MARINE SCIENCE PROGRAM
GRADUATE STUDIES HANDBOOK

UNIVERSITY OF
SOUTH CAROLINA

College of Arts and Sciences

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Marine Science Program
Graduate Studies Handbook

INTRODUCTION

This handbook is designed to provide students and faculty with information to enhance their understanding of rules and procedures of the Marine Science Program (MSCI). Clarification of ambiguities can be obtained from the MSCI Director or the Graduate Studies Director.

The Marine Science Program, established in 1972, includes about 300 undergraduate majors and 25 - 30 graduate students. Bachelor of Science, Master of Science, and Doctor of Philosophy degrees are offered. All Marine Science graduate degrees are based on original research and the writing of a scholarly thesis or dissertation. Faculty from throughout the University participate in the Marine Science Program via teaching, directing theses and dissertations, and serving on committees. Faculty include departments in the Colleges of Arts and Sciences, the School of Business, the School of Law, and the School of Public Health. The MSCI graduate level curriculum and research topics stress the interdisciplinary study of estuarine, coastal and oceanic environments. Deep-sea or open ocean studies are possible through the use of private vessels, academically-managed vessels in the UNOLS fleet, NOAA vessels, and the ships of the South Carolina Department of Natural Resources in Charleston, SC.

Students may choose to specialize in biological, chemical, geological, physical oceanography, marine resource policy or marine science education. Specialization is developed with the consent of the student's advisory committee and the Graduate Studies Committee. A collection of theses and dissertations is available for examination in the School of the Earth, Ocean, and Environment's main office and the University of South Carolina's Thomas Cooper Library.

For specific rules and regulations pertaining to graduate study at the University of South Carolina, consult the University of South Carolina Bulletin or the Graduate School web page. For information not contained in this MSCI handbook or the MSCI website (http://www.msci.sc.edu/) students should contact:

Program Director or Graduate Studies Director
Marine Science Program
University of South Carolina
Columbia, South Carolina 29208
Phone: (803) 777-7170
FAX: (803) 777-4239

Program Director: Dr. Ronald Benner
email: benner@mailbox.sc.edu

Graduate Studies Director: Dr. James Pinckney
email: pinckney@sc.edu
Program Web Site: http://www.msci.sc.edu

Graduate Studies Website: http://artsandsciences.sc.edu/seoe/graduate

Degree Requirements for ALL Marine Science Graduate Students

Core Courses

Marine Science graduate students are required to complete each of the following four core courses with a minimum grade of B:

- MSCI 750 Advanced Biological Oceanography (3 credits)
- MSCI 781 Physical Oceanography (3 credits)
- MSCI 745 Geological Oceanography (3 credits)
- MSCI 782 Chemical Oceanography (3 credits)

a. A student who earns less than a B in a core course can follow the Core Course Exemption by Examination process (CCEE), as described in the following section.
b. A student who earns less than a B in a core course and does not pass the CCEE will be dropped from the Marine Science Program.

Students who have completed similar graduate level courses at another institution can petition the Graduate Studies Committee to exempt one or more of the core courses. The student must supply a syllabus and other relevant course materials to be reviewed by the appropriate core-course instructor(s) and the Graduate Studies Committee. Both the core course instructor(s) and the Graduate Studies Committee must approve the petition. Decisions can be appealed to the Program Director (see page 11).

Core Course Exemption by Examination (CCEE)

A student who earns a grade less than a B in a core course will have one opportunity to demonstrate competence by taking the CCEE. The CCEE will be offered within four months of the end of the course unless the Graduate Studies Committee is petitioned within that period of time. The examination will emphasize the basic concepts of that field, e.g., chemical oceanography. The Graduate Director will designate MSCI faculty working in the area in which the unsatisfactory course work was performed to write the examination questions. The Graduate Studies Committee selects the questions. The faculty members responsible for devising the questions will grade those particular questions on the CCEE. A score of less than 70% is a failure in that field. If possible, the identity of the student will remain anonymous to the grader.

The Program Director will designate faculty experienced in the disciplinary area of the examination to review the results of the test and make a recommendation for action to the Graduate Studies Committee. The Graduate Studies Committee will meet with the student and discuss the results of the examination. If the student's performance is unsatisfactory and there are grounds for appeal, the student can ask for a review of the decision of the Graduate Studies Committee by the Program Director. The Program Director will appoint a committee to review the appeal and make a recommendation to the Director. The Appeal Committee should not include anyone who wrote or evaluated the original examination, which includes the question writers, graders or members of the Graduate Studies Committee. The decision on the appeal by the Program Director is final. The student's CCEE and the Graduate Studies Committee action will be placed in the student file. After administration of the CCEE and an appeal is settled, a

copy of the questions will be placed on file in the Program office. Those questions will be available to anyone interested by request.

