

Mentoring Underrepresented Minorities in Marine STEM

2023 National Association of Marine
Laboratories (NAMML)
Winter Meeting

Session Chair – Itchung Cheung, Chair of NAML Education Committee,
Hatfield Marine Science Center, Oregon State Univ.

Panelists

Aly Busse, Mote Marine Laboratory

Lauren Wetzell, Kewalo Marine Laboratory

George Matsumoto, Monterey Bay Aquarium Research Institute

Panelist 1 - Aly Busse, Mote Marine Laboratory



MarSci-LACE

Marine Science Laboratory Alliance Center of Excellence

Recruiting, Supporting, and Retaining Minorities in STEM

Aly Busse

Associate Vice President of Education
Education Research Program Manager
MarSci-LACE Co-PI/Project Director



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MarSci-LACE

Goal: Increase the number and preparedness of historically excluded individuals entering into and staying in marine STEM through specifically designed Undergraduate Research Experiences (UREs)

3-Prong Approach

- New recruitment and application approaches
- Intern support resources during/after URE
- Mentor skill development

Mentor Development

MarSci-LACE Mentor Development Workshop

- 6-hour, 5-module training
- Based on Entering Mentoring (<https://cimperproject.org>)
- Includes: Intro to Mentoring, Psychosocial Factors of UREs, Ally Training, Anti-Harassment Training, and Development of a Mentorship Plan
- New modules in development: Culturally Responsive Mentoring, Creating Safe and Inclusive UREs

Refresher Workshop

- 2-hours; completed annually after initial workshop
- Review of key topics
- Case study discussions
- Reflection activities
- Revisiting Mentor Development Plan

Initial Outcomes & Next Steps

Outcomes

- 97% valuable use of their time
- 98.5% would recommend the MarSci-LACE Mentor Development Workshop to a colleague
- significant increases in: mentor confidence, mentoring underrepresented minority (URM) interns, and aligning intern and mentor expectations

Next Steps

- New module development
- Developing a Facilitator Guide
- Offering Train the Trainer workshops outside of MarSci-LACE (Fall 2023)
- Ongoing, more robust data collection

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Panelist 2 - Lauren Wetzell, Kewalo Marine Laboratory

Our Lab

Director, Robert “Bob” Richmond, Ph.D.



- Biodiversity & Human Impacts on from ridge to reef in Hawaii & across the Pacific Islands
- 6 faculty; 40+ grad students; 2 post-docs; 1 ES
- Former students leadership positions across Pacific Islands: PICRC, UoG, US Fisheries...
- Support NHPI in STEM Education (15+ yrs)
 - NSF ATE & REU programs & summer symposia
- International Coral Reef Symposium (2016)
- Work with communities: SurfRider Blue Ocean Task Force



UNIVERSITY OF HAWAII AT MĀNOA

KEWALO MARINE LABORATORY

NSF Advanced Technological Education



Project Summary:

Our project improves scientific and technological education and prepares Pacific Islander students for careers and advanced education in STEM at five regional community colleges: American Samoa Community College, the College of Micronesia - FSM, the College of the Marshall Islands, Northern Marianas College, and Palau Community College. This grant focused on **educating students with technological tools and skills** to assess and monitor climate change impacts on their home islands and associated coral reef ecosystems.

92%
Graduates pursued adv. degrees or careers in STEM

64%
Program growth from Year 1 to Year 2

1,000+
Students benefited in Years 1 & 2

01 
TECHNICAL WORKSHOPS

Use adv. technologies
Train faculty & students
Develop supportive resources

02 
ENHANCE CURRICULUM

Inquiry & place based
Enhanced with:
ATE & traditional knowledge

03 
PAID INTERNSHIPS

Conduct research
Professional work experiences
Mentorship & leadership
Resume skill development

04 
STEM PIPELINE

Train middle/high school students on ATE
Increase college enrollment in STEM

Project Methods:

