DEPARTMENT OF MARINE SCIENCES

2020-2025 Strategic Plan

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Department of Marine Sciences 2020 – 2025 Strategic Plan Approved by the Faculty December 10, 2020

Overview

The University of Georgia (UGA) has been actively involved in ocean research since the early 1950s, when the Marine Institute was established on Sapelo Island. Today UGA is Georgia's Sea Grant College and boasts some of the finest coastal facilities in the Southeast, including the Skidaway Institute of Oceanography (Skidaway Institute), the Marine Institute, the Center for Research and Education at Wormsloe, and Georgia Sea Grant-Marine Extension Service facilities on Skidaway Island and in Brunswick. The Department of Marine Sciences was founded in 1992 and, in the intervening 28 years, has assembled a world-class faculty and established a strong, extramurally-funded research program. As part of the Franklin College of Arts and Sciences, the Marine Sciences Department is working to fulfill the university's land and sea grant missions through its teaching, research, and service and outreach.

Stationed both on the Athens campus and at the Skidaway Institute, the Department of Marine Sciences has twenty-three full-time faculty members who have expertise that spans oceanographic disciplines - covering the biological, chemical, physical, and geological processes within the world's oceans. With a strong reputation in graduate education and research excellence, the Department launched its first undergraduate degree program in Fall 2020 – a Bachelor of Science in Ocean Science. With unique experiences that world-renowned researchers and diverse learning environments can offer students at all levels, the Department is well-positioned to become a leader in undergraduate Ocean Science studies.

The Marine Sciences faculty have built strong partnerships and engage in a range of outreach efforts to increase its impact in Georgia, and these activities reflect UGA's service and outreach mission. Opportunities for all ages are provided to learn about the marine environment including Skidaway Marine Science Day, organized by the Marine Extension Service and attended by thousands, to more intimate events like the "Evening at Skidaway" public lecture series. The Sapelo Island field trip, for 11th grade biology students from Cedar Shoals High School in Athens, provides hands-on research activities for students to directly engage in learning about coastal ecosystems and marine environments.

The Department has developed this strategic plan to guide its work in research, teaching, and outreach through the next five years, from 2020 through 2025. Specifically, this plan outlines strategic goals and objectives for the Department which align with UGA's 2025 Strategic Plan Goals and Key Performance Indicators¹. Some are taken directly from these indicators while others focus on unique challenges such as the growth of the new undergraduate program and the

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¹ https://oir.uga.edu/sp2025/

continued integration of the coastal campuses with the main campus in Athens. The Department's goals are organized by the university's three "mission-centered" Strategic Directions, namely:

- 1. Promoting Excellence in Teaching and Learning
- 2. Growing Research, Innovation, and Entrepreneurship
- 3. Strengthening Partnerships with Communities Across Georgia and Around the World

In addition to meeting the university's goals, this plan addresses values, opportunities, and challenges that were identified as critically important to the Department's mission and success. While some of these are embedded within the University's Strategic Directions, four areas of focus are highlighted to emphasize the Department's commitment to taking concrete actions to achieving them:

- 1. Growing the Ocean Science (B.S.) Program
- 2. Increasing Diversity, Equity and Inclusivity
- 3. Updating the Curriculum to be Responsive to Student Career Paths
- 4. Strengthening ties between Athens and Skidaway Institute

During the course of this plan's development, the historic COVID-19 pandemic began which has already significantly impacted some of the outlined goals. For example, budget cuts interrupted faculty recruitment efforts in Athens and resulted in the loss of one faculty line at Skidaway Institute; research productivity has been affected through laboratory shutdowns and fieldwork interruptions; the loss of two staff positions in Athens has resulted in faculty taking up more administrative responsibilities; and finally, three of ten State-funded educational ship days on the *R/V Savannah* were lost. Further effects of the pandemic are likely, but their impacts on research, teaching, and budgets remain uncertain.

Fortunately, due to its distribution across campuses, the Department has already invested in teleconferencing technologies over the past few years and many faculty members have significant experience teaching remotely and through online platforms. This positions the Department well to successfully manage its course loads through the pandemic and beyond. Additionally, many faculty have been taking advantage of teaching and professional development opportunities that are now fully online, including off-campus faculty who would normally be unable to utilize these resources. The University of Georgia has also invested in video conferencing technology for distance teaching and learning in classrooms all across campus.