List of Courses Acceptable For Graduate Credit

A large number of courses are available through different departments and may be counted as graduate credit toward a Marine Science degree. A current list of courses, with credit hours, that can be used for the development of a program of study may be found in the USC Academic Bulletin (http://bulletin.sc.edu/preview_program.php?catoid=35&poid=4219&returnto=4235). Other courses that are not on the list can be used in the plan of study with the approval of the student's advisory committee. Students must consult with their major professor and advisory committee for advice and approval concerning their programs of study. The faculty regularly offers seminar courses in specialized areas in response to student requests.

Residency Requirement

Residency requirements of the Graduate School are described in the Graduate Bulletin. Provisions are made for students carrying out their research at remote sites so they can maintain continuity in the program and residence requirements of the University.

Assistantships and Fees

Financial support is available to a limited number of students each year in the form of graduate teaching assistantships (IA), research assistantships (RA), and fellowships. All applicants to the Marine Science Program are automatically considered for an assistantship. It is important to note that students will not be accepted into the program without identification of a Major Professor willing to offer a minimum of $5000 summer support in the student's first year of the Program. This amount may be reduced or waived if the student receives graduate support from other sources, such as from a fellowship or government agency. Students are encouraged to secure support by writing proposals to appropriate funding sources. The Graduate Studies Director and Graduate Studies Committee review the following criteria to determine whether IAs should be renewed:

a) Teaching performance from student evaluations,
b) Personal recommendations by the professor of record for courses in which the IA assisted,
c) Good standing in the Marine Science Program.

IA support may be limited to a total of 2 semesters for a Master's degree student and 4 semesters for a Ph.D. degree student.

Tuition and out-of-state fees are reduced for all graduate students holding an assistantship. Students are directed to the Office of the Bursar web page for the most up-to-date information about tuition and fees at: http://www.sc.edu/bursar/fees.shtml. Students holding an assistantship also receive tuition abatement funds that cover all or most of their tuition. Students must register for a minimum of 6 hours in the fall and spring semesters and, if holding a summer assistantship, 1 hour in the 12-week summer session. Students in their last semester of coursework may register for only 1 credit hour. Most students presently receive some mode of financial support through the Marine Science Program or their faculty advisors. Students are encouraged not to hold outside jobs while receiving Marine Science support, and all students are encouraged to maintain full-time residence, including summers, while pursuing their

degrees. Provisions are made for students carrying out their research at remote sites so they can maintain continuity in the program and residency requirements of the University. The Graduate School requires that all graduate students holding assistantships have health insurance equivalent to that offered by the University. Details of the health insurance requirement are available through the Graduate School at: http://gradschool.sc.edu/students/paying-tuition.asp?page=paying&sub=tu

Marine Science Program Graduate Students "Good Standing Rule"

Graduate students in the Marine Science Program are expected to meet certain expectations to remain in "Good Standing" in each semester. If a student does not meet these expectations and is no longer in "Good Standing," then the student may be ineligible for financial support (IAs, RAs or student travel grants). The expectations for "Good Standing" are outlined below.

(i) **Masters Students**

The criteria for a M.S. student to be considered making satisfactory progress towards the degree (or in Good Standing) are:

(1) Formation of a Thesis Committee (within first year of graduate study)
(2) Submission of a M.S. Program of Study (not later than the end of 2nd semester of graduate study)
(3) Thesis Proposal Presentation & Comprehensive Exam (1st year)
(4) Enrollment in MSCI 800 (seminar) each semester

(ii) **Ph.D. students**

The criteria for a Ph.D. student to be considered making satisfactory progress towards the degree (or in Good Standing) are:

(1) Formation of Doctoral Committee (1st year)
(2) Dissertation Proposal Presentation / Qualifying Examination (within 24 months of entering Ph.D. program)
(3) Submission of Ph.D. Program of Study (within 2 weeks after the Qualifying Exam)
(4) Comprehensive Examination (within 24 months of entering the program and at least 60 days prior to the dissertation defense)
(5) Enrollment in MSCI 800 (seminar) each semester until graduation

The Graduate Studies Committee will consider the status of each student not in Good Standing for reinstatement after the deficient criteria are satisfied.

Teaching Requirements

All Marine Science graduate students, including those holding RAs, are required to demonstrate competence in teaching. This can be accomplished by satisfactory service as a teaching assistant, with duties including laboratory preparations and lecture, exam grading, and external presentations to elementary and secondary schools. Other mechanisms for satisfying the teaching requirement in lieu of the above (e.g., teaching at Fort Jackson, participation in a practicum) may be sought by application to the Graduate Studies Committee. The Graduate Studies Committee can waive this requirement if the student can document prior teaching experience. Each semester, the Marine Science Program Graduate Committee will determine a deadline after which students who have committed to an IA cannot change to an RA. These

deadlines are typically in November and June each year. All students must teach for at least 1 semester.

