# AOML KEYNOTES

NOAA's Atlantic Oceanographic and Meteorological Laboratory

October 2024 - March 2025 Publication

LAB REVIEW

Congratulations and a sincere thank you to AOML scientists, leadership, and staff for a successful lab review. Every five years, NOAA's Office of Oceanic and Atmospheric Research (OAR) conducts independent peer reviews of each of its laboratories and programs to: (1) evaluate the quality, relevance, and performance of the research conducted and sponsored by OAR laboratories and programs; (2) develop and implement recommendations to improve the quality, relevance and performance of OAR research; (3) strategically position the laboratory or program in its planning for future research and development.
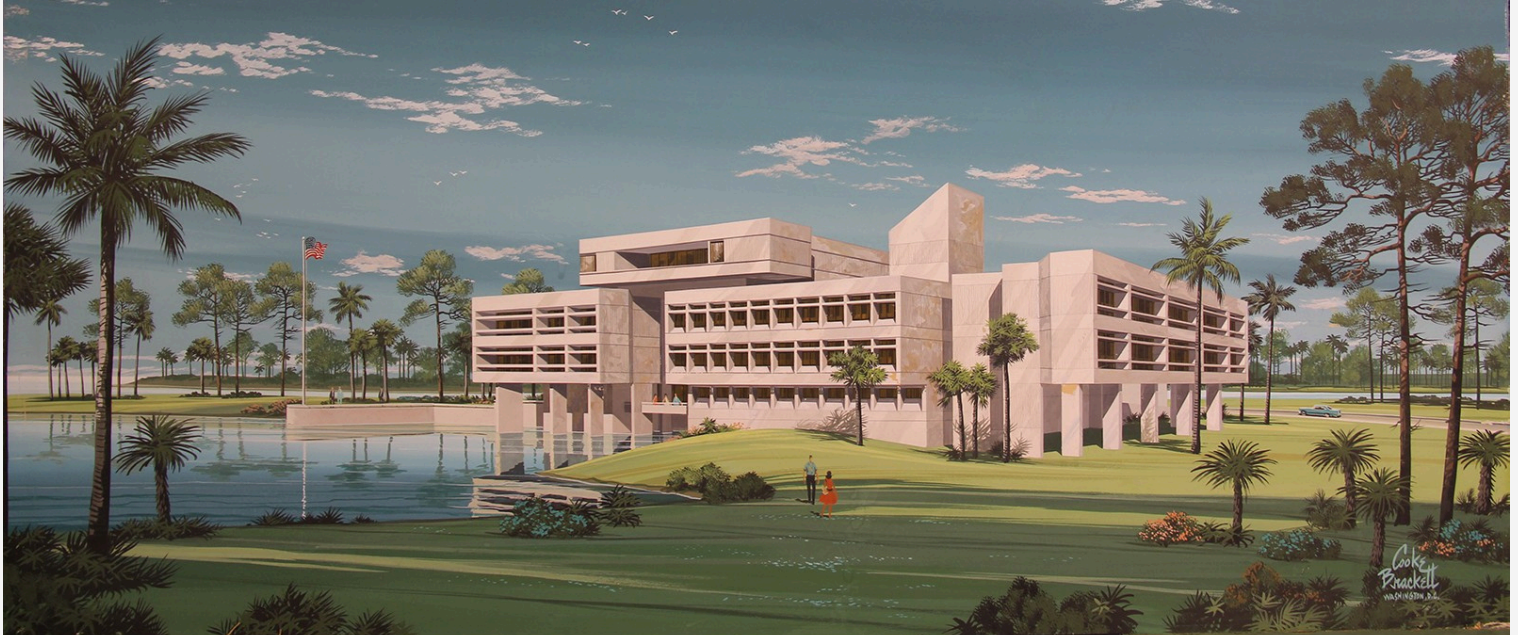

