

THE LIVING SEA

The e-newsletter of the LMRCSC



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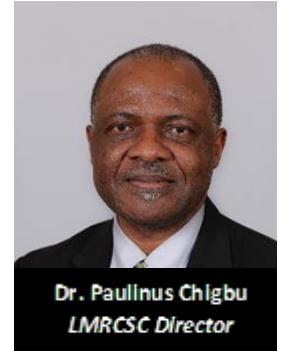
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TO THE LMRCSC COMMUNITY

For over two decades, the NOAA LMRCSC has dedicated itself to educating students from diverse backgrounds and underrepresented communities and preparing them for successful careers in marine and fisheries science. The key to achieving this goal has always been fostering key relationships. Although the foundation of the Center is science, an equally contributing factor to our success is networking. From maintaining an open dialogue between our seven partner institutions, to co-creating successful programs with NOAA scientists and employees, the NOAA LMRCSC is built upon open communication and effective partnerships.



Dr. Paulinus Chigbu
LMRCSC Director

In this edition of *The Living Sea*, I invite you to take a look at how the Center manages successful collaborations, both within the organization and with outside partners, as a means of ensuring that our students gain a well rounded and robust education. It is our hope to position our students that they may have the most advantageous careers. For when our students succeed is when we all succeed.

I thank you all for your continued support. Please stay safe and enjoy the rest of your summer.

Until next time, as always, enjoy *The Living Sea!*

Sincerely,

Paulinus Chigbu, Ph.D.

NOAA EPP LMRCSC SPRING GRADUATES

After years of intense lectures, numerous presentations, and extensive research, our students received their ultimate reward and earned their degrees. Read below to see the most recent graduates of the NOAA LMRCSC.



William Burns graduated with his Bachelor of Science degree in Marine Science from Savannah State University in May 2021.

William's plans are to pursue his graduate degree at Savannah State University.



DaQuan Davis graduated with a bachelor's degree from the University of Maryland Eastern Shore in May 2021. In the summer of 2018, DaQuan participated in the university's summer 2018 Research Experience Undergraduate (REU) program, where he worked under the advisement of Dr. Ligia DaSilva. His REU research project focused on how physical parameters affect the growth of heterotrophic bacteria in the Maryland Coastal Bays.

Now that he has earned his bachelor's degree in environmental science, DaQuan plans to pursue his master's degree and subsequently start a career with NOAA as a research marine biologist. He hopes to dedicate his career to helping animals and ensuring the safety of the environment.



Joe Day, Jr. earned his bachelor's degree in marine science in May 2021 from Savannah State University. Under the guidance of Dr. Sue Ebanks and graduate student, Savannah M. Geiger, Joe's Senior Research project was titled, "Analyzing microplastic abundance in common fish species along Coastal Savannah, GA, USA." The project focused on comparing the microplastic abundance across different foraging behaviors observed in fish, such as filter feeders and benthic deposit feeders.

The recent graduate will pursue his graduate degree at his alma mater beginning this Fall.



Sierra Hildebrandt graduated with her M.S. in Biology from Hampton University in spring 2021. Under the advisement of Dr. Deidre Gibson, Sierra's thesis entitled, "Investigating the Impacts of Oyster-Conditioned-Water on *Crassostrea virginica* Larval Direct Setting Efficacy," focused on the restoration of the depleted oyster population in and around the Chesapeake Bay.

Sierra's current endeavors include pursuing her doctorate at Old Dominion University in Norfolk, Virginia.



Josette McLean graduated with her master's degree in Biology with a concentration in Environmental Science from Hampton University. The May 2021 graduate's research focused on assessing the feeding ecology and prey preference of Pacific lamprey using molecular techniques. The purpose of her research was to better understand how Pacific lamprey holistically impact marine ecosystems and commercial fisheries.

Ms. McLean is now pursuing her Ph.D. at Duke University located in Durham, North Carolina.



Keala Pelakai graduated with her master's degree in Fisheries at Oregon State University in May 2021. Under the mentorship of Dr. Jessica Miller, Keala's research focused on the Pacific Lamprey natal origins and aging in the Columbia River basin.

Keala is now working at Idaho Fish and Game.



