

Strategic Plan for Advancing Belonging at SML

*It is not our differences that divide us.
It is our inability to recognize, accept, and celebrate those differences
– Andre Lorde*

The mission of Shoals Marine Laboratory (SML) is to provide outstanding experiential, place-based education and to support innovative research programs focused on understanding and sustaining the marine environment.

Since 1966, the focus of SML has been offering undergraduate students from around the world a unique opportunity to study marine science in the field with outstanding faculty in an engaged and effective manner. Learning at SML is grounded in hands-on, active, experiential, sustainability-infused pedagogy. SML courses and internships provide rigorous training in a variety of marine-related subjects and prepare students for careers and advanced studies in the fields of marine biology, research sciences, ecology, engineering, and environmental sustainability. All SML programs are permeated with our ethos of valuing scientific and community collaboration, public service, and caring for the earth.

A diversity of perspectives, backgrounds, origins, talents, and interests both strengthen and deepen the SML experience. We are committed to supporting a diverse community and a strong sense of belonging for all. Belonging at SML is about fostering respect and appreciation for difference, having a shared purpose, and being a part of a community, while simultaneously being valued and appreciated for the uniqueness that each person brings. What follows is our plan for increasing belonging at SML.

I. Introduction

The need for science training has never been greater. Worldwide the demand for STEM-capable (Science, Technology, Engineering, and Mathematics) employees is growing faster than any other segment of the U.S. workforce (NAB 2020). At the same time, the U.S. is lagging behind the world in terms of recruitment, retention, and success of STEM students (PCAST 2020; NAS 2020). Adding to the challenge is the fact that women and people of color are not represented in STEM relative to their proportion in the U.S. populations (Holman et al. 2018; NAB 2020). The National Science Board estimates that the number of women and Black Americans must more than double, and Latinx must triple from 2020 to 2030 to meet the STEM needs of the U.S. (Fig. 1).



Figure 1. National Science Board's assessment of existing (colored) and required (outlined) STEM- trained people to fulfill workforce needs estimated by 2030 in the United States. (This figure is from NAB 2020)

The value of increasing diversity reaches critically beyond the sake of having more people to fill jobs in science. Diversity influences what research questions are asked, the methods employed, what data is determined to be relevant, interpretation of that data, and which ideas are promoted. When a diversity of scientists engage in developing new knowledge, technology and innovation better serve the entire population. Research has shown that greater diversity among employees in business and academia yields more innovation, improves financial performance, increases effective and efficient problem solving, reduces conflict in the workplace, grows creativity, reduces employee turnover, and leads to higher publication rates with greater impact (Jemison, 2019).

Well-trained and dedicated scientists are the foundation upon which all STEM endeavors are built. In order to lead the world in science innovation, educators must be proactive about developing scientists representing a diversity of perspectives, backgrounds, origins, and interests. Increasing diversity, as well as inclusion and equity, is an imperative for science, workforce, and economic development.

"We live in a time of great challenges-- poverty, hunger, disease, climate change, environmental degradation-- and in a country fueled by an "innovation economy." Science has such a big impact on our shared prosperity and security, now more than ever, we need to take action, not only for the benefit of women and underrepresented minorities, but for the benefit of the nation and the world."- Dr. Mae Jemison, Chair, Committee on Addressing the Underrepresentation of Women in Science, Technology, Engineering, Mathematics, and Medicine, National Academies of Sciences, Engineering, and Medicine

The role of universities and their institutions, like SML, is critical to making science more inclusive. College is one place where STEM students, especially women, first-generation, economically disadvantaged, and people of color, often leave the field (Graham et al. 2013). Only half of all first-year students who enter STEM actually graduate with a degree (Hayes et al. 2009). The President’s Council of Advisors on Science and Technology has called for increasing the retention of college students in STEM (PCAST 2020).

