Webinar
National Association of Marine Laboratories (NAML)

“Recruiting, Supporting, and Retaining Minorities in STEM”

• Sponsored by the NAML Education Committee
• February 19, 2021
• Speaker: Aly Busse, Mote Marine Laboratory

• Link to recording
Mote Research Internship Experience

MarSci-LACE focuses on improving the experiences of underrepresented minorities.
The Need

31% of US Pop. Underrepresented Minorities (URM)
- African American or Black
- Latinx/Hispanic
- American Indians
- Alaska Natives
- Native Hawaiian
- Pacific Islander

20% of STEM degrees conferred to URM students

12% of Marine STEM degrees conferred to URM students

Source: National Center of Education Statistics 2017-2018
Funding

LSAMP
Louis Stokes Alliance for Minority Participation

NSF INCLUDES
Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science

MarSci-LACE
Marine Science Laboratory Alliance Center of Excellence
Louis Stokes Alliance for Minority Participation (LSAMP)

- Established in 1991
- Aims to increase minority participation in STEM fields
- Multi-level academic program
- Alliance-based program
  - 121 active awards nationwide
  - 7 Centers of Excellence for Broadening Participation

Hon. Louis Stokes
LSAMP Centers of Excellence broadly disseminate successful practices to ensure that students underrepresented in STEM can compete in today's job market.

1. Fisk-Vanderbilt Center of Excellence
2. Florida-Caribbean Center of Excellence (FL-C LSRCE)
3. Louis Stokes Midwest Regional Center of Excellence (LSMRCE)
4. Marine Science Laboratory Alliance Center of Excellence (MarSci-LACE)
5. Louis Stokes Center for Promotion of Academic Careers (LS-PAC)
6. NSF International Center of Excellence (NICE)
7. Southeastern Coalition for Engagement and Exchange in Nanotechnology Education (SCENE)
MarSci-LACE Grant

3 year grant for $1.5M

Lead Institution: Mote Marine Laboratory

University Partners: College of the Florida Keys, State College of Florida Manatee-Sarasota

Independent Marine Research Institution Partners: Smithsonian, Perry Institute for Marine Science
MarSci-LACE Grant

- Mote is the first non-academic LSAMP lead institution
- Only Center of Excellence award in 2019
- First marine science focused LSAMP program
- Includes support for 12-20 local interns yearly
- Building upon robust college intern program
Mote Research Internship Experience

200+ Research Interns Annually

Mote Internships offer hands-on experiences to college students in Marine science fields. Students have the opportunity to work with Mote scientists on active research projects.

NSF REU
Mote REU
MarSci LACE
College Intern

REU = Research Experience Undergraduates
Our Team

Lead PI – Dr. Michael P. Crosby
President and CEO, MML

Co-PI/Project Director
Aly Busse, AVP, MML

Dr. Ashanti Johnson
Former LSAMP PI/Director

Dr. Todd Fritch
Executive VP and Provost, SCF

Dr. Jonathan Gueverra
President and CEO, CFK

Jasmin Graham
Program Coordinator

Rachel Buissereth
Information & Data Coordinator

Gina Hodsdon
Student Engagement Manager
The Big Picture

- URM in Marine STEM
- Collect data around URMs and IMRIs
- Relationships between LSAMP institutions and IMRIs
- URMs and REUs at IMRIs

URM = Under-Represented Minority students
IMRI = Independent Marine Research Institutions
REU = Research Experiences for Undergraduates

MarSci-LACE
Marine Science Laboratory Alliance Center of Excellence
Our Methods

The program structure creates an iterative feedback-improvement cycle.

MarSci-LACE
Marine Science Laboratory Alliance Center of Excellence
Building an Internship Experience

- Guidance from a Mentor
- Hands-on Science Experience
- Professional and Personal Intern Support
Intern Alliance provides the personal and professional support which interns need to feel comfortable during the internship.