During this plan's development, the nation was also confronted with social unrest arising out of the tragic deaths of African-Americans and Black citizens at the hands of law enforcement. As a result, the Department embarked on serious discussions about the need for racial diversity, equity and inclusion. Our commitment to developing a Diversity and Inclusion Plan is discussed in more detail later in this document.

This Strategic Plan is designed to outline a course of action over the next five years while also acknowledging an unpredictable future. This plan therefore reflects objectives and tactics related to remaining flexible and responsive during the pandemic and its aftermath. It also highlights the importance of continued engagement by the faculty with the plan so that the Department can

remain responsive to emerging concerns in a rapidly-evolving work, research, and teaching environment.

Process

The Department engaged the Institute of Government at the University of Georgia to support the development of a strategic plan that reflects the Department's priorities. A steering committee of Marine Sciences faculty, in conjunction with the Institute of Government, solicited input and insight into the Department and oversaw the drafting of this plan.

A survey of the Marine Sciences faculty generated a range of questions that were posed during a faculty retreat where additional input and prioritization was done through electronic voting and small group discussions. Initial voting results and discussion findings are summarized in a separate internal document shared with faculty. At the retreat, faculty also recommended individuals – including program alumni, partners across campus, agency partners, peer institutions, and campus leadership – for external interviews which were later conducted via phone or in person by Institute of Government faculty.

Focus groups were then conducted with faculty in Athens and at Skidaway Institute to further inform the development of this plan. These various levels of engagement have provided insight and information developed through a robust process, thus providing focus to best inform this strategic plan before its approval by the faculty.

Strengths and Opportunities

As part of the larger University System of Georgia, the Department also acknowledges the contributions made by Savannah State University (SSU), an Historically Black College and University (HBCU), with a Marine Sciences Program that ranks first in the nation in the graduation of African-American M.S. degree recipients in Marine Sciences.² As a result, tremendous partnership opportunities exist between the Department of Marine Sciences at UGA and the Department of Marine and Environmental Sciences at SSU.

The following charts distill strengths and opportunities identified at the faculty retreat, in focus groups, and in individual interviews. They are categorized in the following areas: research, education/teaching, outreach, and departmental culture. Many of the strengths and opportunities overlap across these categories, reflecting how research, teaching, and outreach often intertwine.

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² https://www.savannahstate.edu/cost/mar-env-science/marine-science/index.shtml

RESEARCH

Strengths

- o Influential, internationally-recognized faculty.
- Strong publication record.
- o Strong grant record.
- o Strong reputation within UGA.
- o Superb research and educational facilities on the coast.
- Recognized excellence in marine microbial ecology, marine biogeochemistry, tidal wetland/shelf ecosystem dynamics.
- Research and collaboration opportunities created by the UGA and Skidaway Institute merger.
- O Diverse and complementary research portfolio.
- o Highly interdisciplinary.
- Quality faculty.
- Research with broad appeal to and interest from the general public and the state of Georgia, as well as national and international importance.
- Strong research assets including the coastal-class vessel RV Savannah and other small vessels at Skidaway Institute and the Marine Institute.
- The graduate student body, which ties and promotes the overall success of the department, and opens new avenues of research and collaboration.

Opportunities

- Strengthen ties between Athens and Skidaway Institute.
- Seize potential for greater integration of research given focus of faculty and coastal assets.
- Partner with UGA College of Engineering, as its growth provides opportunities for collaborations.
- Partner with quality scientists (social and natural sciences) at UGA having interests relevant to Marine Sciences faculty.
- o Provide effective mentoring to junior faculty.
- Increase number of junior faculty interested in promoting cross-department interactions.
- Develop opportunities for Marine Sciences faculty to participate in interdisciplinary research with collaborators on both campuses.
- Leverage reputation of coastal assets (Skidaway Institute and Marine Institute) to further build department reputation for research relevant to Georgia.