The call for more diversity in STEM has led to an abundance of research to identify what types of educational programs are effective. While this body of knowledge is still emerging, studies repeatedly show that active, hands-on, immersive learning experiences like those at SML can increase success in recruiting, retention, and academic progression among underrepresented students in STEM (Beltran et al. 2020). Key attributes of programs like SML field courses and our Shoals Undergraduate Research Group (SURG) that support students include active learning, small class sizes, independent research experiences, team mentoring, and the discovery of majors that students did not know previously know existed (Beltran et al. 2020; Kuh 2008; NAS 2017). These types of learning modes and characteristics increase science self-efficacy and self-identification as scientists and lead to the pursuit of higher degrees in STEM fields (Schultz et al. 2011). Multiple exposures to experiences like SML, increase effectiveness (Hernandez et al. 2018). Finally, the variety of opportunities (course & SURG topics) that SML offers our students provide many points of entry offering people many avenues to come into STEM related careers (Batchelor et al. 2021).

While SML is well poised for strong contributions to inclusion in science, we must make improvements to existing conditions. We currently have low racial diversity on Appledore Island across all members of our community from staff to students. Our student populations have self-identified as people of color on average 31% over the past five years (Fig. 2).

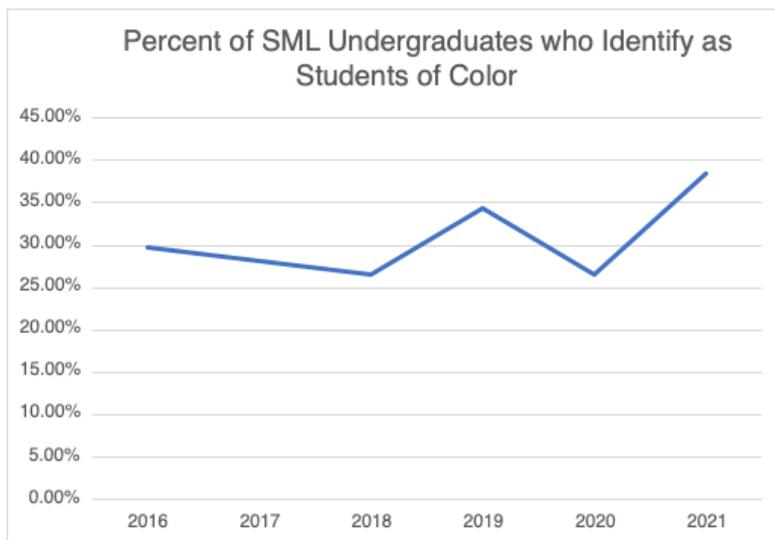


Figure 2. Percentage of self-identifying students of color at SML from 2016 to 2021.

In 2019, nationally, 40% of the population was of people of color (Frey 2020). Not only is SML about 10% short with the overall representation of people of color, but we are especially weak among Black students with about 1% of our student population self-identifying as Black (Fig. 3).