**Preparation for the Internship**
- Building a Research Outline
- Scientific Reading Tutorial
- Excel Training

**Support During the Internship**
- Science Communication
- Intern Luncheons
- Frequent Check-Ins

**Preparation for Next Steps**
- Networking
- Career/Graduate Panels
- Resume/CV Prep
- Interview Prep
Lessons Learned

- More structured approach
  - Individual Development Plan
  - Intern Resource Guide
  - Set check-ins
- Building the resource hub
- Flexibility
- Financial support
- New recruitment tools
Mentor Development

- Guidance from a Mentor
- Hands-on Science Experience
- Professional and Personal Intern Support
Most research program directors have never attended a formal teaching or mentoring training.

The Entering Mentoring Curriculum provides a framework for mentors to set goals and build relationships with mentees.
Allyship is defined as using privilege in a situation to support or amplify a person from a marginalized community. **Allyship workshops help create a supportive culture for MarSci-LACE students at marine science institutions.**

- Recognizing Privilege
- Micro-Allyship
- Being an active bystander
- Bias interrupting
Lessons Learned

- Developing explicit mentor protocols
  - Mentor-Intern Agreement
  - Mentor Briefing
  - Mentor-Intern Check-Ins
- Increasing workshop accessibility (Virtual vs Hybrid)
- Creating mentor buy-in
- Changing the culture around internships
MarSci-LACE Data Collection

Interns
- Pre Internship Survey
- Post Internship Survey
- Exit Interviews

Mentors
- Workshop Surveys
- Post Internship Survey
- Group Debrief
"I hope to **build a strong foundation of the fundamentals of research** that I carry with me to graduate school. I hope to use the current research I am working on now to allow me to **be successful when applying to graduate school.**"

"I hope to be able to **apply what I learn here to other science settings.** Not only how to use equipment or do different techniques, but **how to work and communicate with others.**"

"I hope to **learn as much as I can** and to be able to **feel more comfortable in a marine science setting.**"

Pre Internship Survey
100% of MarSci-LACE Interns

felt **comfortable** at Mote.

felt **accepted** at Mote.

felt **supported** by their Mentor.

had a **positive experience overall**.

would describe their research experience as **transformative**.

Post Internship Survey
Science identity is described as the overlap between a person’s image of themselves and their image of a science person.

In Fall 2020, MarSci-LACE interns science identity increased over the course of the internship period.
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In Fall 2020, MarSciLACE interns *science identity increased* over the course of the internship period.
"100 percent above and beyond my expectations. I was hands-on and learning every second I was in the lab."

"This has been one of the most transformative learning experiences I have ever encountered. Being a Freshman in college, this internship has allowed me to jumpstart my career in research by letting me open my first study."

"It gave me a real idea of what science looks like and now I want to continue in this field."

Post Internship Survey
An Intern's Journey

Before the Internship
"I would say growing up in like a black family, I don't think they really see science, as much of a career...I really didn't know what else there was except for computer science, having, you know, taking computer courses..."

Start of Summer 2020
"So I guess when I first got here...I was really grateful that I got in, but I was kind of discouraged a little bit because I knew nothing about science and everyone around me in my program, you know, they knew a lot about science because they had worked in it before"

End of Summer 2020
"I really liked it. And, you know, I got a grip on what's done in a lab and a phytoplankton ecology lab. And I really liked it. I'm here again. I got offered another internship."

Fall 2020
"I'm really proud of myself, as to learning new things...learning how to take care and grow cultures, learning how to do cell counts...learning how to work a spectrometer, all these different things."

January 2021 - Offered a Staff Position as a Lab Technician
Increasing Intern Diversity

Percentage of Underrepresented Minority REU Interns Applied and Accepted

- Accepted
- Applied
- Mote Target
- NSF Target

Year: 2017, 2018, 2019, 2020
40+
Staff Trained in Mentorship and Ally Skills

All participants would recommend the workshop to other Staff and mentors at Mote due to the discussions, information, and resources.
The majority of participants felt more confident in mentoring skills after the workshop

Building Intern Confidence
Enhancing Intern Skills
Helping Interns Meet Goals
Aligning Expectations with Interns
Active Listening
Accommodating Communication Styles

“I loved hearing real life examples and how other mentors handled the situations. I would also be interested in hearing if other mentors have larger or smaller teams and how that impacts HOW they mentor.”
What’s Next

- Complete data collection and statistical analysis
- Expanded data collection
- Validate survey instruments and interview protocols
- Share results internally and externally existing and future networks
Visit marscilace.org to learn more!
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