Amani Tolin is a May 2021 graduate of Hampton University. Earning his bachelor's in marine and environmental science, Amani's research focused on the assessment of the best potential sites for restoring an oyster reef in the Hampton River by analyzing the roles of abiotic factors (salinity and temperature), and biotic factors (predation and competition). His research was beneficial in helping to preserve the river ecosystem that incurred damage due to human activity and pollution.

Mr. Tolin was admitted to the master's program at the University of Michigan.

NERTO INTERNSHIPS

It is a requirement that all LMRCSC graduate students participate in the NOAA Educational Partnership Program's (EPP) Experiential Research and Training Opportunity (NERTO) program. For 12 weeks, all graduate students intern at a NOAA lab/facility where students, under the supervision of a NOAA mentor scientist, conduct research, acquire new knowledge and skills, and are introduced to the structure and function of NOAA operations.

Below, you will find a list of LMRCSC graduate students who recently completed or are currently completing their NERTO.

**Arona Bender, NOAA EPP LMRCSC Graduate Fellow****Institution:** Hampton University**Major:** Marine and Environmental Science**NOAA Internship Mentor:** Dr. Douglas Krause, NOAA SWFSC, La Jolla, CA**NERTO Title:** Initial analysis of the foraging tactics and social behavior of Antarctic fur seals (*Arctocephalus gazella*) from animal-borne HD video footage**Leanne Cohn, NOAA EPP LMRCSC Graduate Fellow****Institution:** Oregon State University**Major:** Marine Resource Management**NOAA Internship Mentor:** Dr. Blake Feist, NOAA NWFSC, Seattle, WA**NERTO Title:** Mapping the footprint of rockfish conservation area (RCA) closures on the US West Coast**Nicholas Coleman, NOAA EPP LMRCSC Graduate Fellow****Institution:** University of Maryland Center for Environmental Science**Major:** Marine, Estuarine & Environmental Science**NOAA Internship Mentor:** Dr. Steven Lindley, NOAA SWFSC, Santa Cruz, CA**NERTO Title:** Sonar censusing and habitat use by spawning run Green Sturgeon, *Acipenser medirostris*



Shakira Goffe, NOAA EPP LMRCSC Graduate Fellow

Institution: University of Maryland Eastern Shore

Major: Marine, Estuarine & Environmental Science

NOAA Mentor: Dr. Larry Alade, NOAA NEFSC, Woods Hole, MA

NERTO Title: Analyses and comparison of American Plaice maturity parameters in the Georges Bank and Gulf of Maine Regions



Ashley Silver, NOAA EPP LMRCSC Graduate Fellow

Institution: University of Maryland Eastern Shore

Major: Marine, Estuarine & Environmental Science

NOAA Mentor: Dr. Larry Alade, NOAA NEFSC, Woods Hole, MA

NERTO Title: Analyses and comparison of American Plaice growth in the Georges Bank and Gulf of Maine Regions



Jaelyn Leslie, NOAA EPP LMRCSC Graduate Fellow

Institution: Hampton University

Major: Marine Science

NOAA Mentor: Dr. Douglas Krause, NOAA SWFSC, La Jolla, CA

NERTO Title: Assessing the mass and body condition of leopard and fur seals using areal images

EDUCATIONAL FORUMS

The NOAA LMRCSC is a big proponent of partnerships and networking. Recently our Center collaborated with other agencies and organizations and presented to new audiences the various research conducted by LMRCSC students and faculty.

10th Biennial Education and Science Forum



Florida A&M University President, Dr. Larry Robinson

This past Spring, the NOAA Educational Partnership Program with Minority-Serving Institutions held its 10th Biennial Education and Science Forum. The two-day virtual conference, hosted by the NOAA Center for Coastal and Marine Ecosystems at Florida A&M University, provided an opportunity for NOAA's four cooperative science centers to showcase how they are producing exemplary researchers, are making significant contributions in the science, technology, engineering and math fields, as well as how the centers engage in collaborative research between faculty, students and scientists at NOAA.