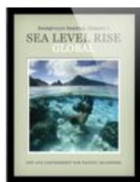
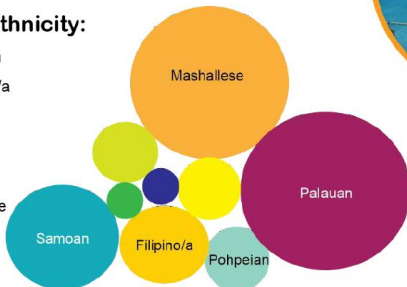
The hands-on, experiential elements of the program **continue to grow** local institutional capacity to meet the mounting economic, social, public health and environmental sustainability challenges faced in the region, and spur additional investments in the regional educational infrastructure by the local governments, insuring effort sustainability beyond the project.

Our Students:

Our student population covers an 8,000 km expanse of ocean where over 20 different languages are spoken. Although commonly grouped as "Pacific Islanders", our students **differ ethnically, linguistically and culturally**. To meet the unique needs of our students, our curricula is designed to be geographically and culturally relevant.

Student Ethnicity:

-  Caucasian
-  Chamorro/a
-  Filipino/a
-  Kiribati
-  Kosrean
-  Marshallese
-  Palauan
-  Pohpeian
-  Samoan



Internships:

Despite the social distancing impacts from the Covid-19 pandemic, 12 students completed their internships in Year 2 with **partnerships from 7 different organizations**. Eleven of these students pursued either advanced degrees or jobs in STEM. Internship opportunities have had a profound impact on attracting and retaining our students in STEM fields.

Next Steps:

We will hold a 5-day "footlocker" workshop where the participants will build and use underwater robotics (ROV) in a partnership with the **Marine Advanced Technology Education (MATE) Center**. The equipment and resources will strengthen STEM curricula.



Next Steps



- Co-write grants promoting NHPI in STEM
 - Financial support for NHPI students to continue education
 - Promote cultural relevance: evaluation & mentoring
 - Bridging technical programs: SWCC & Palomar CC
- PhD student, Educa. Psychology, UHM
 - Culturally relevant mentorships in STEM; sense of belonging, identity & confidence
 - Indigenous methods; participatory action research



UNIVERSITY OF HAWAII AT MĀNOA

KEWALO MARINE LABORATORY

Panelist 3 - George Matsumoto, Monterey Bay Aquarium Research
Institute

A photograph of two whale tails breaching the ocean surface. The tails are dark and covered in small bumps. In the background, there is a large, long building with a grey roof and many windows. Several birds are flying in the sky above the building.

Monterey Bay Aquarium Research Institute

George Matsumoto
He/him/his mage@mbari.org

Promote a culture of inclusion

MBARI is located on the unceded land of the Hueñeren and Guacharron peoples. This area was home to a settlement called Locuyusta in the region of Calendaruc, which means “ocean homeplace.” The Native peoples of this area were taken to Mission San Juan Bautista and Mission San Carlos Borromeo de Carmelo. Native people taken to Mission San Juan Bautista are represented today by the Amah Mutsun Tribal Band.



Land acknowledgement statement developed in partnership with the Amah Mutsun Land Trust.

Increasing Diversity, Equity, Inclusion, and Accessibility at the Monterey Bay Aquarium Research Institute



Dr. George I. Matsumoto (he, him, Japanese, father, husband) | Senior Education and Research Specialist | Monterey Bay Aquarium Research Institute

AGU LANDInG Cohort 1 Leadership Academy and Network for Diversity and Inclusion in the Geosciences

Abstract

This AGU LANDInG Broadening Participation Project focuses on DEIA efforts at the institutional level and provides a potential primer for other organizations at a similar step in the DEIA process.

Introduction

The Monterey Bay Aquarium Research Institution (MBARI) is a nonprofit research organization founded in 1987 with a current staff of around 210 people (we have a number of open positions) and our last demographic review was in March 2022 (Self-reported data from hiring) revealed a man:woman gender ratio of 70:30 percent and a total of 32 (16%) staff from marginalized communities.