Research Assistantships

A faculty member makes these awards to graduate students, usually from assistantships available through a research grant. As with teaching assistantships, renewal is conditional upon satisfactory performance and determined by the faculty member. Students interested in securing a research assistantship should contact the faculty member for whom they wish to work. Each semester, the Marine Science Program Graduate Committee will determine a deadline after which students who have committed to an IA cannot change to an RA. These deadlines are typically in November and June each year.

Student Travel Grants

Program travel funds typically are available to partially support the presentation of scientific research results by graduate students in the Marine Science Program at national and international meetings. Students may request a specific amount of support, but the level of support may vary depending on the number of applicants, availability of funds, and the number of travel awards previously received by the applicant. For some meetings, students may be required to help staff at a program booth during part of the meeting. Students applying for Travel Grants should be currently enrolled for the minimum required credit hours, and must be in good academic standing with the MSCI program. Additional funds may be secured through the Graduate School, the College of Arts & Sciences, and the Vice Provost for Research's Office depending on specific calls and funds available. For more information, see the SEOE Graduate Programs website for the Marine Science Program under Travel Grants (http://artsandsciences.sc.edu/seoe/graduate/msci-graduate-student-travel-grants)

Application Deadlines

Travel Dates	Applications Accepted Beginning
CYCLE 1: July 1– September 30	June 1-7
CYCLE 2: October 1– December 31	September 1-7
CYCLE 3: January 1- March 31	December 1-7
CYCLE 4: April 1– June 30	March 1-7

Requests for travel support must be submitted before the meeting and by the general deadlines shown above.

Application Procedure

- A completed Graduate Student Travel Fund Award form (available as PDF file on the MSCI homepage) identifying the professional meeting s/he wishes to attend, the title of the paper, and an itemized estimate of the total travel expenses the student will incur;
- A copy of the abstract submitted to the meeting;
- Statement of ALL other sources of support for this meeting;
- Signed statement from the advisor regarding available funding.

Travel Grant Awards

The Graduate Studies Director will review travel assistance requests and make recommendations to the Director of the Program. Students that do not fully adhere to Program requirements regarding their Program of Study or are not in good standing are not eligible for this assistance. Evidence of funding from other sources is viewed favorably. No reimbursement will be made for expenses until/unless the student submits a formal acceptance letter/email from the meeting organizer and a copy of the abstract. If awarded a travel grant, the student must submit a Travel Authorization (TA) form before the trip and a Travel Reimbursement Voucher (TRV) form after incurring expenses to receive the money awarded.

Graduate Student Awards and Selection Process

Graduate student awards are designed to recognize excellence in MS and PhD research, graduate teaching, and excellence in presentation of scientific research to a general university audience. The Marine Science Program invites graduate students to compete for the following awards on an annual basis:

1. Outstanding Publication Award
2. Outstanding Teaching Assistant Award

In addition, Marine Science Faculty judges will evaluate student presentations to identify participants in the university-wide competitions as part of Graduate Student Day:

3. Graduate Student Day Oral Presentation Competition
4. Graduate Student Day Poster Presentation Competition

Each award is evaluated independently of all the other awards. Therefore, a graduate student must be explicitly nominated for each award to be considered. Hence, nomination for one award does not imply nomination for, or consideration, for any other award. Self-nominations are accepted and encouraged.

To make the award process as fair and objective as possible, and to maintain consistency in the review process from year to year, the following standardized award criteria and procedures have been established. Students must meet the stated eligibility requirements for each award for which they are nominated

Selection of award winners will be based on the recommendation of one or more selection committees assembled by the Graduate Director specifically for this purpose and in accordance with the attached guidelines. These committees will report their recommendations to the Marine Science Director, who will announce the awards.

The requisite Oral and Poster presentations required as part of the award competition shall be scheduled during the normal Marine Science seminar series, which may be extended. All applicants and nominees must be in good standing with the Marine Science Program.

Selecting a Major Professor

Prior to enrollment in the Marine Science Program, all students are strongly encouraged to contact MSCI Faculty regarding their willingness to serve as a Major Professor. Students will not be accepted into the Program unless a Major Professor is agreed upon by both the incoming student and the Faculty member. Regular graduate faculty on the Columbia campus who are Jointly Appointed or Associate faculty of the Marine Science Program may serve as a major professor for MS and PhD degree students. Research and Adjunct faculty who are associate faculty of the Marine Science Program and hold the doctoral degree may serve as a major professor only for MS degree students and only by prior written consent by a majority of the MSCI Graduate Studies Committee and with appointment as a temporary graduate faculty member by the Dean of the Graduate School. A Jointly appointed faculty member must serve on the committee as co-advisor for MS degree students who have an off-campus major professor. Meeting all degree requirements is the student's responsibility. The major professor, in consultation with the other advisory committee members, will direct the student's efforts towards successful completion of research goals and provide advice on course selections and other matters. The major professor will also assist the student in selecting the other advisory committee members.