The theme for this year's event was, "Two decades of excellence nurturing future leaders in STEM." The educational forum was successful in showcasing the over twenty years of work conducted by the NOAA Educational Partnership Program in collaboration with its four cooperative science centers, and their success in producing over two thousand graduates and leaders in the STEM fields.

The first day's opening session consisted of Florida A&M University president, Dr. Larry Robinson providing opening remarks. The session also involved keynote speakers from NOAA who elaborated on the mission of the NOAA Educational Partnership program and highlighted the many opportunities offered to students, including careers in public policy and budget management. In addition, the Vice President of Apple's Environment, Policy and Social Initiatives division, Ms. Lisa Jackson, had an open dialogue with Dr. Robinson. Having a background in chemical engineering, Ms. Jackson provided insight into her background and what is on the horizon for the future of STEM.

The Biennial Forum not only showcased NOAA scientists and seasoned professionals, but many LMRCSC students and faculty participated in sessions, as well. NOAA EPP LMRCSC master's fellow, Juan Cervera of the University of Miami RSMAS gave a talk about his creation of the essential fishery habitat mapper.

Hampton University student, Sierra Hildebrandt also presented her research, “Investigating the Impacts of Oyster-Conditioned-Water on *Crassostrea virginica* Larval Direct Setting Efficiency.” NOAA scientist and LMRCSC faculty member, Dr. Dionne Hoskins-Brown also moderated a session during which she informed students of the best ways to seek out and establish a mentor relationship with scientists at the National Oceanic and Atmospheric Administration.

In addition to current LMRCSC students maintaining a presence at the forum, a few LMRCSC alumni also presented at the conference. Marine Microbiologist, Dr. Jeanette Davis and Environmental Scientist, Dr. Lonnie Gonsalves gave talks on omics technology and ecoforecasting, respectively. The Center alumni spoke about the work they do, as well as the path they took to get to where they are in their careers.

Since the program’s inception, 35% of African American and 39% of Latinx doctoral graduates in the marine science field have been supported by the NOAA LMRCSC. The forum displayed that the educational partnership program has not only been successful in graduating numerous students in the STEM fields, but it also has been a primary factor in ensuring that they have flourishing careers.

Students participate in the first virtual LMRCSC Cohort Experience Workshop



Providing NOAA LMRCSC students with a stellar education and properly preparing them for the workforce upon graduation is the ultimate goal of the Center. As a means of meeting this goal, LMRCSC administrators created The Cohort Experience Workshop. The Cohort Experience Workshop is a Center initiative that ensures all LMRCSC students are well equipped with the necessary tools to not just work, but thrive in their future careers.

The weeklong event—typically held on the campus of the University of Maryland Eastern Shore—this year was implemented in a virtual format, due to the social distancing parameters surrounding the COVID-19 pandemic.

From March to May, graduate students from all seven of the Center's universities, (also known as partner institutions), participated in a mandatory online learning forum that educated them on not only marine and fisheries science subjects, but also provided professional development courses to ensure that students will be successful in both the office and field setting. Center participants followed a mostly asynchronous curriculum consisting of live sessions, presentations, independent study assignments and group collaborations, all of which were rooted in the core competencies of the LMRCSC.

The usual in-person workshop was converted to an online format through the successful efforts of Dr. Victoria Young— Education Expert for the NOAA LMRCSC. Based at Savannah State University in Savannah, GA., Dr. Young's primary focus is spearheading many educational workshops and seminars for the Center and ensuring that students meet educational requirements. Although this year's format was unique and unprecedented, it still was widely successful. Students participated in grant writing workshops, received lectures on stock assessment, fishery management and integration of social science in their research. The 2021 Cohort Experience Workshop also enabled participants to connect with students and professionals from all over the country.

This year, students had the unique opportunity to participate in scientific conversations with NOAA partners and university faculty. The Biennial Science Forum and the annual LMRCSC Science meeting, overlapped with the workshop, allowing students to fraternize and learn from a range of scientists, as well as professionals from the three other NOAA EPP cooperative science centers. One of the benefits of the online workshop was that it provided students with more opportunities to participate in meetings and virtual sessions. Students were able to attend professional meetings and debrief with each other about what was discussed in the professional settings. Furthermore, participants had the opportunity to learn in a different setting and get used to adapting to learning in a new environment. Throughout one's career, change will be inevitable, and in order to thrive it is key that one adapts. The online workshop provided students an opportunity to learn this valuable lesson early and build great connections in the process.