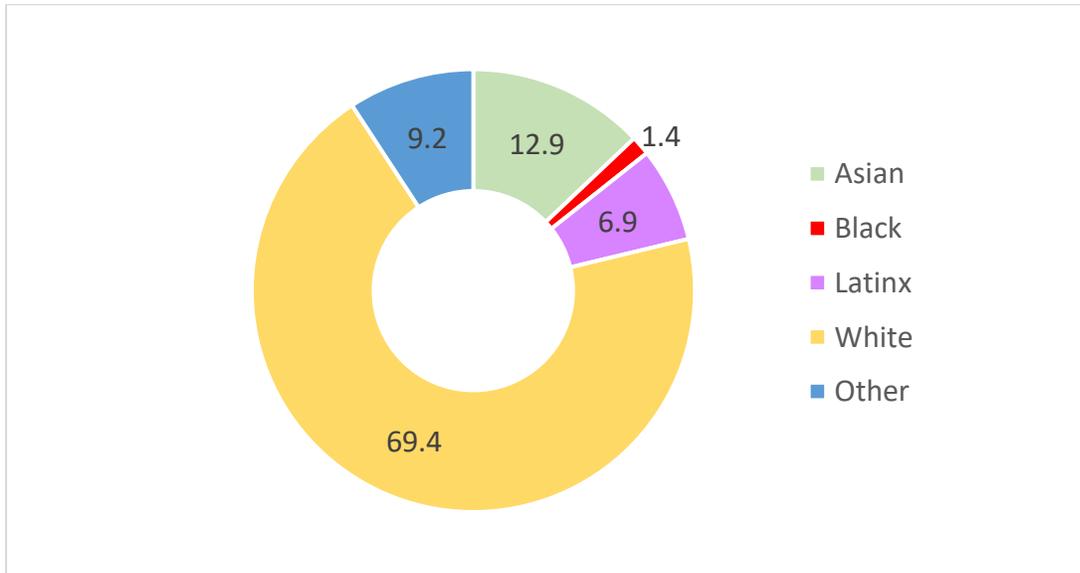


Figure 3. Average percentage of each race that student self-identify at SML from 2016 to 2021 (Black students make up 1.4% of this data).

In 2019, 12.5% of the U.S. population identified as Black (Frey 2020). Among gender, SML hosts more female than male student each year and has done so for many years. SML has not tracked information on sexual identity or orientation in our community. Antidotally, we typically have many LGBTQIA+ community members spread across our faculty, staff, and students. Finally, SML faculty and staff are, based on observations over the last few years, less diverse in race than the students but similar in gender and sexual orientation/identity. SML does not currently collect diversity data on the staff and faculty.

With regarding to economic diversity, SML is diverse among the values of Expected Family Contribution (EFC, a figure reported in each student's Free Application for Federal Student Aid which we use for scholarship evaluation purposes) (Fig. 4).

