

MIMES REPORT

Minorities in Marine and Environmental Sciences

Winter 1998

Summer Intern Program Summary of Summer 1998 Activities

STUDENTS EXPLORE THE WORLD OF SCIENCE

Our twelve-week program, funded by the National Science Foundation (NSF), Ocean Science Program since 1996, is designed to give undergraduates “hands-on” experience in the fields of marine and environmental sciences. The program gives students the opportunity to conduct independent research projects under the guidance of marine scientists. The scientists serve as mentors to the students, explaining all facets of current research and the importance of conducting high quality research. They also expose the students to other research being conducted at the Marine Resources Center, and provide them the opportunity to observe fellow interns working on their research projects.



Interns from left to right: Devin Casey, Patrice Mazyck, Latoya Smalls, Endia Johnson, Alexis Epps, and Milly Puddan.

The 1998 interns undertook research projects that addressed issues that policymakers, coastal zone managers, and ecologists grapple with each year. The success of the program is attributed to the mentor-based training that the students receive.

Latoya Smalls, a junior marine science major at Coastal Carolina University in Conway, South Carolina, stated that, “My mentors dedicated the time that I needed to conduct a successful project.” Latoya examined the year



Latoya Smalls helps Larry Goss during field collections in the ACE Basin.

class strength of several estuarine fishes of recreational importance. Latoya analyzed four years of data collected within

South Carolina’s ACE Basin, using various statistical techniques. Ms. Smalls commented that, “This program is preparing me for the kinds of work I may become involved with in the future.” The two scientists, William Roumillat and Sandra Upchurch, that helped her mentor, Dr. Elizabeth Wenner, stated that “Latoya demonstrates great drive and determination.”

“I have greatly improved my knowledge of statistics,” commented Alexis Epps. She is a senior at New Mexico State, in Las Cruces, New Mexico, with a double



Alexis Epps weighs the oysters at the end of an experiment.



Milly Puddan prepares an algal sample for analysis.

major in animal science and biology. Ms. Epps worked with Ms. Nancy Hadley and Dr. Loren Coen on a larval oyster growth study. Her project involved testing the efficiency of artificial diets on larval oyster growth. Ms. Epps commented that, “Dr. Coen and Ms. Hadley were available whenever I needed help.”

Milly Puddan, a senior chemistry major at Converse College in Spartanburg, South Carolina, assisted her mentor, Dr. Peter Moeller of National Ocean Service. Her summer project entailed characterizing the basic constituents from cellular extracts to identify various new strains of algae that produce seafood-related toxins. Milly was pleased that, “I not only learned how to operate very sophisticated equipment, but I now know how it works.” She told us that, “Dr. Moeller was very helpful in explaining the purpose of each laboratory instrument that I used.” Milly was so enthralled that she assisted her mentor with the project after the summer program was completed. “I enjoyed my work in the laboratory, and I would love to return next year and continue my work with Dr. Moeller.”

Endia Johnson, a sophomore at the College of Charleston in Charleston, South Carolina, focused on evaluating the effects of low oxygen levels on marine worms. Under the direction of Dr. Fred Holland and Dr. Denise Sanger, Endia conducted tolerance and behavior experiments on two species of oligochaetes. She commented that, “My research experience taught me problem-solving skills that will help me to approach future problems.” Dr. Holland firmly believes that daily contact between student and mentors helps to motivate the students and cultivates confidence in their ability to do quality research.

Endia Johnson prepares a chamber for oligochaete tests.

He told us that “The students even surprise themselves with the quality of their research projects.”

At the end of the program, Devin Casey commented that “I learned something new every week.” Devin, a sophomore, plans to major in biology/pre-med at South Carolina State University in Orangeburg, South Carolina. She investigated the relationship between the density of postlarval white shrimp in estuaries and estuarine axial convergent currents. She spent the first few weeks on the Ogeechee River, Georgia, with her mentor, Dr. Charles Barans. Devin gathered data for her project and participated in plankton collections during the scientific cruise. Devin stated that, “Dr. Barans was an excellent teacher.”

“I enjoyed going out to my study sites and collecting the data for my project,” remarked Patrice Mazyck. Patrice was a recent graduate of Benedict College in Columbia, South Carolina; her career goals include securing a job in the environmental health field. During the summer, Patrice used a Geographic Information System (GIS) mapping software to track the occurrence of oyster diseases in coastal waters. Patrice worked closely with her mentor, Bill Anderson, whom she said, “was very patient and would explain the techniques until I understood them.” She developed a GIS-based technique for analyzing the spatial and temporal distribution of diseased oysters in South Carolina estuaries.





Devin Casey confirms positions of axial convergent currents.

also stressed how the understanding of ecological processes is vital to the sound development of coastal zone resources.

Dr. Tom Mathews, a Senior Scientist at MRRI, spoke to the interns about the sediment contaminant study conducted by a 1997 summer intern. This study involved deploying semi-permeable membrane devices (SPMDs) which can detect organic contaminants at levels in the water too low for normal sampling methods. Dr. Mathews told the interns that the study provided invaluable information about SPMDs and their potential use as future indicators of water quality.

EXCELLENT ROLE MODELS

An important aspect of the program is to give students an opportunity to interact with role models. The interns conversed with four minority scientists representing several areas of expertise in an informal setting. Visiting scientists initiated dialog by talking about their career goals and the kinds of opportunities that are available in their particular fields. Over lunch, the scientists asked the students about their professional aspirations and dreams. During the afternoon, the students explained their research projects, as the scientists visited their work stations. After picture-taking, students asked the scientists questions including why they chose their career, and what steps they took to reach their professional goals. Many students were also seeking information on graduate school.