LMRCSC partners with NOAA in annual science meeting

Why are we here?

- To improve networking and communications,
- explore new and foster existing collaborations,
- promote diversity and inclusion,
- and pave pathways for attracting potential LMRCSC talent to NEFSC.

This year, the NOAA LMRCSC partnered with the NOAA Northeast Fisheries Science Center and hosted the Leadership Initiative for Networking and Collaboration (LINC) Conference. Although the two-day virtual conference was slightly different from the Center's previous science meetings, the mission of the initiative was not only met, but also magnified in that an even larger platform was created to discuss the science and

the initiatives of the Center.

Talent, research and innovation were on full display at the virtual event, held in early April. NOAA Northeast Fisheries Science Center director, Dr. John Hare provided a detailed overview of NOAA Fisheries and its responsibility of the stewardship of the nation's ocean resources and their habitat.

"Our mission is really to conserve and manage coastal and marine ecosystems," stated Dr. Hare. "It's all channeled to conserving and managing resources."

Louisa Koch, who serves as the NOAA Director of Education, was one of many who emphasized the importance of strong collaborations between the LMRCSC and NOAA. Ms. Koch explained the importance of diversity and how the Center, as well as NOAA's other science centers, are successful in training diverse scientists for a career in fisheries. It was also noted that NOAA hires many graduates from the NOAA science centers, including alumni from the LMRCSC.

LMRCSC administrators, faculty and students were strongly represented at the seminar also. Center faculty members, Dr. Margaret Sexton and Dr. Bradley Stevens collaborated on a presentation given to the diverse group. Their talk provided an in-depth look into the organizational structure of the Center and also provided context to the mission of the LMRCSC. The importance of promoting communication and networking between NOAA and the LMRCSC, in addition to providing research opportunities to underrepresented students and promoting a diverse workforce in marine science, were spoken about extensively by Center faculty and others throughout the conference.

Students and faculty from the Center's partner institutions also presented at the forum. Dr. Elizabeth Babcock, located at the University of Miami RSMAS, spoke on stock assessment support and information, while Dr. Jessica Miller of Oregon State University presented the climate related research that is happening at the NOAA LMRCSC.

Dr. Miller highlighted the work of LMRCSC graduate student, Victoria Moreno. Victoria, who is pursuing her master's degree, is studying the adaptation of the Oregon Dungeness Crab to ocean acidification. The Dungeness Crab is the most profitable fishery in the state of Oregon and Ms. Moreno is investigating how members of the industry perceive their adaptive capacity to ocean acidification.

One of the many driving themes throughout the conference was the benefit of collaborations between NOAA and its educational partners. This focus was displayed when the Center featured the NOAA Experiential Research and Training Opportunities (also known as NERTO).

The NERTO provides students in the cooperative science center with an internship at a NOAA facility where they can gain hands on experience in marine science. The professional opportunity involves pairing the student with a NOAA mentor at their assigned facility where they can benefit from the tutelage of a seasoned individual who works in marine science, while NOAA, in turn, benefits from the research conducted by the students.

The NERTO presentation, hosted by Dr. Deidre Gibson and Dr. Stacy Smith, spoke of the successes and benefits of the internship program, in addition to providing steps students could take in finding a NOAA mentor of their own. Alumni currently working at NOAA, such as Larry Alade, Ph.D. and Audy Peoples, talked in depth about their experiences as NOAA LMRCSC students and how their NOAA internship opportunities benefited them. They, along with many other students, spoke on how the LMRCSC and its internships put them on the path to meet their career goals.

The LINC conference collaboration provided a great opportunity for the NOAA LMRCSC and the NOAA Northeast Fisheries Science Center to network and exchange research successes and findings. The numerous presentations throughout the two-day conference allowed for both facilities to broaden their platforms and showcase the great work that they do daily. Students were able to meet potential mentors and established scientists were able to gain a glimpse into the work and researchers of the future generations. With the strong need of diversity in the STEM fields, it was established that partnerships would be beneficial and are highly desired between the two organizations in the future. The LINC conference collaboration may be the first of its kind being virtual, but it is certainly one of many more collaborations to come.