The primary project goal of this AGU LANDInG project is to work with AGU LANDInG staff, MBARI management, and the newly formed MBARI DEI Advisory Committee (DEI AC) on increasing diversity and equity professional development, making MBARI a more welcoming environment, and to foster a more diverse and inclusive workforce at MBARI. This initiative represents an opportunity for MBARI to build trust and engagement within its staff and work towards making MBARI a more inclusive and welcoming environment for all. MBARI's newly developing Strategic Plan includes eight (8) challenge statements, two of which are focused on DEI efforts.

Challenge #7: Invest in our people and foster a diverse and inclusive workforce.

Challenge #8: Make ocean research more accessible to all.

MBARI will add DEI efforts to our existing research and outreach efforts. This might include asking our seminar speakers to include their thoughts about DEI as part of their seminars and trying to change the culture at MBARI and other neighboring institutions. Change is happening - MBARI has just posted a position in our Human Resources group to help us recruit and build applications from more diverse communities as well as help us focus on DEI efforts within the institution.

Logic Model

Resources	Activities	Outputs	Outcomes	Impact
A supportive Management Team	Create a land acknowledgment statement for website, presentations, and meetings	Demonstrate that MBARI is aware of the identity of the original land owners	Help demonstrate that MBARI is working on equity and inclusion	Increased awareness and support for DEI efforts
	Create an internal labor charge account for DEI related activities	Be able to quantify amount of staff time spent on DEI	Acknowledgment that DEI requires staff time	
A supportive DEI Advisory Committee	Create an internal DEI Advisory Committee	DEI AC helps MBARI work towards a more inclusive, diverse, and equitable working environment	DEI AC provides guidance to MBARI	More diverse seminar speakers and interns to help increase applicant pool diversity in turn
Supportive MBARI staff	More fully integrate DEI into existing outreach and education efforts	Include a more diverse seminar speakers and interns	Introduce MBARI staff to a more diverse set of researchers and students	MBARI represents a more inclusive and welcoming environment
An existing framework for outreach and education	Hire a Recruitment specialist to help with DEI hiring	Recruitment Specialist to help with DEI resources, advice, and professional development	Develop better and more inclusive recruitment and hiring practices	MBARI with a more diverse staff
In place/started	Conduct an anonymous survey on workplace discrimination, harassment, and other misconduct	Survey to help MBARI and DEI AC identify areas to focus on	DEI Seminar series and Professional Development sessions	
Not completed yet	Make ocean research more accessible to all	Ensure that MBARI provides equitable access to everyone	Ensure that facilities are ADA accessible	

Project Goals

Offer a welcoming work environment

DEI Advisory Committee

Funding for DEIA efforts

Increase support for interns, apprentices, postdocs, and students

Increase application pool from diverse communities and organizations via exposure from seminar speakers and interns

Recruitment specialist
Focus on retention

Become more equitable, inclusive, diverse, and accessible

Increase hires from diverse communities and organizations

Increase outreach to diverse communities and organizations

Outreach and recruitment extends foundation in DEIA and promotes our mission

Increase diversity in seminar speakers and interns

MBARI interns, apprentices, postdoctoral fellows, and affiliated students become the next generation of ocean champions and role models in their communities

Theory of Change Model

Adopting a scientific management theory of change, the proposed activities will catalyze change in a rational, linear, and purposeful fashion.

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TABLE 1. Strategies for individual and collective action.

