

## **Aims and Scope of the Coastal Biology Program**

In 2004, the University of North Florida began a program that will include the establishment of and institutional support for a set of academic flagship programs. These programs will build upon the strengths of the University, and will be awarded to academic units that are uniquely qualified to provide regional or national leadership. Being awarded Flagship Program status is a clear statement of recognition of the accomplishments and potential of a department. It also represents an investment on the part of the University in the future of that department to realize its potential and become a center for excellence in its field. A flagship program must build an exceptional faculty both through new hires and through faculty development; recruit and attract top-quality students to the program; and leverage its strengths by developing partnerships inside and outside the University to provide significant financial support for the program through grants and endowments. In the fall of 2006, the Department of Biology was granted Flagship status for the development of the Coastal Biology Program.

The UNF Department of Biology has grown dramatically since 2001. Major program advancements include:

- Forming an independent Biology Department that is no longer combined with Chemistry & Physics
- More than doubling the tenure track faculty from five to eleven members.
- Developing and instituting a growing Masters Degree program.
- Increasing the yearly amount of external funding and number of publications by more than an order of magnitude.

The focus of the university and especially of the Biology Department is developing a well-respected and thriving research program to complement the commitment to undergraduate education for which UNF has become known.

The Coastal Biology Flagship Program will build upon strengths already present in the Department of Biology, and bring into focus an emerging theme that has been naturally developing within the department over the past several years. Specifically, the department has built a cadre of scientists whose research expertise covers a wide range of coastal biology, from genetics and molecular biology to ecosystem level aspects. The current areas of faculty expertise and the geographic location of the University of North Florida make us exceptionally well suited to be a center of excellence in the study of coastal ecosystems. The campus is uniquely situated near the Atlantic Ocean, the St. John's River, and the Intracoastal Waterway. All of these bodies of water and their associated coastal habitats lie within 15 miles of campus. No other university in the country has all of these coastal habitats in such close proximity. Thus the Biology Department at UNF is poised to become a regional leader in the study of coastal biology.

## **Objectives of the Coastal Biology Program**

- **Develop a Coastal Biology emphasis for Undergraduate and Graduate Programs**

The primary mission of the University of North Florida is education, and the Coastal Biology program will be committed to furthering education at all levels. First, developing a Flagship Program in coastal biology will allow for the expansion of undergraduate and graduate education and course offerings. This enhancement of undergraduate education would be realized through the development of Coastal Biology emphases for the Bachelor's and Master's degrees offered by the Biology Department. These emphases or "tracks" will provide our graduates with a unique competitive edge in related jobs and graduate programs, and an increased awareness of the need for stewardship of coastal ecosystems.

Many of the courses currently offered by the department already have a coastal focus. For example, the Methods in Ecological Restoration course emphasizes the restoration of coastal habitats such as salt marshes and beach/dune communities. Similarly, the Marine Ecology course focuses on salt marshes, estuaries, and near-shore habitats. A number of other classes such as Community Ecology, Limnology, and Microbial Ecology also emphasize coastal habitats, and even more classes such as Herpetology, Botany, and Advanced Evolution could be modified to focus on coastal systems. We will also begin to offer additional courses that would be necessary to provide a broad curriculum focused on coastal biology.

- **Summer Coastal Biology programs**

Summer workshops for undergraduate students and K-12 educators will be developed which are intended to be immersive investigations of Coastal Biology. Classes would be attended daily, with days alternating between classroom, field and lab activities. Faculty members would present lectures in their area of expertise and teach techniques commonly used in their research. For example, an ecology-based class may teach students how to do aquatic biodiversity surveys by using class time to familiarize students with the systematics of the organisms they may encounter and ways to evaluate diversity. The field component of the course might train students in techniques to sample aquatic diversity, while lab time might be devoted to teaching macroscopic and microscopic techniques for identification of the collected organisms.

- **Seminars to educate the public regarding Coastal Biology**

The Coastal Biology program at UNF will also have a deep commitment to public education. A coastal science seminar series will be established, in which

national or international experts on some aspect of coastal biology will be invited to UNF to speak to the public.

- **Forging Collaborative Partnerships**

One of the primary objectives of the Coastal Biology Program is to establish and expand collaborative relationships both within and outside of the university. These partnerships will increase the capabilities of Biology faculty, expand the research and internship opportunities for students, and open new avenues of external funding. Numerous collaborations between Biology Department faculty and faculty from other departments and colleges within UNF, especially with the Departments of Chemistry & Physics and Engineering have already been established and would continue to be important. The recent creation of the UNF Environmental Center is a tremendous asset and will greatly enhance the ability of Coastal Biology to obtain funding through public and private connections.

The Coastal Biology program and its research can directly benefit local and regional agencies and organizations. For example, the Florida Department of Health has expressed interest in collaborating with Biology faculty to study toxins in coastal systems. Dr. Rick Gleeson, the research director of the Guana Tolomato Matanzas (GTM) site of the National Estuarine Research Reserve (NERR) System has indicated the need for UNF to conduct coastal research of NERR sites, and has mentioned the possible establishment of a field station to be used at GTM. This field station would require renovation of existing facilities to accommodate teaching and research labs. Achievement of Flagship status will make UNF more competitive for obtaining the necessary external funds from the federal NERR system and agencies such as NSF to fund these renovations and the development of UNF's state-of-the-art field station at GTM.

Biology faculty members already have strong collaborative relationships with personnel at a number of national, state, and regional agencies such the National Parks Service, the Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, and the Saint John's River Water Management District. These relationships will be significantly strengthened with the creation of a Flagship Program in Coastal Biology, and will provide incredible opportunities for education of students and research activities.

Creation of the Coastal Biology Flagship Program is intended to greatly enhance the reputation and capabilities of the Biology faculty, and to establish the University of North Florida as a leader in coastal biology. It is anticipated that faculty expertise that covers all aspects of coastal biology, as well as the collaborations mentioned above will make the UNF Coastal Biology program very competitive for funding from agencies such as Sea Grant, National Institute of Health, National Science Foundation, Environmental Protection Agency, US Fish and Wildlife Service and Department of Interior Coastal Program, which emphasize interdisciplinary studies of practically applicable science. The Coastal

Biology program will also provide indispensable services to the community through research and consulting. As the reputation and recognition of the Coastal Biology Program grow, so too will the partnerships developed with many public and private agencies.

### **Role of the Coastal Biology Program Director**

The Director of the Coastal Biology Program will play a pivotal role in achieving the objectives of the program and raising it to regional and national prominence. For this position of leadership, we need a senior biologist with a record of scholarly excellence in coastal or marine systems. As a member of the Department of Biology, the director will be expected to maintain active research program involving undergraduate and graduate students, as well as teach courses in the biology core curriculum and in faculty member's area of expertise. Approximately half of this faculty member's responsibilities will entail directing the Coastal Biology Program and achieving its goals and objectives. One of the most important responsibilities of the program director will be to develop and enrich partnerships both within UNF and outside of UNF. These collaborative partnerships will provide continuing educational opportunities and support of research that will sustain the Coastal Biology Program into the future. The program director, with the assistance and support of other Biology faculty members, will be instrumental in developing the Coastal Biology emphases for undergraduates and Master's students, summer workshop programs for undergraduates and K-12 teachers, and establishing a Coastal Biology seminar series.