Student Progress Evaluations

The Graduate Studies Committee will review the progress for MS and PhD students *annually*, during the spring semester (April). First year students will be reviewed semiannually in December and April. This review is conducted without the student's major professor present. Matters of concern include, but are not limited to, completion of course requirements, formation and appointment of advisory committees, research requirements, attendance at Marine Science seminars, and personal problems. This review is intended to ensure that students make timely and satisfactory progress towards their degree and to address concerns of the students.

Access to Student Records

Each enrolled student or former student may inspect and review official, non-confidential educational records or files directly related to that student. Standard procedures for access to student records are on file in the Marine Science office. In lieu of the standard procedures, students may obtain certain types of information contained in their records by making inquiry through the Graduate Studies Committee or the student's major professor. Such inquiries should be limited to specific information such as dates, grades, or establishing the presence or absence of pertinent materials. Information otherwise inaccessible to the student will not be communicated to him/her indirectly through such an inquiry.

Appeal Process

Decisions of the Graduate Studies Committee can be appealed to the Program Director. The Program Director can use an appropriate standing committee, or appoint an Appeal Committee to review the appeal. In no case can a faculty member with a vested interest in the issue serve in the appeal review, nor can a committee that made a decision in the issue under appeal serve in the appeal review. The Appeal Committee will make a recommendation for action to the Program Director and that decision will be final.

Representation on Faculty Committees

Graduate student representatives are selected by the Marine Science Graduate Student Association to sit on various graduate committees and to attend Marine Science Faculty meetings. The graduate students elect these representatives from the Marine Science graduate student population. They serve as the official voice of the graduate student body on these committees. Matters of general concern are voiced to the faculty through the Marine Science Graduate Student Association.

Marine Science Seminars

The Marine Science Program conducts weekly seminars during the fall and spring semesters. These seminars provide students the opportunity to meet recognized scientists and to keep abreast of current developments in marine science. All graduate students are required to enroll into MSCI 800 seminar course (zero credit hour) each semester until they graduate and attend a minimum of 75% of the weekly seminars to maintain good standing in the Marine Science Program. A student's standing in Marine Science is considered when the student applies for IAs, travel support and other awards. A sign-up sheet is maintained at every seminar. Exceptions are made for students attending or teaching classes that conflict with seminars, or students conducting off-campus research. A student seeking an exemption from the MSCI 800 seminar course must present a written petition to the Graduate Director at the beginning of the semester for which they seek exemption.

Accelerated Bachelor's Degree / Graduate Degree Study Plan (G-BGPA)

Admission Requirements

The Marine Science Program offers exceptional undergraduate students the opportunity to spend an extra year at USC and earn a Master of Science in Marine Science degree in addition to the Bachelor of Science degree. Qualifying students take a combination of undergraduate and graduate courses in their fourth year and concentrate on graduate work in their fifth year. Students earn their Bachelor's degree in the fourth year and the opportunity to earn the Master's degree in the following, fifth year. The accelerated plan allows students to count 12 credit hours of graduate course work (500 level and above) towards both the undergraduate and graduate degree. As research experience is essential for a Master's Degree, candidates for this program must arrange to participate in a research project in a faculty member's laboratory prior to applying for the Accelerated Bachelor's/Graduate Degree Plan. Students interested in the Accelerated Bachelor's/Graduate Degree Plan should make an appointment with the Director of Undergraduate Studies for Marine Science as soon as possible (ideally, during sophomore year). The following factors will be considered for admission of students wishing to enter the Accelerated Bachelor's/Graduate Degree Plan:

1. Cumulative and undergraduate major GPA of 3.5 or better;
2. A faculty sponsor willing to serve as research advisor;
3. Proposed research plan and area of research;
4. Number of credit hours completed at the time of application (90 minimum);
5. Maturity of the student;
6. Availability of research support;
7. Approval of the Graduate Studies Committee.

Students should apply for this plan during the spring of their junior year or in the semester in which they reach 90 undergraduate credit hours. Recommendation by the program, approval by the Graduate Studies Committee, and approval by the Graduate School confers admission to the Accelerated Bachelor's/Graduate Degree Plan only (signifying a student's intent to pursue a graduate degree); students must also apply to the graduate program through the regular admission process* and be accepted by the USC Graduate School to graduate study. Admission to the Accelerated Bachelor's/Graduate Degree Plan does not guarantee admission to the Master's program, nor does the Marine Science Program guarantee Instructional Assistantships or other financial support to students admitted to the Accelerated Bachelor's/Graduate Degree Plan.