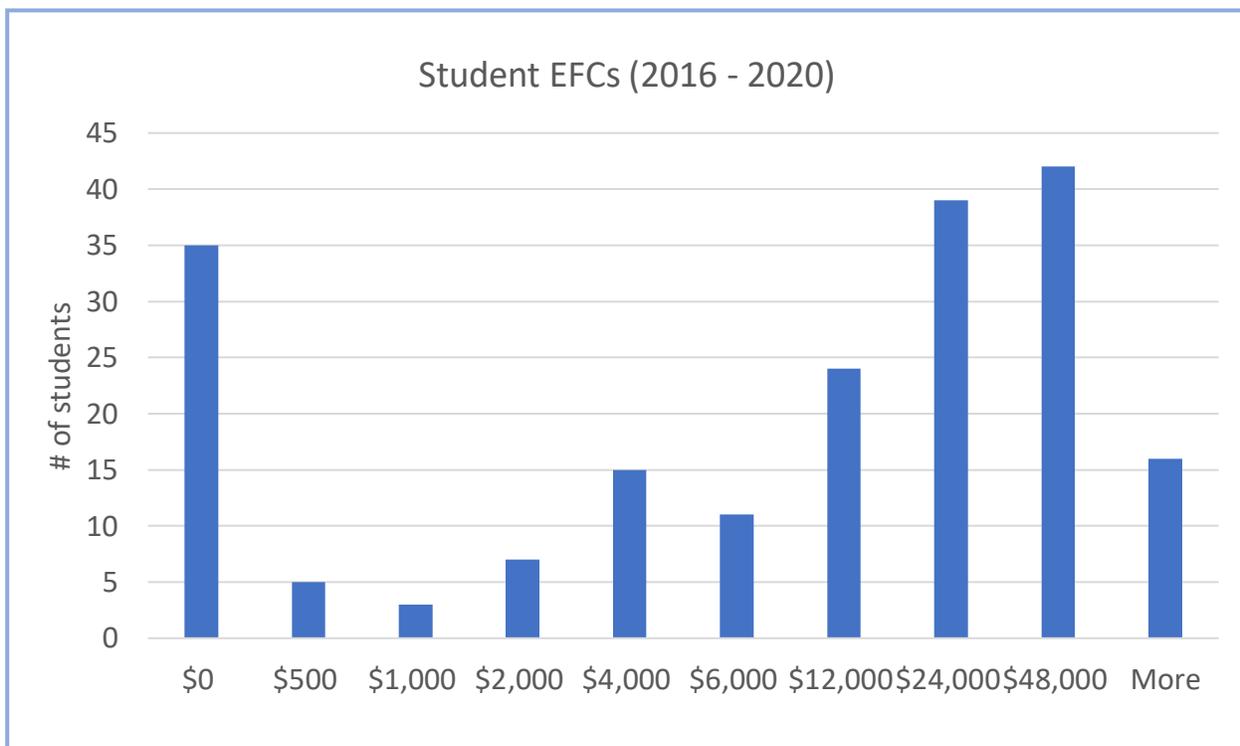


Figure 4. Histogram of 2020 SML Student Expected Family Contribution calculated in the Free Application for Federal Student Aid.

Nationally, the average EFC is \$10,000 across the board and \$14,000 among 4-year colleges; 10% have an EFC greater than \$25,000 and slightly more than half are under \$2,500 (Kantrowitz 2020). At SML the average EFC is \$19,209; 37% have an EFC under \$6,000; and 50% are over \$24,000. At SML 16% of our students have a zero EFC, compared to the national 4-year public college average of 31% in 2016 (Kelchen 2018). The average SML course costs \$6,880 in 2021. SML provides financial support for over 80% of our students and in 2021, we awarded over \$480,000 in scholarships.

While numbers are critical measures of inclusion, they do not tell the whole story. SML has also received student reports of sexism among the faculty (1 in 2019, 1 in 2017), sexual harassment and bias (1 in 2019, 1 in 2021), religious bias (1 in 2021) and a lack of support for students of color (1 in 2019). Of course, these are the official reports (which are submitted to UNH and Cornell annually), many experiences go unreported.

Shoals Marine Laboratory is committed to making meaningful contributions towards the goal of making science more inclusive. At SML, we are focused on diversifying all aspects of our programs and endeavors. In parallel, we are devoted to creating a strong sense of belonging at SML. Belonging at SML is about fostering respect and appreciation for difference, having a shared purpose, and being a part of a community, while simultaneously valuing and appreciating the uniqueness that each person brings.

To borrow a phrase from SML founder Dr. John Kingsbury, “here is how we will do it”.

II. Creating the “Belonging at SML” thread

SML aims to make Belonging at SML a thread that weaves through all our practices, policies, and programs. We hope that by making this theme a central tenet we will enhance diversity, equity, and inclusion. We have begun to build this uniting theme through information gathered from student reports, SML staff, the SML community, peer-reviewed scientific literature, the Shoals Executive Committee, and existing Cornell and UNH diversity plans. The ideas within this plan were heavily influenced by the 2020 SML Staff’s three-month diversity and equity training program with UNH’s New Hampshire Listens, and a SML Community Forum where over 50 participants ranging from faculty, alumni, and students joined in conversation with staff to discuss avenues for increasing diversity, inclusion, and equity at SML. Feedback from the entire SML community for this plan was encouraged via an anonymous online survey and direct solicitation from SML’s Executive Director (Executive Committee, SML Staff, and several SML alumni, faculty, researchers, and DEI officers at UNH and Cornell).

III. SML Belonging Vision

A Vision of Belonging at SML: SML is a collaborative, inclusive and caring community that promotes belonging and success in all that we do; and that shares common, fundamental values grounded in justice, civility, and respect while appreciating that our diversity is a source of enrichment and strength.

SML is steadfast in our pursuit of equity, inclusion, diversity, and belonging. These commitments are central to our mission— to provide outstanding experiential, place-based education and to support innovative research programs focused on understanding and sustaining the marine environment. Through the actions outlined in this plan and future iterations of this plan, we will center Belonging at SML to support our mission and our community.