EDUCATION/TEACHING

Strengths

- The new undergraduate Ocean Sciences major.
- The exceptional coastal resources (boats, Skidaway Institute, Marine Institute, etc.)
- The merger between UGA and Skidaway expands expertise and facilities.
- O The renovation of the Barn facility at Skidaway Institute into the Ocean Sciences Instructional Center, now provides classrooms and teaching lab facilities that improve teaching resources.
- The research vessel (RV) Savannah as a platform for education and research.

Opportunities

- o Take advantage of excellent opportunities for experiential learning, study away, and research internships.
- Expand course offerings through new courses in faculty's fields of specialization.
- Take advantage of ARCHE (Atlanta Regional Council for Higher Education) to grow/support graduate education.
- Engage students from Savannah State in graduate program recruitment.
- Use coastal assets (ships, Skidaway Institute and Marine Institute) for field trip opportunities.
- Expand graduate program opportunities through the nonthesis M.S. degree and the Double Dawgs pathways.
- Expand the number and diversity of graduate students to increase the educational impact across the state and region.
- Update the curriculum to train the next generation of marine scientists for jobs in industry and government agencies.
- Expand opportunities for Skidaway Institute graduate student funding and address program requirements that adversely impact students at remote facilities

OUTREACH

Strengths

- Faculty, particularly those working on coastal resources, have strong reputations with state and local coastal managers.
- o UGA is Georgia's Sea Grant College.
- Work has broad appeal to and interest from the general public and the state of Georgia, as well as national and international importance.
- Collaborations between faculty and Marine Extension-GA Sea Grant outreach specialists
- Skidaway Marine Science Day and Evening at Skidaway public events.
- Sapelo Island field trip for 11th grade biology students from Cedar Shoals High School in Athens.

Opportunities

- Further position the Department of Marine Sciences to be the research authority on coastal issues in the Southeast with department members, social scientists, policy experts, etc. who are working on coastal issues.
- Take advantage of funding from Marine Extension-GA
 Sea Grant for research and graduate students.
- Improve communications about Marine Sciences activities through internal UGA media outlets.
- O Support and showcase work, including student work, that is relevant to state and local stakeholders.

CULTURE

Strengths

- Well-funded faculty generating funds for departmental resources, infrastructure and support of faculty and students.
- Junior faculty eager to raise status of marine sciences at UGA.
- Progress toward integrating campuses (Athens and Skidaway Institute), with shared understanding of future potential and mutual benefits.

Opportunities

- Strengthen ties between Athens and Skidaway Institute to further integrate campuses and cultures.
- Raise the morale, integration, and quality of graduate students through a more student-centric perspective.
- Strategize for upcoming faculty and staff retirements.
- Consider impacts of the imbalance between senior faculty (concentrated in Athens) and junior faculty (concentrated at Skidaway Institute).
- o Improve graduate student recruitment.
- Address tensions and conflicts created among faculty recruiting students individually.
- Address uncertain expectations surrounding promotion and tenure.
- Improve communication between Athens and Skidaway Institute campuses, focusing on information related to departmental matters, research, and teaching.
- Improve communication to students regarding funding and research opportunities supported by Marine Extension-GA Sea Grant and other funding opportunities within the State and Nation.

Strategic Goals

The following goals and objectives, as measured with key performance indicators (KPIs), track the three-pronged framework established by UGA.

