= Rosenstiel School of Marine and Atmospheric Science =

The Rosenstiel School of Marine and Atmospheric Science (RSMAS / ?ræz.m?s /) is a college and research institute for the study of oceanography and the atmospheric sciences within the University of Miami (UM) . It is located on a 16 acre (65 @,@ 000 m ²) campus on Virginia Key in Miami , Florida , USA . It is the only subtropical applied and basic marine and atmospheric research institute in the continental United States .

Up until 2008 , RSMAS was solely a graduate school within the University of Miami , while it jointly administrated an undergraduate program with UM 's College of Arts and Sciences . In 2008 , the Rosenstiel School has taken over administrative responsibilities for the undergraduate program , granting Bachelor of Science in Marine and Atmospheric Science (BSMAS) and Bachelor of Arts in Marine Affairs (BAMA) baccalaureate degree . Master 's , including a Master of Professional Science degree , and doctorates are also awarded to RSMAS students by the UM Graduate School .

The Rosenstiel School 's research includes the study of marine life , particularly Aplysia and coral ; climate change ; air @-@ sea interactions ; coastal ecology ; and admiralty law . The school operates a marine research laboratory ship , and has a research site at an inland sinkhole . Research also includes the use of data from weather satellites and the school operates its own satellite downlink facility .

= = History = =

In 1940 , University of Miami President Bowman Ashe recruited F.G. Walton Smith , a young British marine biologist who was working in the Bahamas . Smith joined the Department of Zoology , and began organizing the development of a marine laboratory . In 1943 , the Board of Trustees of the University of Miami established the Marine Laboratory for the University . They invited researchers and oceanographers to associate themselves with this laboratory . Its three original objectives were teaching , basic research , and applied marine research . The laboratory focused on subjects specific to the tropical environment . Initially , the Marine Lab was located in a private boathouse on an estate on Belle Isle in Miami Beach , Florida . In 1945 , when the boathouse became structurally unsafe , the lab moved to a converted apartment building in Coral Gables , Florida near the main campus .

In 1947 , a delegation from Dade County prompted the Florida State Legislature to support the development of a state Marine Laboratory in conjunction with the UM lab . It reported to the State Board of Conservation , which had no marine research facility and little budget of its own at the time . The relationship lasted for 12 years until the state of Florida built the board a lab in St. Petersburg . In 1953 , the School 's classrooms and laboratories were built at the current Virginia Key location . It was renamed the Institute of Marine Science in 1961 , it became part of the University of Miami 's School of Environmental and Planetary Sciences .

In 1969 , the institution was made into an independent school and named to honor Lewis and Dorothy Rosenstiel after a major contribution from the Rosenstiel 's foundation to support progress in atmospheric and marine sciences . In 1977 , the school began a joint undergraduate program with Miami 's College of Arts & Sciences . The school bought Research vessels and built more facilities to further research projects . From 2003 to 2008 , the school operated the Pew Institute for Ocean Science as a joint venture with the The Pew Charitable Trusts , and in 2008 , the program relocated to SUNY at Stony Brook .

In 2008 , RSMAS took over administrative functions of the University of Miami 's undergraduate Marine Science , Marine Affairs , and Meteorology programs . Also in 2008 , RSMAS 's library merged with the central University of Miami Library . Recently , RSMAS started unique a one @-@ year Master of Professional Science degree program aimed at students planning non @-@ research careers in business , government , or non @-@ profit organizations .

= = Academics = =

While the graduate programs are conducted by the RSMAS faculty who in turn report to the Dean of RSMAS , the University of Miami 's Graduate School awards the graduate degrees . RSMAS offers a joint program with the UM Law School which awards its students both a Juris Doctor degree and a Master of Arts in Marine Affairs and Policy . RSMAS also administrates the University of Miami 's undergraduate Marine Science , Marine Affairs , and Meteorology programs on the main campus in Coral Gables , Florida .

The Rosenstiel School is divided into six academic divisions , each focusing on a different aspect of oceanography :

Applied Marine Physics (fluid dynamics , remote sensing , waves)

Marine & Atmospheric Chemistry

Marine Affairs & Policy (admiralty law , aquaculture , marine conservation , maritime archaeology , natural resource economics , political ecology)

Marine Biology & Fisheries

Marine Geology & Geophysics

Meteorology & Physical Oceanography

In addition to the academic divisions , RSMAS also has several research units : the Oceans and Human Health Center , the National Resource for Aplysia , the National Center for Coral Reef Research , the Center for Southeastern Tropical Advanced Remote Sensing (CSTARS) , and the National Institute of Environmental Health Sciences . As of 2011 , 358 professors and scientists conduct research programs and teach at RSMAS and the Coral Gables campus . Of these , 81 are regular full @-@ time faculty members .

The school operates the F.G. Walton Smith research vessel . Designed to met the school 's specifications , the catamaran was put on water in 2000 . It is equipped with a special sea water flow system that can take samples . The on @-@ board lab can perform chemical analysis of those water samples . It also has transducers for measuring ocean currents , sub @-@ bottom profiling , and deep water bathymetry . In response to the Deepwater Horizon oil spill , the vessel was reassigned to environmental monitoring of affected areas and to track underwater plumes of oil .