Concepts and terminology used in plans such as this can vary considerably, and usage evolves over time. To ensure a clear understanding of how this plan uses terminology, definitions of key words and phrases are provided here:

Diversity: The myriad ways in which an individual differs and the impact these differences may have on the given experience of an individual. It refers to the wide range of intersectional identities including but not limited to: national origin, language, race, color, disability, ethnicity, gender, age, religion, sexual orientation, gender identity, socioeconomic status, veteran status, and family structures. It encompasses differences among people concerning where they have lived and their respective life experiences (adapted from NAS and UNH).

Inclusion: The ongoing, iterative, and constructive process of creating an environment in which an individual or group is welcomed, respected, supported and valued as a fully participating member. While diversity is an important aspect of inclusion, diversity alone is not indicative of an inclusive environment. Rather, inclusion is an active and intentional process of reflection,

change, and improvement with the goal of ensuring all individuals feel a sense of belonging. (adapted from UNH).

Equity: The fair treatment, access, opportunity, and advancement for all people, while at the same time striving to identify and eliminate barriers that have prevented the full participation of some groups. The principle of equity acknowledges that there are historically underserved and underrepresented populations and that fairness regarding these unbalanced, and often systemic conditions is necessary to provide equal opportunities to all individuals (adapted from U. of Washington and UNH).

Belonging at SML: Belonging at SML is about bringing together Diversity, Equity, and Inclusion (Fig. 5). We find it by fostering respect and appreciation for difference, having a shared purpose and being a part of a community, while simultaneously being valued and appreciated for the uniqueness that each person brings to the community (adapted from Cornell).

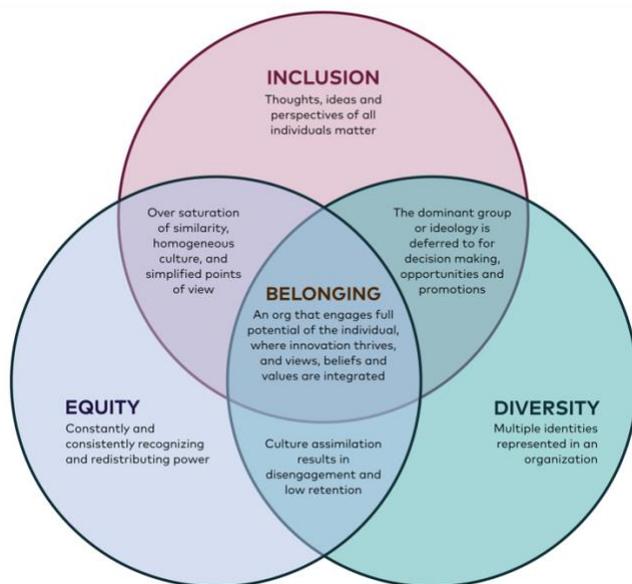


Figure 5. "Each element represents a different piece of the full human experience. Addressing only one or two of these falls short on gaining, the full human experience- a sense of belonging." (Figure and quote - Burnette 2019)

Shoals Marine Laboratory is an institution governed jointly by the University of New Hampshire and Cornell University. We share and extend the core values of both.

Cornell University Core Values: As a university founded to be a place where "...any person can find instruction...", we value diversity and inclusion, and we strive to be a welcoming, caring, and equitable community where students, faculty, and staff with different backgrounds, perspectives, abilities, and experiences can learn, innovate, and work in an environment of respect, and feel empowered to engage in any community conversation.