Held February 25-27, AOML's lab review featured panelists Frank Muller-Karger, PhD, Avichal Mehra, PhD, Isabela Le Bras, PhD, Gokhan Danabasoglu, PhD, Scott Braun, PhD, and Heather Benway, PhD, who intently listened to scientific presentations, enjoyed discussions with early career professionals, and joined research expeditions through virtual reality, ultimately making recommendations that will help act as a road map for AOML research in the coming years. AOML has received overwhelmingly positive initial feedback from panelists. Some of the following quotes pulled from the draft lab review report reflect that sentiment:

"THE BREADTH AND QUALITY OF RESEARCH PRESENTED BY AOML STAFF WAS IMPRESSIVE. AOML IS RENOWNED FOR THEIR OBSERVATIONAL PRODUCTS AND IS ONE OF JUST VERY FEW CENTERS IN THE COUNTRY (AND IN FACT IN THE WORLD) WITH THE CAPACITY TO CARRY OUT OCEAN OBSERVATIONS AT THE SCALE AND HIGH STANDARD THAT THEY DO AND THIS SHOULD CONTINUE TO BE A PRIORITY."

"INTERVIEWS WITH STAKEHOLDERS DURING THE LAB REVIEW REVEALED THAT AOML HAS DEVELOPED STRONG TIES TO THEIR STAKEHOLDERS AND HAVE BEEN VERY EFFECTIVE AT LEVERAGING PARTNERSHIPS WITH ACADEMIA AND OTHER SECTORS TO AUGMENT INVESTMENT IN ACTIVITIES AND INFRASTRUCTURE THAT SUPPORT NOAA'S MISSION."

To see the full agenda, panelist bios, and supporting materials,
visit AOML's Laboratory Review 2025 web page.

NEWS
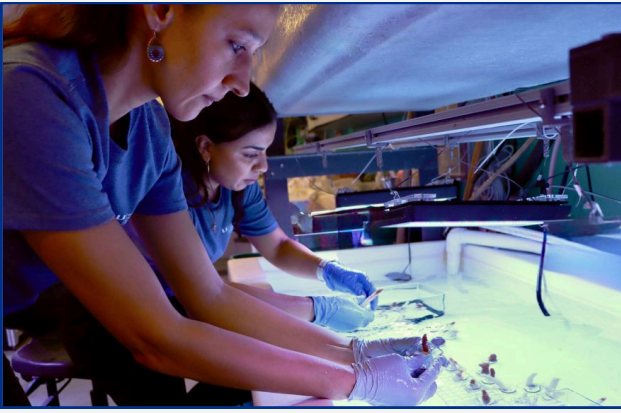
NEW STUDY DEMONSTRATES THE IMPACTS OF MULTIPLE STRESSORS ON REEF-BUILDING CORALS

Scientists at AOML and CIMAS demonstrated how some genotypes of the reef-building coral Acropora cervicornis (Staghorn Coral), listed on the Endangered Species Act, proved resilient when exposed to high nutrient levels or disease, but not when the two stressors were combined. [Continue Reading]

NEW INSIGHTS INTO DEEP OCEAN COOLING IN THE ATLANTIC

New study reveals long-term cooling and freshening of the deep Subtropical North Atlantic Ocean, with hints of major shifts to come over next decade. Scientists analyzed nearly four decades of ocean observations along the Abaco 26.5°N hydrographic line and found evidence of significant cooling and freshening of the deep ocean at 26.5°N. But will it continue? [Continue Reading]


THE GROWING IMPACT OF ENSO ON U.S. EXTREME DROUGHT AND FLOOD EVENTS

Scientists showed an increase in future winter extreme events with droughts becoming more common in the Southwest and floods becoming more common in the Southeast and Northeast. These changes are fueled by increasing El Niño-Southern Oscillation (ENSO) impact and regional rainfall trends. [Continue Reading]