*Note: Apply to the Marine Science graduate program via the USC Graduate School: http://gradschool.sc.edu/gap/. It is recommended the student file the complete application for admission to the M.S. in Marine Science program, including letters of recommendation and GRE scores, by February 1st of the student's senior year.

Application Process

To apply(see NOTE) to the Accelerated Bachelor's/Graduate Degree Plan, submit the following documents as a packet, using the attached Accelerated Bachelor's/Graduate Degree Plan Checklist as a cover sheet, to the SEOE Student Services Office in PSC 108 by the recommended deadline of February 1 of the student's junior year.

1. Application for Admission to the Accelerated Bachelor's/Graduate Degree Plan (*GBGPA form*) available on the Graduate School website: http://gradschool.sc.edu/forms/;
2. Current transcript (printed from VIP);
3. CV/Resume;

4. Statement explaining why you want to enter the Accelerated Bachelor's/Graduate Degree Plan (~ 2 paragraphs);
5. Brief overview of your research plan (2 page maximum), including details of available research support, if any; and
6. Written letter of support from the student's faculty advisor.

Once admitted to the Accelerated Bachelor's/Graduate Degree Plan, students must complete the Course Work Authorization (*G-BGCA* form) available on the Graduate School website in order to register for courses under the Plan: http://gradschool.sc.edu/forms/.

NOTE:
Undergraduate students participating in Senior Privilege or the Accelerated Bachelor's/Graduate Degree Plan may opt for only one program. If a student has been approved to participate in one of these programs, that student is prohibited from applying for, or taking courses under, the other.

Master of Science

Required Courses and Credit Hours

A Master of Science student is required to complete a minimum of 30 credit hours, including 12 hours of core courses, 6 hours of Thesis Preparation (799) and one additional course numbered 700 or above. The remaining credits may be earned in courses numbered above 500. Students must achieve and maintain an overall GPA of 3.00 on all courses taken for graduate credit and complete each of the core courses with a minimum grade of B (see page 5). **All students must register for MSCI 800 during each semester.**

Advisory and Examination Committee Appointment
(by end of second semester)

Students will select two thesis readers in consultation with their major professor *within the first year of graduate study*. The major professor and the two readers constitute the student's advisory and examination committee, which will be chaired by the major professor. The major professor and at least one of the other committee members must be a Marine Science Jointly Appointed faculty member. One member of the committee must be from outside the Jointly Appointed Marine Science faculty. Thesis committees should be composed of faculty from the Columbia campus. Only in unusual cases will faculty from another accredited institution be selected based on expertise relevant to the research area of the project. Such members must have a PhD and be actively involved in research, demonstrated through their recent publication record.

The MSCI Program will not pay for transportation of outside members to attend committee meetings or exams. The Graduate Studies Director must approve substitution of individual committee members or reconstitution of the committee itself. Such substitution should be made at least 30 days before the thesis defense, with the student's concurrence. In cases of a committee member's absence from the defense (e.g. due to illness or travel), the Graduate Studies Director must appoint a faculty member with concurrence of the major professor and the student to substitute for the absent member. This should be done as far in advance as possible before the defense. In no case will a defense begin prior to the student's full understanding of the composition of the examining committee. Participation via videoconference is acceptable by the program in cases when a committee member cannot participate on site. Securing such videoconferencing facilities is the responsibility of the student.

Master's Degree Program of Study
(by end of second semester)

Students are required to complete a Master's Degree Program of Courses Form *no later than the end of the second semester of graduate study*. This form can be obtained from The Graduate School website under Forms Library (MPOS) or by the Graduate Coordinator and must be signed by the Thesis Advisor and the Graduate Studies Director. When the Marine Science Graduate Studies Committee approves the proposed program of study, the student becomes an official degree candidate.

Thesis Qualifying/Comprehensive Exam
(during first year of graduate study)

Students are required to present a proposed research plan (Thesis Qualifying/Comprehensive Exam) to their advisory committee *during the first year of graduate study*. The exact format of the exam will be determined in consultation with the advisory committee, and will be open to the public. The exam includes both a written (not more than 5 pages) and oral component. The written research plan must be submitted to all advisory committee members five days prior to the student's oral thesis qualifying/comprehensive exam. The major professor will send a letter of thesis qualifying/comprehensive exam approval form to the Graduate Studies Director. This form may be found on the SEOE Graduate Student website. All committee members must complete assessment forms to accompany the exam form, which is due within 7 days following the exam. **A public announcement of the exam must be posted via email, outside PSC 108, and PSC elevators at least 7 days prior to examination date.**

Thesis Defense
(presentation no earlier than sixty (60) days after successful MS Thesis Qualifying Exam)

A written thesis is required of all Master's students. Students must successfully defend their thesis in a final examination according to the calendar approved by the Graduate School. Before beginning to work on the thesis, students should obtain and read a copy of the Graduate School's general thesis guidelines from http://gradschool.sc.edu/students/thesisdiss.asp?page=td. Students are responsible for adhering to the rules and regulations of the Graduate School.