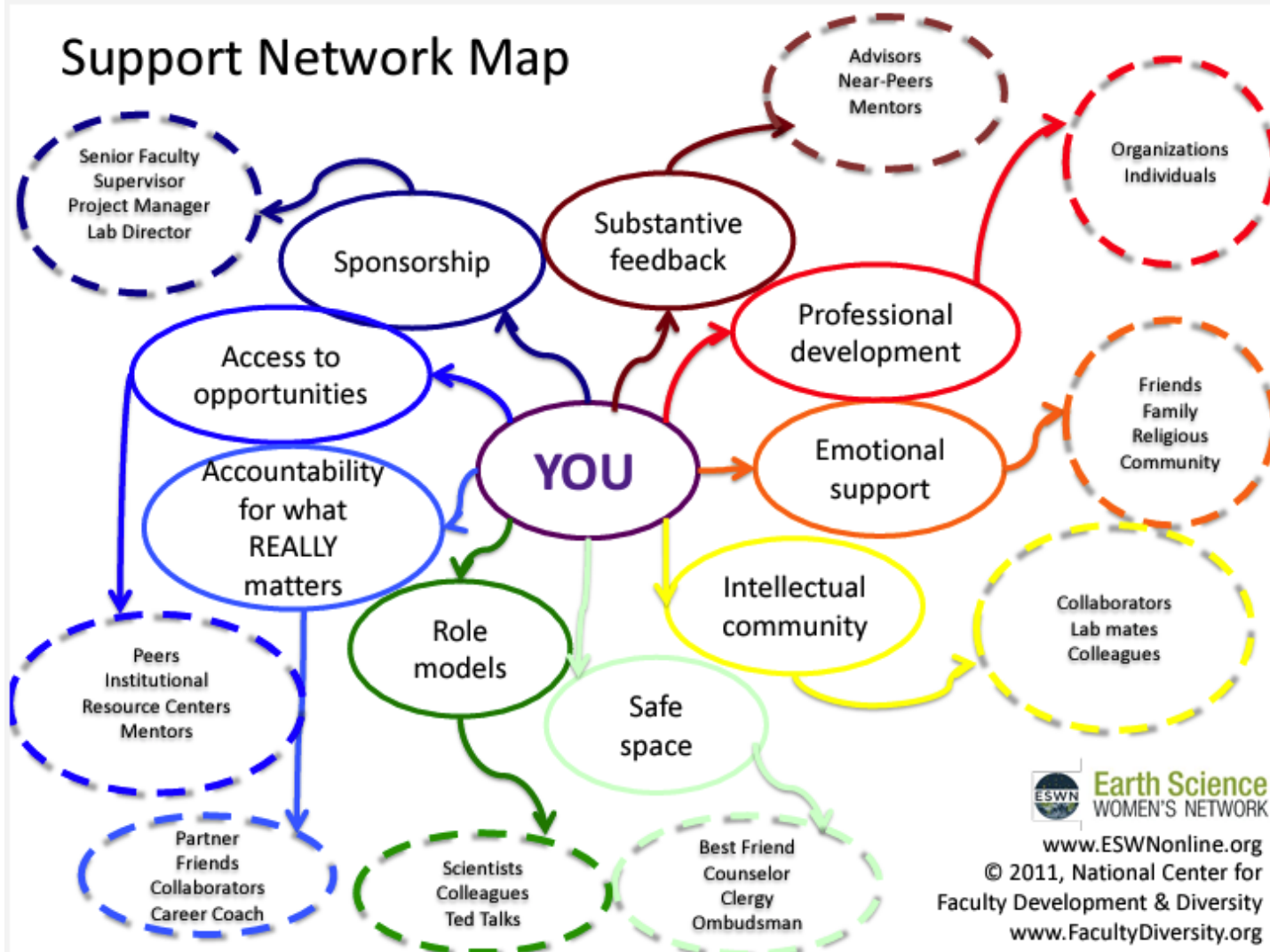
CHANGING THE CULTURE OF COASTAL, OCEAN, AND MARINE SCIENCES STRATEGIES FOR INDIVIDUAL AND COLLECTIVE ACTIONS

Oceanography
Vol. 34, No. 3
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By Mona Behl, Sharon
Cooper, Corey Garza, Sarah
E. Kolesar, Sonya Legg,
Jonathan C. Lewis, Lisa White,
and Brandon Jones