CORAL RESTORATION: USING 'OMICS TO STRATEGIZE AND MANAGE RESTORATION EFFORTS

Applying 'Omics techniques to investigate how habitat and coral microbiomes influence ongoing restoration efforts, new research indicates Acropora palmata (Elkhorn coral) outplanted in shallow, low-nutrient waters and high velocity currents have a higher probability of survivorship. [Continue reading]
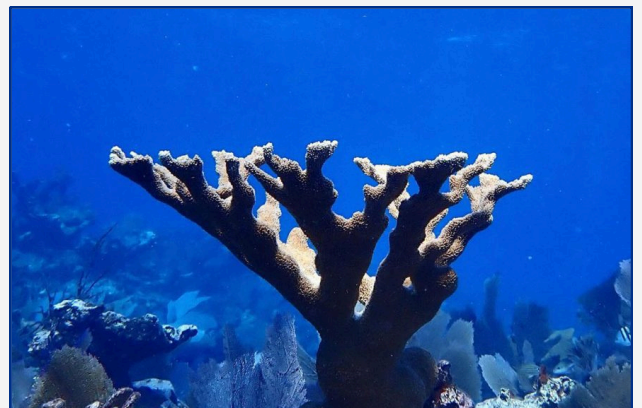
EARLY-CAREER METEOROLOGIST, JASON DUNION, IS A RECIPIENT OF THE PRESTIGIOUS PECASE AWARD

Jason Dunion, Ph.D., CIMAS meteorologist, has been awarded the Presidential Early Career Award for Scientists and Engineers (PECASE) "for being an exceptional and innovative atmospheric science researcher, collaborator, communicator, and student mentor…" [Continue reading]

ADVANCING OUR UNDERSTANDING OF THE ATLANTIC MERIDIONAL OVERTURNING CIRCULATION (AMOC)

Extensive weakening of the Atlantic Meridional Overturning Circulation (AMOC) occurred in the 2000s, but has paused since the early 2010s due to a tug-of-war between the natural and anthropogenic signals, stressing the need for continued observations to improve models. [Continue reading]
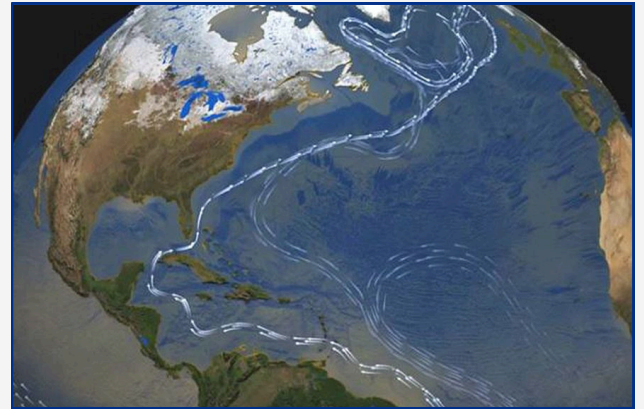

NEW NOAA SYSTEM USHERS IN NEXT GENERATION OF HURRICANE MODELING, FORECASTING

After five years of development by AOML, NWS, and CIMAS, the new Hurricane Analysis and Forecast System (HAFS) became operational in 2023 and updated in 2024. See how it performed during its first two seasons as we prepare for the 2025 season. [Continue reading]

SHIPS OF OPPORTUNITY: CROSSING THE ARCTIC TO INVESTIGATE THE OCEAN'S UPTAKE OF CARBON AND INCREASING OCEAN ACIDIFICATION

CIMAS scientist Leticia Barbero voyaged through the Arctic, collecting data to monitor the global ocean's uptake of carbon – and ultimately rising acidification in one of the world's most remote regions, as part of the Ships of Opportunity Program. [Continue reading]
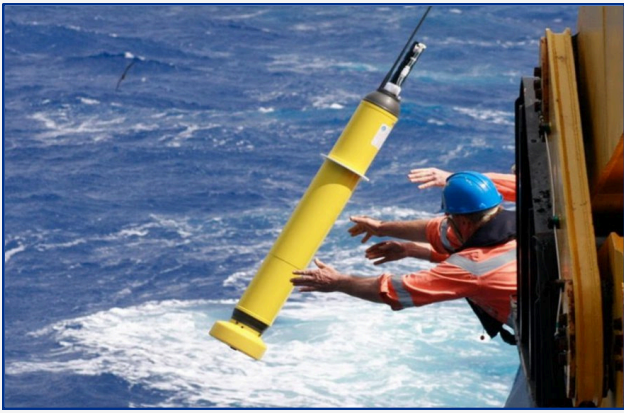
ARGO, THE 'CROWN JEWEL' OF OCEAN OBSERVING SYSTEMS, TURNS 25