1. Promoting Excellence in Teaching and Learning		
Goal 1.1: Build an effective communications and recruitment plan to promote the launch of the Bachelor of Science in Ocean Science and draw students to the degree program.	KPI 1.1.1: Work with Franklin College to develop materials that communicate the degree program, its requirements, and describe career opportunities with an Ocean Science degree. KPI 1.1.2: Fully develop undergraduate curriculum, including teaching responsibilities and scheduling. KPI 1.1.3: Determine ways to work cooperatively with Savannah State University to develop collaborative opportunities for undergraduate education in Ocean	
	Science (UGA) and Marine Sciences (SSU) programs.	
Goal 1.2: Maintain current faculty numbers by replacing retiring faculty to	KPI 1.2.1: Recognizing the limitations of the current budget realities, replace retiring faculty in a timely manner to meet the needs of the department.	
meet the undergraduate and graduate teaching demands as well as the research and outreach missions of the university.	KPI 1.2.2: Build a supportive, collegial atmosphere in the department among faculty, staff and students across the campuses.	
Goal 1.3: Increase the number, diversity, and retention rate of graduate students in the Department	KPI 1.3.1: Strengthen relationships across the University to increase student interest and engagement with the Department of Marine Sciences as a way to increase recruitment opportunities and diversity.	
of Marine Sciences.	KPI 1.3.2: Engage with professional societies, institutional groups, and other organizations to increase and diversify graduate student recruitment, sustain student engagement, and provide forums for discussing and engaging with DEI topics.	
	KPI 1.3.3: Identify opportunities to increase faculty support for and mentoring of graduate students and inclusion of diverse students through advising, mentoring, and informal engagement.	
	KPI 1.3.4: Develop opportunities for graduate research assistantships and teaching assistantships at Skidaway Institute campus.	
	KPI 1.3.5: Update curriculum to reduce course overlap and to be responsive to student career paths.	
Goal 1.4: Ensure that every classroom on every campus (Athens, Sapelo, Skidaway) has technology that is "walk-in ready" for remote teaching.	KPI 1.4.1: Identify technology needs in classroom spaces. KPI 1.4.2: Identify technology training needs for faculty and/or teaching assistants and ensure training needs are met.	

Goal 1.5: Increase experiential learning opportunities for all students.	away capstone program for the new Ocean Science major through the Office of Global Engagement. KPI 1.5.2: Increase Athens-based Marine Sciences graduate student opportunities at Skidaway Institute.	
2. Growing Research, Innovation, and Entrepreneurship		
Goal 2.1: Fully develop the		
opportunities provided by the	collaborative research opportunities.	
merger between Skidaway	* *	
Institute and the Department	KPI 2.1.2: Pursue opportunities to collaborate internally on research proposals,	
of Marine Sciences, and the	leveraging the strengths of the faculty in Athens and at Skidaway Institute, and thus	
expanded expertise and		
facilities, by more		
intentionally using the		
resources of the Department on the coast, and by	understand how they function in relation to each other and in regards to graduate and undergraduate students.	
leveraging opportunities to	undergraduate students.	
collaborate.		
Goal 2.2: Generate new	KPI 2.2.1: Increase externally sponsored research expenditures (federal, private sector,	
diverse and long-term	public sector).	
funding sources		
	KPI 2.2.2: Diversify funding to include private donors and business/industry in Georgia to support new/non-traditional innovative and entrepreneurial initiatives.	
	KPI 2.2.3: Mentor junior faculty to successfully develop new collaborations, and identify funding opportunities and avenues for sustained funding.	
	KPI 2.2.4: Strategically engage with UGA donor relations and the Franklin College development office to increase private sources of funding.	
Goal 2.3: Increase collaboration with other academic units and	KPI: 2.3.1: Pursue sponsored projects involving researchers from academic units outside of Marine Sciences.	
institutions.	KPI 2.3.2: Pursue publications involving authors beyond traditional marine sciences.	
Goal 2.4: Enhance communications about the university's research strengths in marine sciences	KPI 2.4.1: Strengthen engagement with UGA communication professionals to generate earned media about research, innovation, and entrepreneurship involving marine sciences faculty and students.	
and the impact of these activities on local, state, national, and international communities	KPI 2.4.2: Strengthen engagement with UGA communication professionals to improve social media presence.	

KPI 1.5.1: Leverage UGA coastal facilities and develop a coastal semester study

Goal 1.5: Increase

3. Strengthening Partnerships with Communities across Georgia and the World

Goal 3.1: Position the Department of Marine Sciences to be recognized as an authority on coastal issues with department members working collaboratively with social scientists, policy experts, and others who are working on coastal issues.

KPI 3.1.1: Increase engagement with UGA Marine Extension-Georgia Sea Grant and other coastal institutions.

KPI 3.1.2: Be responsive to the needs of decision-makers and agencies regarding coastal Georgia and the oceans.

KPI 3.1.3: Represent the Department of Marine Sciences at meetings, conferences, and student recruitment opportunities to build and sustain relationships.