As a portion of the oral defense of the thesis, the material will be presented in a public seminar. *This presentation must take place no earlier than sixty (60) days after successful completion of the MS Thesis Qualifying Exam*. *The student must notify the Graduate Studies Director of an impending defense in writing (an email is sufficient) not less than 14 days prior to the scheduled defense date*. This notification must include an abstract of the thesis and a copy of the announcement to be placed in the student's file. The student is ultimately responsible for adequate public announcement of the defense. A public announcement of the exam must be posted via email, outside PSC 108, and PSC elevators at least 7 days prior to defense date. Announcements should include the student's name, name of the major professor, the title and abstract of the thesis, and information on time, date and place of the defense. *A complete draft of the written thesis must be submitted to all advisory committee members at least five working days prior to the student's oral defense.*

At the end of the seminar, the audience will be excused and the defense will continue with only the candidate, the advisory committee and interested members of the faculty present. Only members of the committee can vote on passage of the candidate. The defense committee may differ from the advisory committee (if, for instance, a regular member is traveling or otherwise unable to attend). In either case, the Graduate Studies Director and the Dean of the Graduate School must approve the committee composition. Upon successful completion of the Thesis Defense Exam and completion of the written Thesis, the student will submit a signed Thesis Signature and Approval Page (G-TSF) found on The Graduate School website under the Forms Library, to the Graduate Studies Director. All committee members must complete assessment forms to accompany the defense form, which is due within 7 days following the exam.

Once signed by the Graduate Studies Director, the form may be picked up by the student to deliver to The Graduate School or the form will be sent from the Student Services Office in PSC 108 via campus mail to The Graduate School. An electronic copy of the thesis must be filed with the Graduate School. Thesis guidelines and deadline dates for the semester of graduation are

available from the Graduate School. **An electronic copy of the thesis must be provided to the Graduate Studies Director.** It is a courtesy to provide members of the advisory committee with a complete electronic copy. *Not later than 20 days before graduation, a final approved thesis is submitted via the ETD Process*. See The Graduate School website at http://gradschool.sc.edu/students/thesisdiss.asp.

Progression from MS to PhD Degree

Students who wish to pursue the PhD degree after completion of the Master's in the Marine Science Program are not automatically considered for admission. They must submit a formal application to the Marine Science Graduate Program, which will recommend action by the Graduate School. No student will be accepted into a PhD program unless a faculty member agrees to serve as major professor for that student.

Doctor of Philosophy

Students admitted to the PhD program often hold a Master's degree. Qualified students may petition the Graduate Studies Committee to proceed directly toward the PhD degree after completion of a Bachelor's degree. Students must select a major professor before the end of the first semester of enrollment in the PhD program.

Required Courses and Credit Hours

A doctoral student is required to complete a minimum of 60 credit hours (including 12 hours of 899, Dissertation Preparation) beyond the baccalaureate, or a minimum of 30 credit hours (including 12 hours of 899) beyond the master's degree. The core courses (12 hours) are required unless exempted (see page 5). Students must complete at least half of their credit hours, exclusive of 12 hours of 899, in courses numbered 700 and higher. Students must achieve and maintain an overall GPA of 3.00 on all courses taken for graduate credit.

PhD Advisory and Examination Committee Appointment
(filed within 12 months of enrollment in PhD program)

Students, in consultation with their major professor and approved by the Graduate Studies Director, will select an advisory and examination committee of four or five members (includes the Major Professor) *within 12 months of enrollment in the PhD program*. The committee must include at least one Jointly Appointed faculty member if the Major Professor is Jointly Appointed, or at least two Jointly Appointed faculty if the Major Professor is an Associate faculty member. The committee must include one outside member who is: 1) a faculty member in another department or program at the University, 2) a faculty member at another institution, or 3) a qualified professional from the private or governmental sectors. External members must be nominated as Temporary Graduate Faculty by the Graduate Studies Director and approved by the Dean of the Graduate School on the basis of their qualifications, as evidenced by credentials and the justification submitted with the nomination. The form is available on The Graduate School website under Forms Library (G-TAN). The MSCI Program will not pay for transportation of outside members to attend committee meetings or exams. Participation via videoconference is acceptable by the program in cases when a committee member cannot participate on site. Securing such videoconferencing facilities is the responsibility of the student.

