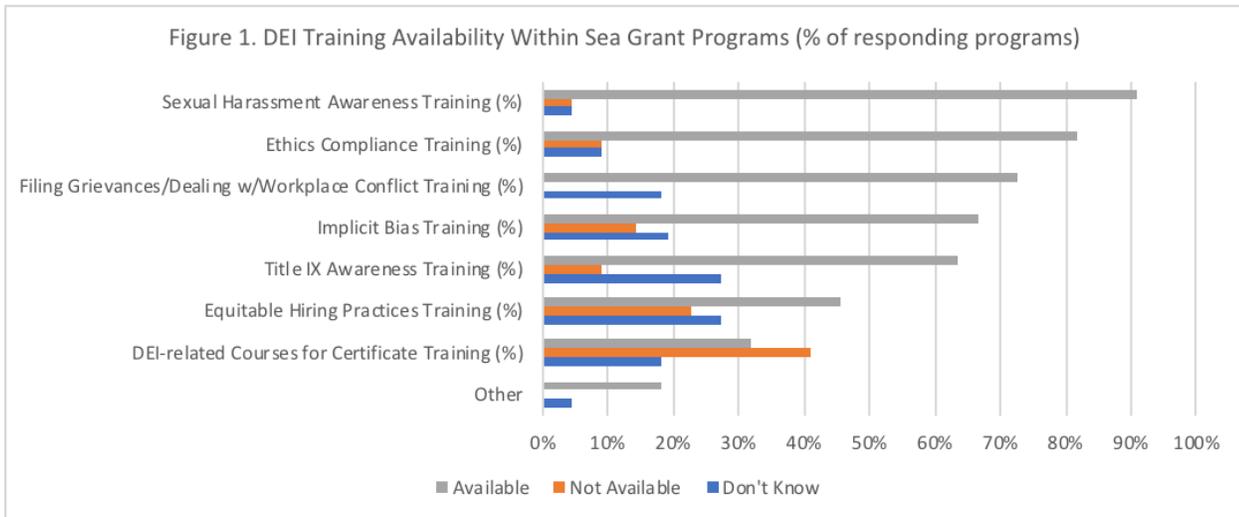
- Is the gender split of the sample reflective of the total Sea Grant network population? Are we over representing female respondents due to self-selection bias or another reason?
- Is the underrepresentation of Gulf state Sea Grant personnel due to that region having fewer staff members, challenges in survey distribution, self-selection bias, other?
- Responses to DEI climate questions show significant differences between female and male respondents. However male respondents are also more likely to be in management positions, older in age, and have more years with Sea Grant. It is difficult to tease out these multiple factors.
- Other patterns to explore include: differences in responses by income level, by race/ethnicity, by Sea Grant region, by length of time on the job, by position type, and by age.
- What is the range of responses and standard deviations as well as averages/summarized data?

Survey II – DEI Efforts and Challenges for Sea Grant Programs

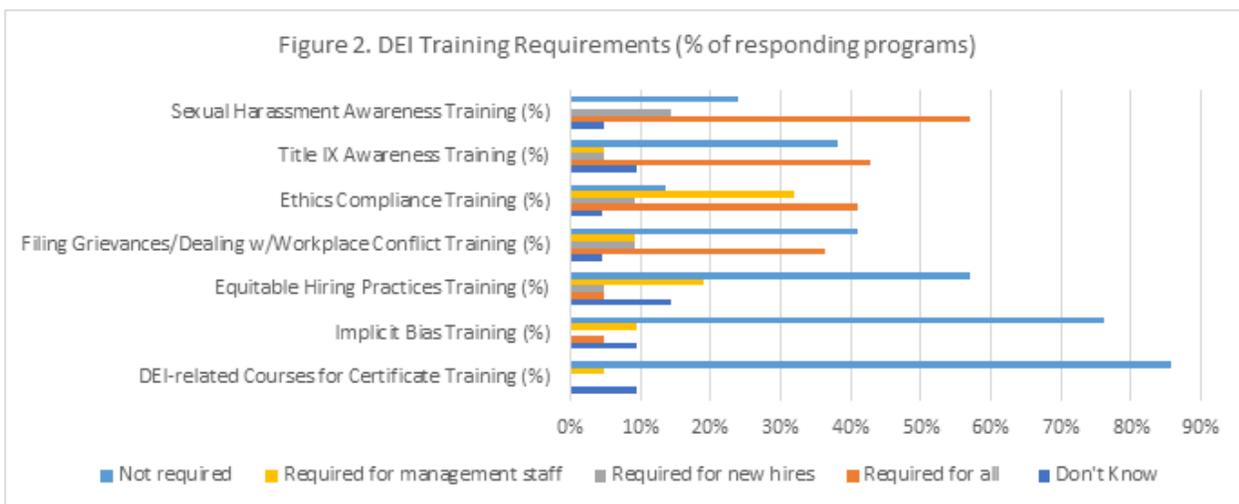
A second survey was deployed to collect information about professional development opportunities, efforts, priorities, and challenges of each state Sea Grant program with respect to DEI. A representative from each state program was asked to answer a questionnaire with input from program leadership. The representatives completed the online survey in spring 2018. Representatives from the total population of 33 Sea Grant programs, the National Sea Grant Law Center, and the National Sea Grant Office were contacted by email with a response rate of 66%; 22 out of 35 programs responded. In four of six Sea Grant regions at least 67% of programs responded. However, one region had a response rate of only 25%.