UNH President's Statement on Diversity: "The University of New Hampshire is committed to the values of diversity, equity, and inclusion. All the elements of our mission as a public, land-

grant institution—education, research, and service—are enhanced by honoring these values. A diverse faculty, staff, and student body reflects our current world and the global workforce our students will have the opportunity to enter after graduation. Discussions both in and out of the classroom benefit from a wide array of backgrounds by exposing students to various viewpoints and experiences. Diversity also enriches the intellectual life of the university by broadening the perspectives we bring to our research and service, thus improving the solutions we develop for important problems. Ensuring equity and inclusion for members of our community means that everyone feels truly welcome at UNH and can focus squarely on achieving their potential and pursuing their dreams. Public universities at their best provide great opportunities for *all* talented people, and an inclusive environment is the necessary catalyst for this outcome. We acknowledge that UNH has not been and is not today a fully inclusive university, but we continue to aspire to live up to our mission by committing to diversity, equity, and inclusion and by taking action that showcases that commitment.”

IV. SML Belonging Goals

I. Building Awareness and Intervention Skills.

Increase foundational DEI knowledge, awareness, and intervention skills among the SML community, especially the staff, faculty, and mentors. Focus on understanding appropriate behaviors, building skills to help others learn when inappropriate behaviors arise, and acknowledging of the benefits of enhancing DEI at SML.

II. Welcoming Climate

Create and present a sense of place at SML that values and promotes DEI for all participants, island visitors, and partners by facilitating their full inclusion into activities and community that support all. Fostering a welcoming climate requires each person to respect diverse perspectives, engage in appropriate conduct, recognize implicit bias, and reduce barriers to participation.

III. Enhance DEI across Programs, Policies and Practices

We will enhance diversity, equity and inclusion at SML through efforts aimed at the recruitment and retention of diverse students, faculty, and staff. This includes reducing financial barriers to participation in SML programs through scholarships awards and innovative partnerships. This also includes examining SML policies and practices that could create barriers to DEI at SML.

IV. Commitment

To ensure the long-term implementation and sustainability of this plan, SML commits to the actions, review of progress, learning, and adaptation of activities to achieve successful and meaningful change. We recognize that the success of this plan relies on our ability to weave DEI principles into all SML decisions, policies, practices, programs, and activities. Finally, we are a learning community and if we are successful, we will need to update this plan to keep the pace of our evolving understanding.

V. SML Belonging Actions

SML Belonging Actions are conceived and expressed in a manner that is specific, measurable, attainable, relevant, and time-based. By employing measurable attributes, we will be able to report each year on our progress and make any necessary changes to our approach or strategy for action please see Table 1 for actions.

Table 1. Timeline and details of action items (abbreviations: ED= Executive Director, AD= Associate Director, DCR= Director of Community Relations, DO= Director of Operations, DF- Director of Facilities, CC= Communications Coordinator, AA- Administrative Assistant

Building Awareness Actions					
What	Year	Repeats?	Lead	Metric	Notes
DEI and Safety training for year-round staff	2021	annual	ED to organize. All Staff to participate. Any staff can propose training by Oct each year.	Training accomplished. Noted on Belonging Page. Annual report	Topics will cover all aspects of DEI, with an emphasis on intervention skill building; field safety. Could include bringing social science experts to UNH for speaking event/workshop.
DEI training for seasonal staff - at start of season and periodically throughout summer at staff meetings	2021	annual	DO; all staff can make requests	Minimum of 3 trainings	emphasis on intervention skill building. topics include: Mental health, interpersonal field safety, by-training. Align with scheduled boats
Create a Belonging at SML webpage	2021	on-going	CC	Page on website and includes all parts	Include: this plan, our vision, definitions, grievance reporting procedures/training, and other learning resources for the entire community, Strategic plan, ways to network with other students before and after SML experience (social media community pages). Consistent

					branding for SML Belonging.
Disseminate information about publicly available DEI training	2021	on-going	CC	SML social media and on Belonging Page	
Land acknowledgement statement	2021	revised as needed	ED	Statement on website	Work with Indigenous group to create; where to employ: public events, orientation, possible conference talks
DEI training for faculty and mentors.	2022	annual, review and change every 2 years	AD	documentation that they took training	All mentors and faculty will take an online DEI training program (the same as staff) before arriving on island. Maybe provide documentation of similar training. Topic include inclusion & welcoming language. Change topics over time. What to do if they dont do it.
DEI statement on all SML course syllabi	2022	revised as needed	AD	Statement on all course syllabi	same as SML DEI statement- Belonging page