PhD degree Program of Study
(filed within 2 weeks of the Qualifying Exam)

Students must file a Doctoral Program of Study Form, found on The Graduate School website under Forms Library (DPOS) with the Graduate School shortly after appointment of their advisory committee. The advisory committee members must approve and initial the program of study. Doctoral students are admitted to candidacy following completion of the Marine Science core courses with a grade of B or better and approval of their Doctoral Program of Study (DPOS), and satisfactorily completing the Dissertation Qualifying Exam. If a student does not meet the core course grade requirement, the student will have *one* opportunity to pass a written examination in that core area by taking the Core Course Exemption by Examination (CCEE) for certification of exemption from the core course requirement (see page 5).

Dissertation Qualifying Exam to the Advisory Committee
(filed within 24 months of entering the PhD program)

Students are required to present a public oral and written research plan to their advisory committee *within 24 months of entering the PhD program*. The oral presentation may be open to the public at the discretion of the examining committee. **A public announcement of the exam must be posted via email, outside PSC 108, and PSC elevators at least 7 days prior to examination date.** Presentations should be focused on the details of the proposed research rather than presented to a general audience. The written research plan should include the background, rationale, hypotheses and approaches for the student's doctoral research project (not more than 8 pages). The written research plan must be submitted to all advisory committee members at least five working days prior to the student's oral presentation of their Dissertation Qualifying Exam. The major professor will send a letter of qualifying exam approval signed by all committee members to the Graduate Studies Director. The form may be found on the SEOE Graduate Programs website. It is the responsibility of the student to organize annual meetings with the Advisory Committee to present and discuss research goals, hypotheses and progress. All committee members must complete assessment forms to accompany the qualifying exam form, which is due within 7 days following the exam.

Comprehensive Examination
(filed by the end of third year of entering PhD program and at least six months prior to dissertation defense)

Students must take a comprehensive examination *by the end of their third year of entering the PhD program and at least six months prior to their dissertation defense. Though The Graduate School requires the Comprehensive exam to be completed not less than 60 days prior to graduation, the Marine Science Program requires that the Comprehensive Exam be taken at least six months prior to the dissertation defense*. The examination is normally scheduled when a candidate has completed all or most course requirements. It consists of both written and oral components and is administered by the student's Advisory Committee acting as the Dissertation Examination Committee. *The written component of the exam is a formal research proposal (NSF or NASA format; 15 pages with a budget) prepared by the student and submitted to the Advisory Committee at least seven days prior to the oral exam*. The oral exam will include a 15-20 minute student presentation of the proposal followed by comprehensive questions from members of the advisory committee. **A public announcement of the exam must be posted via email, outside PSC 108, and PSC elevators at least 7 days prior to examination date.**

The major professor will send a letter of recommendation for action to the Graduate Studies Director. The form is available on the SEOE Graduate Programs website. If a student's performance is unsatisfactory, the letter of recommendation should specifically state the student's performance on both the written and oral components of the exam. The student may retake the written and/or oral component(s) of the Comprehensive Examination after a minimum waiting period of six months, but no later than nine months after the oral exam. A second failure disqualifies the student from the PhD Program. All committee members must complete assessment forms to accompany the defense form, which is due within 7 days following the exam.

Peer-reviewed Publication
(filed before dissertation defense)

All doctoral candidates are required to have a first-authored, peer-reviewed article from their doctoral research published, in press, or accepted for publication by the date of their dissertation defense. The article must be submitted to the major professor and advisory committee members for comment before submission for publication. A published article or letter of documentation from the publisher stating an *article is in press or accepted for publication should be presented to the student's advisory committee before the dissertation defense*. The student must submit a complete citation of the article (authors, title, journal name or book title, publication status) including an abstract, *to the Graduate Studies Director at least seven days prior to the date of the dissertation defense*. The form is available on the SEOE Graduate Programs website. Students who have an article in review for at least six months prior to the date of the dissertation defense can petition the Graduate Studies Director and Graduate Committee to accept the manuscript under review as satisfying this requirement. The petition should include a copy of the paper in review and documentation from the publisher showing the date the article was submitted for review.

Dissertation Format Check / Dissertation Defense
(preliminary format check is due not later than five weeks before graduation. Dissertation defense must be completed not less than 30 days before graduation)

A dissertation is required of all PhD candidates, and students must successfully defend their dissertation in a final examination according to the calendar approved by the Graduate School. Students are responsible for adhering to the rules and regulations of the Graduate School.

