Since 1977, the Cooperative Institute for Marine and Atmospheric Studies (CIMAS) has been sponsored jointly by the University of Miami (UM) and the National Oceanic and Atmospheric Administration (NOAA), through NOAA’s Office of Oceanic and Atmospheric Research (OAR).

As one of 18 collaborative institutes throughout the United States, CIMAS conducts research, education, training and outreach aligned with NOAA’s mission, and facilitates the involvement of faculty, students and post-doctoral investigators in NOAA-funded research.

In 2010 CIMAS funding was renewed and the program was expanded to also include Florida Atlantic University, Florida International University, Florida State University, Nova Southeastern University, University of Puerto Rico, University of Florida, University of South Florida and University of the Virgin Islands.

CIMAS researchers collaborate closely with scientists co-located at NOAA’s Atlantic Oceanographic and Meteorological Laboratory and Southeast Fisheries Science Center on Virginia Key, and those at the National Hurricane Center.

**Research Themes:**

- Climate Research & Impacts
- Tropical Weather
- Sustained Ocean & Coastal Observations
- Ocean Modeling
- Ecosystem Modeling and Forecasting
- Ecosystem Management
- Protection & Restoration of Resources
Climate Research & Impacts
Research focused upon understanding oceanic and atmospheric processes associated with global and regional climate change on various temporal scales and the impacts of climate variability and change. Activities under this theme include research to determine effective regional adaptation strategies, and developing and studying new climate information products and tools appropriate for evolving user needs, particularly in the Southeast United States and the Caribbean.

Tropical Weather
Research focused upon the collection and analysis of observations of hurricanes and other tropical weather systems. Research activities include identifying and validating observational needs, developing instrumentation, obtaining observations, studying the optimum configurations for observation networks, modeling and data assimilation, expediting and facilitating the transition of research to operations, and developing analysis and forecasting applications for operations.

Ecosystem Modeling & Forecasting
Research focused upon improved forecasting of the structure and function of marine ecosystems including the provision of ecosystem services, particularly in the Southeast U.S. coastal ocean, the Caribbean Sea, and Gulf of Mexico Large Marine Ecosystems. These regions are the primary geographic focus of this and the following two research theme areas. Modeling and forecasting topics include: human health (e.g., beach closings, fish contaminants, and harmful algal blooms), fish recruitment and productivity, and protected species sustainability and recovery, all of which are deemed relevant to NOAA’s responsibilities with respect to the assessment and management of living marine resources and their habitats.

Sustained Ocean & Coastal Observations
Research focused on the collection and analysis of observations of the ocean and coastal environment important for understanding and monitoring on a range of timescales, particularly in the Gulf of Mexico, Caribbean and Atlantic. This includes the development and improvement of ocean and coastal observation platforms and instruments that biological, physical, and chemical parameters; studying the optimum configurations for observation networks; modeling, data assimilation, and diagnostic analysis of local, regional, and global data sets; and information product development.

Ocean Modeling
Research focused upon improved model representation of ocean processes and particularly the processes governing sea surface temperature, upper ocean heat content, and salinity variability including air-sea exchanges, heat-flux, lateral ocean advection, and entrainment at the base of the ocean mixed layer that play a significant role in controlling short-term variability in ocean and coastal circulations as well as long-term variations. It also includes modeling of the ocean from the surface to the ocean floor to improve understanding and, eventually, forecasting of climate variability and climate change.

Ecosystem Management
Research focused upon promoting sustainable coastal development, facilitating community resiliency, and enabling NOAA’s ecosystem approach to management in the Southeast U.S. coastal ocean, the Caribbean Sea, and Gulf of Mexico marine ecosystems by enhancing scientific understanding of the interconnections between the marine ecosystem and the adjacent watershed including their human health and resource stewardship implications. This research theme focus (and the following one) specifically include human dimensions science in addition to physical and biological science.

Protection & Restoration of Resources
Research focused upon the prototype development of technology, tools, and effective approaches to restoration, as well as bio-geographical characterizations, intended to enable improvements in defining and protecting components of marine protected areas and restoring habitats and populations. A wide range of problems are addressed from removing contaminants to providing new materials and techniques to protect underwater cultural resources.

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