Goal 3.2: Continue to conduct outreach activities that intentionally engage the public to educate and inform citizens and K-12 students.

KPI 3.2.1: Continue to host public education events at Skidaway Institute and in Athens.

KPI 3.2.2: Continue to bring students to the Marine Institute on Sapelo and at Skidaway Institute to actively participate in research activities.

KPI 3.2.3: Participate in Experience UGA by hosting Clarke County School District students at the Department of Marine Sciences Athens campus.

KPI 3.2.4: Develop more service-learning opportunities for undergraduates that engage students in outreach opportunities.

As this strategic plan is implemented, actions and individuals – preferably with a representative from Athens and Skidaway – responsible for taking next steps must be identified to ensure that goals and objectives are accomplished. Assessing progress will require baselines to be established for each of the KPIs. Quantitative baselines should be established when possible. Through evaluation efforts such as annual student feedback surveys and faculty activity reports, the Department currently collects information that will be useful in establishing baselines for some of the KPIs. In the first year of this plan's implementation, steps therefore should be taken to: 1) identify the baseline data that are available from existing sources, and 2) identify the baseline data that are not available and how they will be gathered. In years two through five, progress will be measured from baselines established in year one.

Growing the Ocean Science (B.S.) Program

Approved in Jan 2020, the Ocean Science (B.S.) program was created to provide undergraduate students with an interdisciplinary understanding of the structure and function of the global oceans and their interactions with the earth and atmosphere system, and to equip them with critical thinking skills and analytical tools to design, carry out, and interpret scientific studies in a broad range of environmental fields. A vibrant program in which a large proportion of Ocean Science majors spend a semester on the coast at Skidaway Institute is being implemented, including a capstone experience where students are involved in course work, field instruction, and directed

research projects. The program will leverage UGA coastal facilities to provide students with experiential learning opportunities in the coastal and ocean environment and will further integrate the Athens and Skidaway campuses.

Several actions must be taken as the Ocean Science program is implemented:

- 1. Provide students with opportunities to take coursework through video-conferencing and online platforms.
- 2. Account for reduced funding support (educational ship days, for example) during the design of field-based experiential learning opportunities.
- 3. Determine how to best accommodate and oversee resident cohorts of undergraduate students in Skidaway housing.

Increasing Diversity, Equity and Inclusivity

The Department embraces Franklin College's statement on diversity:

Because the Arts and Sciences form the intellectual foundation of the academic community, the Franklin College views faculty, staff, and student diversity and inclusion to be core values of our work and learning environment.

Within the Franklin College, diversity is a strength that is critical to excellence in the teaching, research, and service that we provide and it is supported by actively working to create and sustain an inclusive work and learning environment in which different voices and perspectives are heard as well as valued, and where academic freedom is an equal opportunity.

In order to actualize this statement, with input from faculty, staff and students, the Department is developing a Diversity, Equity and Inclusivity (DEI) Plan. A committee has been formed to develop this plan and incorporate feedback received as part of this strategic planning process. Recognizing the benefits of a collaborative and collegial Department will be important to increasing diversity, equity and inclusivity efforts.

One of the immediate actions towards our goal of increasing diversity and inclusion is to support diversity training for all faculty, staff and students, which will identify issues regarding DEI in the Department. In addition, efforts currently underway to develop and deepen relationships among faculty in UGA and Savannah State marine science departments should be continued, with faculty-wide "meet-and-greets" held regularly. Joint research projects should be conducted when possible and growing both the undergraduate and graduate programs at both institutions is beneficial to the state of GA. Efforts to further include Savannah State in the LTER project should continue. Savannah State's success in producing African-American and Black marine science graduates should be explored and best practices adopted.

Updating the curriculum to be responsive to student career paths

The combination of an internationally recognized faculty, extremely active and well-funded research programs, a robust graduate program, a developing undergraduate major and coastal facilities that are unrivaled in the Southeast, represents invaluable resources that will prepare both undergraduate and graduate students for jobs related to the complex and urgent environmental challenges that society faces. While we recognize the importance of preparing students to conduct research, we also recognize that there are many career paths available to students with advanced knowledge of the marine environment. There is a societal need to address marine-related problems in a rigorous and interdisciplinary way. With a curriculum that combines coursework, professional development, experiential and service-learning opportunities, and research and internship experiences, students will be equipped with the knowledge and quantitative skills necessary to participate in a range of environment- and marine-related career paths. A newly formed Curriculum Committee will 1) provide guidance and advice to faculty on developing new courses and revising the content of existing courses, 2) work towards reducing overlap between courses where appropriate and 3) provide a curriculum that meets student needs and interest.