The Graduate School indicates that submission of the dissertation draft is due to the Graduate School for a *preliminary format check not later than five weeks before graduation*. *Dissertation defense must be completed not less than 30 days before graduation.* Final revisions required by Committee and the Graduate School are made by student. Visit the Thesis & Dissertation portal to view the format guide, etd samples, templates, and to submit your document. See The Graduate School Thesis & Dissertation website: http://gradschool.sc.edu/students/thesisdiss.asp

The student must notify the Graduate Studies Director of an impending defense in writing (an email is sufficient) not less than 14 days prior to the scheduled defense date. This notification must include an abstract of the dissertation and a copy of the announcement to be placed in the student's file. **A public announcement of the defense must be posted via email, outside PSC 108, and PSC elevators at least 7 days prior to examination date.**

The defense is open to all faculty and students. The student is ultimately responsible for adequate public announcement of the defense. Announcements should include the student's name, name of the major professor, the title and abstract of the dissertation, and information on the time, date and place of the defense. Students must also submit an announcement through The Graduate School's Graduate management System (GMS) at https://app.gradschool.sc.edu/gms/student/ .

A complete draft of the written thesis must be submitted to all advisory committee members at least five working days prior to the student's oral defense.

The student will present their research in a public seminar (~45 minutes). At the end of the seminar, the defense is open for questions from the general audience. The general audience will be excused following questions, and the defense will continue with only the candidate, the advisory committee and interested members of the faculty present. Only members of the committee can vote on passage of the candidate. Upon successful completion of the Dissertation Exam and completion of the written Dissertation, the student will submit a signed Dissertation Signature and Approval Page (G-DSF) found on The Graduate School website under the Forms Library, to the Graduate Studies Director. Once signed by the Graduate Studies Director, the form may be picked up by the student to deliver to The Graduate School or the form will be sent from the Student Services Office in PSC 108 via campus mail to The Graduate School.
The defense committee may differ from the advisory committee (if, for instance, a regular member is traveling or otherwise unable to attend), but must include a minimum of four members. In either case, the Graduate Studies Director and the Dean of the Graduate School must approve the committee composition. An electronic copy of the dissertation must be filed with the Graduate School. **An electronic copy of the dissertation must be provided to the Graduate Studies Director.** Deadline dates for the semester of graduation and dissertation guidelines are available from The Graduate School on the Calendar. Electronic copies must also be presented to the student's major professor and the Marine Science Program. It is a courtesy to provide members of the advisory committee with electronic copies. **All** committee members must complete assessment forms to accompany the defense form, which is due within 7 days following the exam.

Coursework Expiration / Re-certification Process

All work to be applied toward the Ph.D., exclusive of the M.S. degree portion, should be completed within the eight years prior to graduation. Courses listed in the Program of Study that have expired can be re-certified through an application to the Graduate School. As part of the recertification process, a faculty member from the Marine Science Program (usually the faculty member teaching the course to be re-certified) will have to assess the current knowledge of the student requesting the re-certification. This assessment can be either through an interview, oral, written exam, or a combination of the above.

Jointly Appointed Faculty

Jointly Appointed Marine Science Faculty have their tenure homes in the Departments of Biological Sciences, Chemistry and Biochemistry, Earth and Ocean Sciences, and Geography. Most of their service and all of their teaching duties are within the Marine Science Program. They form the core Faculty that teach the Marine Science major courses as well as advise undergraduate and graduate students in the Program. This highly interdisciplinary group therefore bridges more traditional academic boundaries and is involved in the development of a continually evolving academic curriculum that seeks to expose our Marine Science undergraduate and graduate students to research at the forefront of scientific discovery.

Claudia Benitez-Nelson, Ph.D.
Professor
Marine Biogeochemistry
Chemical Oceanography

Ronald Brenner, Ph.D.
Director, Professor
Marine Biogeochemistry
Biological Oceanography

Subra Bulusu, Ph.D.
Professor
Physical Oceanography / Satellite Oceanography

Jean Ellis, Ph.D.
Associate Professor
Coastal & Aeolian Processes
Coastal Policy

Blaine Griffen, Ph.D.
Associate Professor
Marine Ecology / Benthic Ecology

Jay Pinckney, Ph.D.
Professor
Marine Ecology / Ecosystem Processes

Joe Quattro, Ph.D.
Professor
Marine Population Genetics

Tammi Richardson, Ph.D.
Professor
Phytoplankton Ecology

Ryan Rykaczewski, Ph.D.
Assistant Professor
Zooplankton Ecology / Modeling

Howie Scher, Ph.D.
Assistant Professor
Geochemistry / Paleoceanography

George Voulgaris, Ph.D.
Professor
Coastal Processes and Sediment Dynamics

Sasha Yankovsky, Ph.D.
Associate Professor
Physical Oceanography

Lori Ziolkowski, Ph.D.
Assistant Professor
Marine Organic Geochemistry, Climate Change