The Rosenstiel School 's research invertebrate museum houses one of the world 's most extensive collections of invertebrate tropical marine life with 400 @,@ 000 specimens . It includes Atlantic tropical marine invertebrates . The collection consists of 60 @,@ 000 specimen lots , out of which 38 @,@ 900 are cataloged and identified species .

Since 2005 , RSMAS has conducted an underwater photography contest that draws international submissions . RSMAS also makes underwater photographs available through its Digital Atlas of Marine Species and Locations , which is a database that includes photos of specific marine species .

Since 1951 , RSMAS has published the Bulletin of Marine Science a scientific journal which publishes research papers in the marine subject areas covered by the school . It is published four times a year .

The United States National Research Council ranked graduate research programs based on 2008 data , and RSMAS ranked 11th to 40th among Oceanography , Atmospheric Sciences , and Meteorology Rankings . The RSMAS entering graduate students ' Average Quantitative Graduate Record Examination score was 681 .

= = Campus = =

The Virginia Key 18 @-@ acre (73 @,@ 000 m2) campus includes classroom facilities , laboratories , a dock , and a student center . The center , called the F. G. Walton Smith Commons , holds a cafeteria and a bar that was rated as one of Miami 's best secrets by the Miami New Times in 2008 . The RSMAS campus features mangroves , sea grape trees , and other dune plants to protect its sand dunes and the campus from storm damage . In 2009 , UM received a $ 15 million federal grant to help construct a new $ 43 @.@ 8 million , 56 @,@ 500 square feet (5 @,@ 250 m2) Marine Technology and Life Sciences Seawater Research Building . The Virginia Key campus is

located at a 65 @-@ acre (260 @,@ 000 m2) marine research and education park that is also home to two National Oceanic and Atmospheric Administration (NOAA) research laboratories and the Maritime and Science Technology Academy magnet school .

RSMAS also operates a 76 @-@ acre (310 @,@ 000 m2) site on mainland Miami @-@ Dade County that was formerly the United States Naval Observatory Secondary National Time Standard Facility , which already had buildings and a 20M antenna used for Very Long Baseline Interferometry (VLBI) . The Rosenstiel School 's Center for Southeastern Tropical Advanced Remote Sensing (CSTARS) and Richmond Satellite Operations Center (RSOC) have research facilities located on what is now named the Richmond Campus .

= = Research = =

As of 2008 , RSMAS receives $ 50 million in annual external research funding . Laboratories at Virginia Key are equipped with specialized instruments including a salt @-@ water wave tank , the five @-@ tank Conditioning and Spawning Systems , multi @-@ tank Aplysia Culture Laboratory , Controlled Corals Climate Tanks , and DNA analysis equipment . The Richmond Campus ' CSTARS provides RSMAS with a near @-@ real @-@ time weather satellite downlink . The Rosenstiel School also operates the Bimini Biological Field Station , an array of oceanographic high @-@ frequency radar along the US east coast , and the Bermuda aerosol observatory . Since 1977 , the Cooperative Institute for Marine and Atmospheric Studies (CIMAS) , a scientific partnership between UM and the NOAA , has been studying climate change , air @-@ sea interactions and coastal ecology .

Research projects at RSMAS are in the domain of atmospheric and marine sciences and include :

Coral reef research , focusing on corals survival in a new climate conditions ; coral reef protection

Field programs evaluating trace gas chemistry and transport

The aquaculture program

Climate change modeling

Tropical weather , climate , and atmospheric / oceanic circulations

Air @-@ sea interactions research through buoys , remote sensing , analysis in situ , a wave tank laboratory , numerical modeling ;

Volcanoes in the Pacific , Everglades water level measurements and subsidence through satellite images

Studies of the coastal quality and the impact on human health .

RSMAS 's Marine Affairs & Policy Division also conducts archaeological and paleontological research at Little Salt Spring in Sarasota County . The site was donated to the University of Miami in 1982 . RSMAS also hosts the National Center for Coral Reef Research (NCORE) , which works to understand , conserve and manage coral reefs worldwide .

RSMAS has focused significant resources to studying the Deepwater Horizon oil spill and its long term environmental effect . The school is an active member of the State of Florida 's Oil Spill Academic Task Force that works with the Florida Department of Environmental Protection on spill issues . In the summer of 2010 , a CIMAS team working with the research vessel Walton Smith was able to document a 23 @-@ mile (37 km) long oil plume extending toward the Dry Tortugas .

The Development Bank of Latin America has awarded a grant to RSMAS to conduct a feasibility study for a new experimental water tunnel facility located in Panama . The facility would be similar to a wind tunnel , but would flow water at high velocity around the objects being studied .

The quality of the school is evaluated through peer @-@ reviewed competition for faculty research grants . In addition , each year , the National Science Foundation conduct a nationwide student competition for Graduate Research Award Fellowship , and in 2010 , five RSMAS students received such awards with two additional honorable mentions .

= = Notable faculty = =

Frederick Bayer (Marine Biology)

Cesare Emiliani (Geology and Geophysics) - " founder of paleoceanography "
Samuel H. Gruber (Marine Biology and Fisheries)
José Carlos Millás (Meteorology)
Fred Tappert (Applied Marine Physics)