Strengthening Ties between Athens and Skidaway Institute

Of critical and strategic importance to the Department is the need to sustain a collaborative and collegial culture between the two campuses. From the very first phase of strategic planning, the need to better integrate the Athens and Skidaway faculty, particularly with the instructional mission of the Department, was clear – with 76% of faculty agreeing or strongly agreeing to its importance. Unquestionably, a culture of collegiality demonstrated throughout the department will also improve the morale of current and future students by providing an environment where faculty seek to work together in growing the graduate and undergraduate programs.

In order to improve the work environment as well as meet the goals set forth above, the Department should consider ways to increase opportunities for faculty to build productive relationships – a cross-cutting effort involving teaching, research, and outreach. The Department, however, may also want to consider setting up a team – balanced equally between Athens and Skidaway – that is dedicated to strengthening ties between campuses. Strengthening the Department's overall commitment to a productive interchange and establishing communication norms will also be important to improving graduate student and faculty morale and increasing diversity, equity and inclusivity efforts.

Concluding Observations and Next Steps

There are several internal areas that the Department of Marine Sciences identified as strategically important goals to address in the next five years. Among them are to ensure the financial stability of the department. While under the current budget constraints financial challenges may exist, so continuing to pursue grant opportunities will enhance the financial capacity and security of the

Department and Skidaway Institute. Encouraging collaborative efforts could potentially increase extramural funding.

While there are constraints, identifying ways to overcome the distance barrier between campuses may create positive experiences, such as virtual seminars or socials, will also encourage greater collegiality among the faculty and staff. Additionally, some faculty view the promotion and tenure process as having unclear expectations, which can lead to tension and anxiety. A significant number of faculty have expressed a strong interest in addressing these concerns, setting the stage for a more productive working environment. In accordance with departmental bylaws, proposed changes to departmental procedures or policies are initiated by the faculty and submitted to the Head.

The graduate student recruitment process is also identified as an area of concern as it creates tension between individual faculty members. The process should be refined to improve outcomes for all faculty, and most importantly, for all students. Increasing the morale of students, providing a positive learning experience and environment is critical. Again, a significant number of faculty recognized graduate student morale and well-being as an area worth improving and the Department has initiated a mentoring program.

Finally, the Department of Marine Sciences needs to determine what success looks like as it partners with Skidaway Institute, whose faculty report to the Department Head and hence the Dean of Franklin College while also to the Director and hence the Vice President for Research in the Office of Research. A group should be convened to develop an integration plan, and it should include a study of peer institutions with main and coastal campus resources that can help the department understand the issues and opportunities that lay ahead. This integration plan should be both a departmental and Franklin College priority and should outline the goals, the process, the timing, and the participants. Strong agreement was expressed throughout the strategic planning process that the Skidaway Institute brings important faculty, research, and teaching resources to the Department.

Recent external reviews reaffirm that the Department of Marine Sciences at the University of Georgia is an impressive and exciting academic unit. A tremendous amount of vitally important research is generated yearly by a talented and dedicated faculty. This Strategic Plan captures the Department's vision to build upon its excellent reputation in order to enhance its research, teaching, and outreach capabilities. To ensure the implementation of this plan, the Department should commit to reviewing it annually at its first meeting prior to fall semester. In addition, opportunity exists to improve how the department operates using the plan as the guiding framework. Existing structures, such as committees and administrative positions, should be informed by the plan, with department leadership and faculty working to align existing department activities with the plan. Inevitably, adjustments to the plan will need to be made, particularly given recent pandemic and financial realities. Nevertheless, strong potential exists for the Department to achieve each goal and strategy outlined in this document. This Strategic Plan reflects the Department's commitment to enabling and accomplishing our important work.