NOAA celebrated 25 years since Argo floats began drifting with currents and diving for data. The array has helped scientists to better understand changes in the ocean, improve weather forecasts and ultimately help society prepare for environmental change. The Argo Program delivered 3 million temperature and salinity profiles and is used in nearly 600 NOAA products. [Continue reading]

INNOVATION, INSIGHT AND IMPACT: GROUNDBREAKING RESEARCH THROUGH THE 2024 HURRICANE SEASON

During the active 2024 hurricane season, NOAA scientists set new records in tropical cyclone research that will improve forecasting accuracy, enhance our understanding of storm behavior, and strengthen preparedness efforts. Review our end of season recap. [Continue reading]
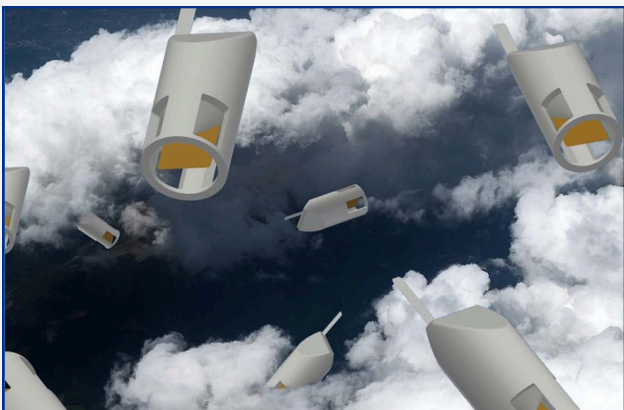

UNVEILING THE NEWEST HURRICANE RESEARCH INSTRUMENT: SKYFORA STREAMSONDES

NOAA aims to pioneer advancements that revolutionize hurricane research technology. One new instrument is the Skyfora StreamSonde, a lightweight sonde that was released alongside dropsondes, airborne expendable bathythermographs, and uncrewed aircraft systems to gather real-time data from inside the storm. [Continue reading]

BEAMS OF CHEECA: SHEDDING LIGHT ON THE RESILIENCE OF A FLORIDA KEYS INSHORE PATCH REEF

For eleven consecutive weeks, the AOML Coral Program laid anchor at Cheeca Rocks, a long-term monitoring site in the Florida Keys, to deploy and maintain a new instrument that simultaneously measures net community production and calcification. [Continue reading]
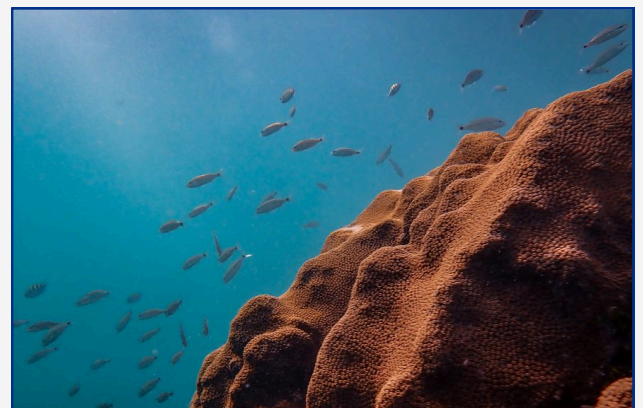
WELCOME ABOARD

Elizabeth Berg
Knauss Fellow

While based in Silver Spring, MD, Elizabeth joins AOML as a Knauss fellow helping Annette Hollingshead with transitions.

Manoj Kumar Reddy Gongati
CIMAS Research Associate II

Manoj joins AOML as a research associate working with the Global Drifter Program.

Robert Carroll
Research Associate

Robert serves as a research associate and web developer for the Integrated Ecosystem Assessment group.