Welcoming Climate Actions					
What	Year	Repeats?	Lead	Metric	Notes

Provide diversity in the SML marine science seminar series	2020	on-going	ED & AD	Annual line of speakers represents a variety of speaker backgrounds	diversity of race, gender, and sexual identity/orientation among the speakers as well as a diversity of job types from academic to public to private industry
Code of Conduct attestation from ALL overnight visitors	2021	reviewed every 2 years	DO	Everyone signs annually	
Share progress on this plan	2021	on-going	DCR	Progress shown in annual impact report, website, end of season SML Executive Committee Meeting	
Promote stories of Belonging	2021	on-going	DCR & CC	Increase diversity represented in photography, highlighting community voices and profiles, blogs, social media take overs, etc.	
Worksheet for guiding program leaders and faculty 1. promoting respectful dialogue 2. creating Community Agreements	2021	on-going	ED & AD	Worksheets created. Evidence that programs using them.	Lara from Cornell and Community Agreements. In faculty orientation?

Gender-neutral bathrooms and bedrooms	2021	on-going for new construction	DF	Existence of gender-neutral bathrooms	Any new construction will specifically include gender neutral bathrooms and shower spaces as well as additional space allowing privacy for other specific group needs
Welcome video for prearrival students	2023	remake as needed	CC & AC		Welcome to the island send to accepted students. Include code of conduct and belonging. ED record
Appledore Orientation for participants that includes Belonging statements, code of conduct, fire, water, food, etc	2021	reviewed every 2 years	ED & AD	Have standardize communications product to share with overnight visitors academic and public programs	live and recorded power point presentation; include land acknowledgement, belonging statement. Who goes to orientation: faculty, students, AFP, staff a couple of times a season. Who delivers: Island coordinator & Assistant Island Coordinator. Non-traditional arrivals could have recorded version. Could also record and send to incoming students.

Create additional ways for visiting scholars/researchers to interact with academic programs. Class or/and SURG presentations. Informal discussion about research	2022	on-going	AD & ED	Plan made, visiting scientists interactions with SML programs	could be career path oriented topic; surg could help them in field (sign up)
All island handbooks (student, faculty, researcher, staff) updated with Belonging resources and information about our DEI policies, reporting, processes and support resources, code of conduct, fire and water etc.	2023	review every 3 years with community input	AD-faculty & students, researcher, DO-staff	Faculty, staff, student, visiting scientist, overnight visitor handbooks all updated	figure out reporting and repercussions in workshop with outside help; transformative justice??; land statement; get feedback from community for revision; combo into 1 with sections for difference audience

Enhancing Diversity, Equity, and Inclusion Actions					
What	Year	Repeats?	Lead	Metric	Notes
Online courses	2020	annual	AD	1-2 courses per season, reported in impact report	
SML Diversity Scholarship	2020	on-going	ED & DCR	Goal: annual balance of \$70,000	needs endowment or annual plan; review rubric for scholarship evaluation.
Review and update SML Researcher policies	2021	update every 5 years	AD & ED	Plan created and followed	include safety, DEI concerns, Fair and transparent practices, clear understanding of

					data management & ownership, funding sources, formal/informal check ins, consequences for failure to follow rules
Partnerships with institutions serving underrepresented students and scientists	2021	on-going	ED & AD	One meeting per year where collaborations are explored. Report in newsletter.	Include Manchester Schools (2021); Codman Academy in Dorchester, MA (2021); the UNH Howard MOU opportunity ?, Great Bay Community College ?, others?
Develop hybrid coursework that include the intersection of DEI and marine science	2023	annual	AD & ED	1 course per season, reported in impact report. Reach out to all faculty to include environmental justice/DEI into their course (esp. science communications)	Coastal Environmental Justice designed in 2021; explore scholarships for on-island & other barriers for getting to island section of course.
Examine all SML scholarships for any exclusive language and other barriers.	2021	on-going	AD & AC	Report to SML staff	examine rubric on scholarship evaluating
Prioritize returning underrepresented students for financial aid	2022	on-going	AD	Annual season report out to the SML Executive Committee and	