	STRATEGIES	SCALE OF ACTION
RECRUITMENT	Engage Families and Community	Individual
	Integrate Arts and Humanities in STEM	Individual
	Leverage Scientific and Professional Societies	Collective
	Collaborate with Community Colleges	Collective
	Build and Strengthen Partnerships with Minority-Serving Institutions	Collective
	Implement Culturally Relevant Pedagogy	Collective
	Use Cohort-Focused and Place-Based Education Approaches	Collective
RETENTION	Acknowledge Lived Experiences	Individual
	Build Inclusive Work Culture	Individual
	Lead Positive Change	Individual
	Reimagine the Promotion and Tenure Process	Collective
	Provide Mentorship and Build Cohorts	Collective
	Foster Partnerships with Minority-Serving Institutions	Collective
	Leverage Professional Societies and Institutions	Collective

Support Network Map



www.ESWNonline.org
© 2011, National Center for Faculty Development & Diversity
www.FacultyDiversity.org

Sponsorship

- people who
- lobby for you behind closed doors
- mention your name for promotions
- suggest you be given more responsibility in a project.

Access to opportunities

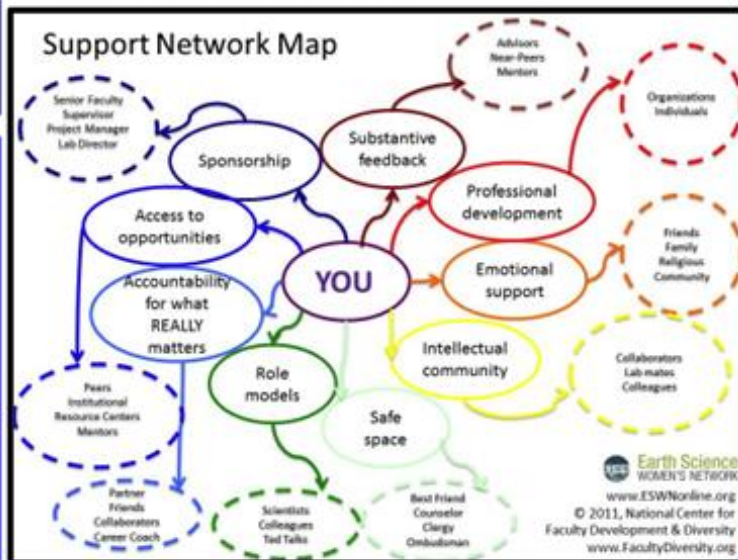
- making sure your network (people and organizations) lets you know about upcoming opportunities
- workshops
- summer schools
- field opportunities
- grant calls
- job openings
- speaking opportunities
- media contacts
- research collaborations
- awards

Accountability

Someone that will check in to make sure you are making progress with a given task

"Taking ownership of your own mentoring: Lessons learned from participating in the Earth Science Women's Network" M.S. Glessmer, A. Adams, M.G. Hastings and R.T. Barnes (2015)

How do each of these groups help me succeed?



Substantive feedback

- "classic" mentoring
- which journal to submit to?
- How to navigate specific conflicts at your institution?
- Are you making good progress for your career stage?

Professional development

- Inspiration to improve yourself by gaining skills
- time-management
- conflict resolution
- public speaking training
- personnel management

Emotional support

- someone that you feel comfortable sharing your emotions with
- helps you deal with stress
- believes in you

Role models

behavior we want to emulate in different aspects of our lives:

- Work-life balance
- Work ethics
- Productivity
- Career Choices
- Skill Set

Safe space

- people you trust who will let you vent without judgment or criticism
- blow off steam, express your frustration
- Help find a way to deal with the issue in a calm, composed, and unemotional way.
- May mediate on your behalf

Intellectual community

- bouncing ideas off of
- getting feedback at each stage of your work, from an initial idea until the finished product.
- people who you can share ideas with at all stages knowing that you will get honest feedback without having to fear that you will be laughed at or that they will steal your ideas