Candice Hall
Research Oceanographer

Candice is the principal investigator of AOML's Argo effort, and leading the Argo Data Assembly Center (DAC) team.

Clement Coclet
NGI Research Scientist II

Clement is integrating oceanographic data to uncover microbial biodiversity patterns while improving bioinformatics workflows for efficient data analysis.

Gabriella Lirio
CIMAS Research Associate II

Gabriella joins OCED's Ocean Biogeochemistry Group, using microCT technology to assess changes in morphology of marine calcifiers.

Abdallah Daher
CIMAS Research Associate

The AOML US Argo DAC welcomes Abdallah who will develop software for data processing and quality control.

Genna Nordling
CIMAS Communications Intern

Genna joins the AOML science communications team to find creative ways to share hurricane research numerous audiences.

Alexandre (Alex) Durães
Parymon Corporation Budget Analyst

AOML is happy to be receiving budget and financial support from Alex through Parymon Corporation.

Caitlin Reisa
CIMAS Research Associate II

Caitlin joins the PhOD instrumentation group, providing scientific and technical support on long-term monitoring cruises.

Jason Fernandez
Trade Contractor

Jason brings expertise in skilled trades to support the maintenance and enhancement of our facilities.

Lorveena Renesca
Administrative Assistant

Lorveena joins AOML working as a receptionist and Administrative Assistant.

David Gordon
CIMAS Research Associate

David Gordon joins OCED as the Nutrient Analyst of the Ecosystem Assessment Lab.

De'Marcus Robinson
Postdoctoral Research Associate

De'Marcus joins OCED, working on the geochemistry and morphology of Red Snapper otiliths collected over time in the Gulf with advisor, Emily Osborne.

FAREWELL

Gail Derr - *Technical Editor*

After 40 years at AOML, Gail retired as AOML's technical editor, guiding scientists through the publication process, editing countless reports, creating the Keynotes newsletter, and supporting the communications and AOML leadership teams.

Joe Griffin - Computer Scientist

After 48 years of federal service, Joe Griffin retired as a computer scientist devoted to advancing hurricane knowledge. Joe participated in hurricane flights to ensure critical data was being collected, advanced computer systems, developed software code, and managed our legacy data sets.

Betty Huss - *IT Specialist*

After nearly 50 years of federal service, Betty retired from her role supporting scientists in the Ocean Chemistry and Ecosystems Division, including website design, data QA/QC and reduction, air sampling, documentation, and worked tirelessly behind the scenes to make sure many of our bluewater cruises were successful.

Rick Lumpkin, Ph.D. - *PhOD Director*

Rick Lumpkin retired after 20 years of federal service as a physical oceanographer. Rick served as the Principal Investigator of NOAA's Global Drifter Program, lead of the US delegation to the Data Buoy Cooperation Panel, chief scientist on numerous research cruises, and the Deputy Director and Director of the AOML Physical Oceanography Division.

Jia-Zhong Zhang, Ph.D. - *Oceanographer*

Jia-Zhong retired after 22 years as an Oceanographer in the Ocean Chemistry & Ecosystems Division, principal investigator of the nutrient program, and co-PI of the GO-SHIP repeat hydrography program.

FAREWELL

Poinsetta Byrd
- *Facilities Manager*

Alexis Hayhew
- *Administrative Assistant*

Erica Ombres, Ph.D.
- *Acting OCED Director*

Ricardo Campos, Ph.D.
- *CIMAS Assistant Scientist*

Jin-Sil Hong, Ph.D.
- *Postdoctoral Researcher*

Kayelyn Simmons, Ph.D.
- *Oceanographer*

Thank you to our students and interns

Allyson DeMerlis, Ph.D. - *Research Associate*

Dunnel Fennell - *CIMAS/MDC Intern*

Krithika Layagala - *Coral Program Intern*

Devon Ledbetter - *Communications Intern*

Hanna Odahara - *Knauss Fellow*

Sydney Shumacher - *Lapenta Intern*

Emilia Silverberg - *Coral Program Intern*

Ashley Stevens - *Coral Program Intern*

Lillian Zhou - *Lapenta Intern*

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