Benjamin Frey
MS, UMCES

Validation of Monkfish Age and Growth Using Microconstituent Analysis of Hardparts

- With David Secor, Rose Jagus, UMCES, Anne Richards, Eric Robillard, NEFSC
- Seasonal cycles of calcium, phosphorous, and strontium from samples taken from the 2015 year class to test whether optical zonation in first dorsal fin spine, vertebrae, and otoliths conform to expected seasonal



Chigbu appointed to Maryland Commission on Climate Change

By Gail Stephens, agriculture communications and media associate, UMES

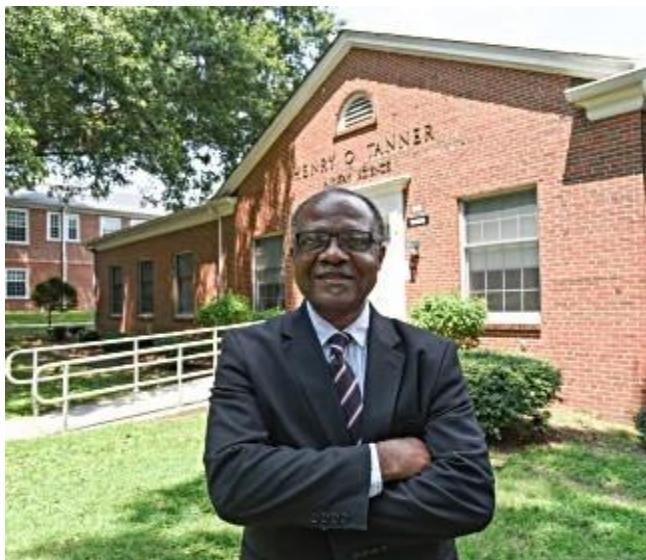


Photo credit: Todd Dudek

Ben Grumbles, Maryland's Secretary of the Environment, recently announced that the University of Maryland Eastern Shore's director of the NOAA Living Marine Resources Cooperative Science Center, Dr. Paulinus Chigbu, has been appointed to the Maryland Commission on Climate Change. Chigbu will serve on one of its working groups, the Science and Technology Working Group.

In the appointment letter, Grumbles wrote that Chigbu's "long history of running the LMRCSC program, impressive education and experiences in fisheries and zooplankton ecology and climatic factors in water quality" make him instrumental to the commission as they "analyze possible solutions to complicated issues surrounding climate change."

Chigbu, a University System of Maryland Wilson H. Elkins Professor of Marine Science at UMES, will provide the chair of the working group, Dr. Peter Goodwin, and members with the science to base their recommendation on each year.

"This appointment is true testament of the value Dr. Chigbu brings to the state of Maryland. I know he will do a wonderful job to address this very important topic," said Dr. Moses T. Kairo, dean, UMES' School of Agricultural and Natural Sciences.

In addition to his 15-year post as director of the NOAA LMRCSC, Chigbu is also director of the National Science Foundation's CREST Center for the Integrated Study of Coastal Ecosystem Processes and Dynamics in the Mid-Atlantic Region, the Research Experience for Undergraduates in Marine Science and the Geoscience Bridge Program. He also is the associate dean for research, development and graduate education at UMES.

"The mission of the working group is to provide the Maryland Climate Change Commission current information on the science of climate change, which is important for resilience planning," Chigbu said. "I am pleased and honored to be appointed to join the group and look forward to contributing to the success of that endeavor."

Chigbu holds a doctorate in fisheries from the University of Washington School of Fisheries in Seattle and master's and bachelor's degrees in zoology (hydrobiology) from the University of Benin, Nigeria.



NOAA LIVING MARINE RESOURCES COOPERATIVE SCIENCE CENTER IS SUPPORTED BY THE NOAA OFFICE OF EDUCATION, EDUCATIONAL PARTNERSHIP PROGRAM,
AWARD #: NA16SEC481007 TO THE UNIVERSITY OF MARYLAND EASTERN SHORE

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