DEI Trainings Available:

Program representatives were asked about DEI trainings available to their staff. Sexual harassment awareness training was most commonly available; over 90 percent of programs had access to this training (Figure 1⁹). A majority of programs also had access to ethics compliance training (82%), training to file grievances or deal with workplace conflicts (73%), implicit bias training (67%), and Title IX awareness training (64%). Less than half of the programs had access to equitable hiring practices training (45%) and DEI-related courses for a certificate (32%).



Of trainings available, only sexual harassment awareness training was required for all staff in more than half of programs (57%; Figure 2). This training was also most commonly required for new hires (14%). For management staff, ethics compliance training was the most commonly required (32%). Universities overwhelmingly provided these trainings (75%), with outside consultants (13%) and Sea Grant programs (8%) offering them occasionally.

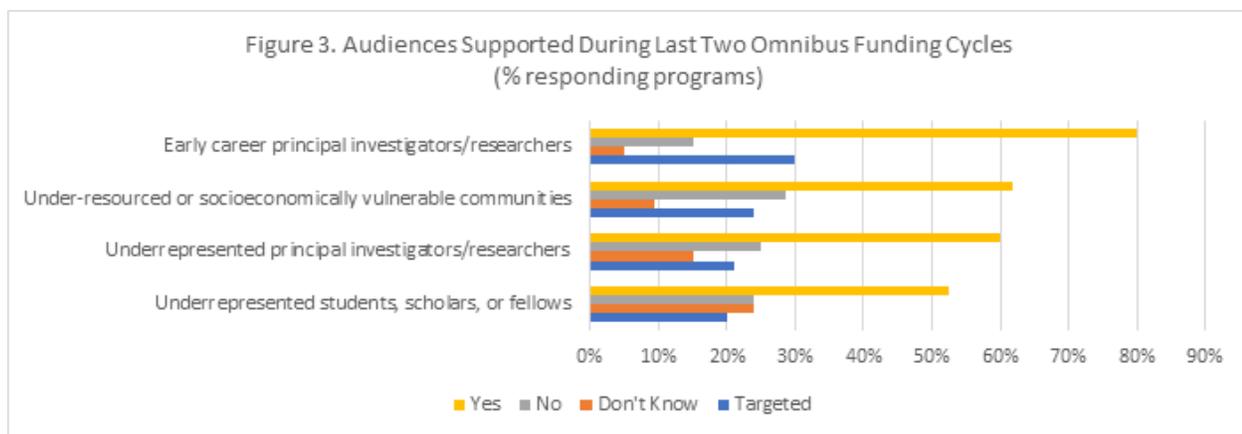


⁹ Each figure is derived from 20 to 22 responses.

DEI Efforts:

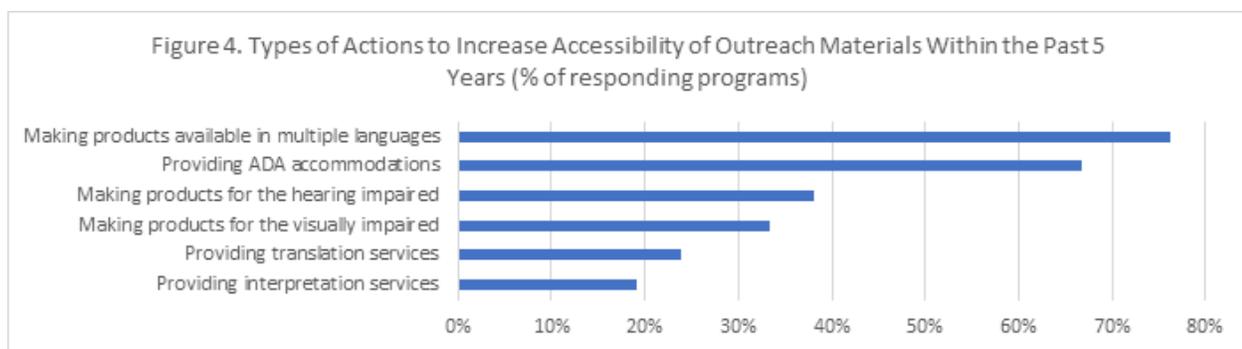
Advisory board composition, research funding decisions, and outreach activities all have the potential to consider DEI principles. All programs (n=20) indicated that disciplinary expertise and occupational sector diversity were considered when forming Program Advisory Boards, and 80% considered geographic distribution. Fewer considered gender (65%), race (50%), ethnicity (35%), or age (30%) when forming these boards.

During the past two omnibus cycles, 80% of programs funded early career principal investigators (PI) (Figure 3). In the same period, 62% funded research, fellowships, or scholarships to benefit under-resourced or socioeconomically vulnerable communities. Sixty percent funded underrepresented PIs. However, less than a third targeted these audiences in RFPs to broaden access to resources.