The first speaker was Dr. Howard Adams, Director of the National Institute of Mentoring, who focused on building individual self-confidence. He stressed that they could enhance self-esteem not only through positive interactions with mentors, but also through hard work. Dr. Cecil Jennings, Leader of the Georgia Cooperative Fish and Wildlife Research Unit at the School of Forest Resources of the University of Georgia, stressed the importance of making the necessary sacrifices to attain goals. As he put it, "opportunity cost is inevitable for success." Because many students were interested in graduate schools, he spoke at length about graduate school options.

In mid-July, Dr. Pernell Lewis of the Biological Sciences Department at the University of South Carolina spoke to the interns about his research in fisheries. During his visits to the students' work stations, he engaged the students in lively discussions about scientific method. Students found his suggestions very helpful and insightful. Captain Evelyn Fields, Acting Deputy Assistant Administrator at NOAA's National Ocean Service, spoke on the career opportunities for minorities, especially females, in NOAA and similar federal environmental agencies. Like the other speakers, she stressed that they achieve success through hard work, determination, and above all, the students must believe that they can achieve their goals.

CLASSROOM TRAINING

During the first month of the program, interns also attended classes to expand their knowledge of marine science. Through classroom seminars, the students developed an appreciation for the many different scientific disciplines, including chemistry, hydrology, physiology, fisheries science, and ecology, that make up the diverse field of marine science. Dr. Fred Holland, Director of Marine Resources Research Institute (MRRI), incorporated many of these topics into his "Importance of Watershed Health to Marsh and Tidal Creek Communities" talk. He



Patrice Mazyck and Bill Anderson digitize information for an oyster habitat map.

PREPARATIONS FOR THE BIG DAY!

After eight intensive weeks of research and lectures, the students wrapped up their experiments and began preparing their written reports and oral presentations. They analyzed data, interpreted results, and wrote conclusions. With the help of mentors and MRD computer and graphics staff, students prepared slides for oral presentations. On August 13, students presented summaries of project research to scientists, family, friends, and MRD volunteers. Following the presentations, mentors and Dr. John Miglarese, MRD Deputy Director, presented the students with certificates of achievement. Dr. Miglarese commented that he thought the students' oral presentations and professionalism improve every year. A congenial luncheon at a local seafood restaurant followed the presentations. Interns, family members, mentors, and MRD Minority Affairs Committee members attended the luncheon.

UPDATE ON PREVIOUS INTERN STUDENTS



Amy

Amy Belton, a 1995 MRD summer intern graduated from Claflin in College in 1998. Another 1995 intern, Tameka Byrd, graduated from Benedict College and entered the



Tameka

graduate program in the School of Public Health at University of South Carolina during 1998. Congratulations, Amy and Tameka! During the summer of 1998, Veronica Cline, a 1996 intern, participated in a summer GIS internship program at Chevron Oil Company. TrVera Williams, a 1997 intern, enrolled in a physical therapy



Veronica

Master's program at University of South Carolina - Greenville. Another 1997 intern, Reginald Garner, graduated from Winthrop College in December of 1998. Reginald is now a Production Coordinator with Nan Ya Plastics Corpo-



TrVera

ration in Lake City, South Carolina. Due to the quality of Marla Taylor's 1997 summer research project, she received academic credit hours at her home institution, Southern University in Louisiana.



Reginald



Marla

Several summer interns from previous years have presented their research projects at national meetings and respective colleges. This year was no exception. Alexis Epps presented her research at the 1998 National Minority Research Symposium sponsored by the National Institute of Health and held in New York City. Her mentors also plan to submit Alexis' research to several mariculture journals. Endia Johnson, a SCAMP Scholar, presented her paper to a panel of judges at the 4th Annual Science and Engineering Fair held at the University of South Carolina, Columbia. Ms. Johnson and Latoya Smalls will present papers at the American Society of Limnology and Oceanography (ASLO) meeting that will be held on January 31- February 5 in Santa Fe, New Mexico.

Alumni of the Minority Intern Program, what are you doing these days? We would love to know how all our previous interns are doing and where they are now. We would appreciate phone numbers, home addresses, and e-mail addresses. Thanks!

REFLECTIONS OF THE PROGRAM STAFF

"The dedication and hard work of the Minority Affairs Committee (Donnia Richardson, Charlie Barans, Bill Roumillat, Louis Heyward, Phil Maier, Ray Rhodes, Sandra Upchurch, and Donnie Kinard) and mentors were evident again this year," said Ms. Yvonne Bobo, Chairperson of the Minority Affairs Committee. "The students learned a lot and thoroughly enjoyed the experience. The invaluable support from volunteers is to be commended."



*Newsletter Editor
Sandra Upchurch*

For more information about the summer internship program,
please contact

Donnia Richardson or M. Yvonne Bobo
SCDNR, Marine Resources Division
217 Fort Johnson Road
Charleston, South Carolina 29422

(Ms. Richardson: 803/762-5000 ext. 2233 or richardd@mrd.dnr.state.sc.us)

(Ms. Bobo: 803/762-5000 ext. 5413 or boboy@mrd.dnr.state.sc.us)

Minority Intern Program's web page: www.dnr.state.sc.us/marine/minority