				in Impact Report	
Continue team mentoring for the Shoals Undergraduate Research Group (SURG)	2020	annual	AD		diversity SIRF
Review the SML field safety plan that includes field work in courses, SURG, and Visiting Scientists for DEI issues and concern	2023	review every 5 years	DO	Updated plan	Include the SML field safety plan in the island handbooks. In this plan, require Principal Investigators to discuss field safety and individual concerns before commencing field work (as per Demery and Pipkin 2021).
Create recruiting plan for staff and faculty	2024	update every 5 years	DO & AD	Plan created and followed	Include identifying and learning from peer institutions that have succeeded at increasing and retaining diversity.
DEI program fundraising and development (can definitely overlap with partners)	2023	odd years	AD, ED, and DCR	Number of grant applications. Number of on-going DEI specific programs at SML	Identify foundation and government funds for DEI in science education by 2022. Apply at least every other year for such support until

					achieved, then maintain at least two DEI specific. Codman and Manchester continued funding would be a good place to start.
Community Belonging Surveys: 1. Annual (in course review + another of staff, faculty, others); 2. Pop-up course check in	2025 season	annual, update questions every 3 years	AD & ED; pop up carried out by Island Coordinator or lab coordinator (could be requested by faculty)	Analyze and publish the results of this survey on our Belonging at SML webpage and in the Shoals Executive Committee annual meeting.	To identify systemic problems and provide an internal mechanism for action and improvement, a field survey/assessment should be developed. The survey should be developed by or in collaboration with experts in designing workplace climate surveys and use validated tools to ensure reliable and useful data. in winter of 2025- figure out what we do with results- reporting and action.
Create recruiting plan for students, SURG, SIRF	2024	update every 5 years	AD & AC's	Plan created and followed	Include identifying and learning from peer institutions that have succeeded at increasing and

					retaining diversity.
SML Academic Staff to attend national and international diversity conferences to learn, recruit, and share SML DEI progress	start attending 2024	every other year	AD & AC's	One conference attended annually	(e.g., MANRRS, NCORE, SACNAS)
Training bias for faculty and visiting scientists; SIRF; AIR; TA's; course/programs leaders hired by SML; SURG?	2024	annual	AD	signature to form that says they did it	Find online bias training course available and mandatory for all researchers
Winter marine science career forums	2024	annual	CC	1+ Career panel and participants signing up	for SML alumni that emphasize DEI mentors and issues. AFA could support
review incident reporting and action plan	2023	review every 5 years	DO	Plan created and followed	Define responsibility to report to SML staff and then SML reporting to UNH & Cornell. Consider reporting to staff for learning and tracking purposes. Explore how to communicate incidents to the SML Community
Add Title IX records into the background checks for	begin 2022	on-going	DO		work with UNH on this

faculty, mentors, staff					
Travel fund for students travel.	2025	annual	DCR & ED	Annual balance of at least \$10,000	Look to endow or have annual plan. Application to travel grant would be included in need-based scholarships, priority to EFC = 0. consider running airport van

Commitment Actions					
What	Year	Repeats?	Lead	Metric	Notes
Belonging Plan Creation and Revise	2021	review every 5 years.	ED & SML Executive Committee & outside as needed	Review all metrics listed elsewhere.	Review & adjust as necessary to achieve success in each metric, and revise the entire plan every five years. Report progress in the Annual Impact Report, to the Shoals Executive Committee and SML staff.
DEI topic(s) in all staff performance reviews (goals)	Start winter 2022	annual	All staff	Number of DEI performance metrics for each staff	At least 1 metric per staff member.

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