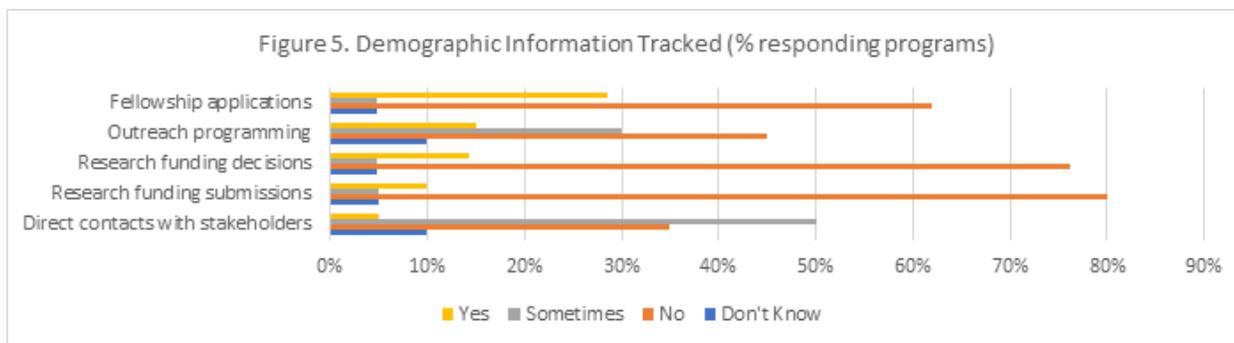


Seventy-one percent of programs (15) have historically black, tribal or other minority serving colleges or universities in their state. Of those, 53% (8 programs) tracked applicants from those institutions for Knauss or other fellowships, half of which (4 programs) had targeted recruitment efforts for these institutions.

The most common way programs have increased accessibility of outreach materials during the past five years was to make outreach products available in multiple languages (76%) (Figure 4).



Less than a third of programs tracked demographic information related to research or outreach (Figure 5).



DEI Priorities:

Respondents were asked what DEI-focused efforts should be prioritized by the Sea Grant Network over the next five to 10 years. Four options could be ranked and respondents could also select and identify up to three additional priorities. The highest ranked priority was “actively recruiting staff and students to broaden DEI across the network.” The second highest priority was “developing and offering DEI-focused training for all staff.” The third priority was “providing new colleague orientation on DEI issues.” The lowest priority was “developing recommended DEI-focused hiring practices that all managers are requested to follow.”

Fifteen respondents added other priorities. The additional priorities, listed in order of prevalence, generally reflected variations of the other four:

1. Develop trainings and best practices for working with underserved and vulnerable populations and communities;
2. Diversify Sea Grant staff, interns, advisory boards as well as the communities served;
3. Increase resources aimed at DEI efforts including funding, information, and organizational support;
4. Change NSGO metrics to recognize DEI efforts and help tell success stories;
5. Target RFPs and fellowships to encompass greater diversity;
6. Work with external partners such as HBCUs, agencies and communities.

When asked what individual programs might try to implement over the next several years, many program efforts aligned with the priorities listed above that the Network should tackle as a whole (Table 1). For example, many would like to increase outreach to underrepresented communities, institutions, and individuals for RFPs and fellowships as well as outreach, education, and extension programming in the next 5 to 10 years. The nature of that outreach inherently will vary by state. Some states would focus on tribal or Minority Serving Institutions (MSI) connections while others would be more focused on topical issues (e.g. frequently flooding communities). Other areas of proposed expansion include efforts to increase diversity of new hires, advisory boards, and partner organizations; expanding and institutionalizing DEI training for staff and advisory boards (e.g. recurrent as opposed to one off programs); and developing targeted multilingual outreach materials.

Table 1. How Sea Grant programs wish to expand DEI external programming in the next decade

Areas of broad interest	Targeted outreach to expand outreach/extension/education participation Targeted outreach to expand RFP and Fellowship applications Modification of RFPs to target underrepresented students or faculty Expansion of staff and advisory board programs to build DEI issue awareness
Areas mentioned by a few programs	Expansion of extension/education programming to increase relevance Use of DEI as a new criterion in program planning and decision making Diversification of advisory boards Development of multilingual extension/outreach materials Program assessments focused on DEI issues Recruitment and development of more diverse staff
Areas mentioned by one or two programs	Development of stronger partnerships with outside organizations Tracking of demographic data within programs Creation of an award for DEI programming

DEI Challenges:

Respondents listed a number of structural and organizational challenges that may slow our ability to incorporate DEI principles into Sea Grant programs. Structural barriers, originating from outside of Sea Grant programs, included:

- Limited candidate pools and the need to develop interest in our fields from a young age
- Limited external funds to expand programs
- Lower quality or limited proposals from MSIs

Organizational barriers, emerging within Sea Grant programs, included:

- Programmatic and institutional inertia and sometimes resistance
- Lack of capacity and knowledge
- Difficulties recruiting diverse applicants
- Time constraints
- Limited cultural awareness and language barriers
- Existing network demographics and the (lack of) diversity
- Partnership challenges
- Staff training, retention, and slow turnover.