



GRADUATE AND FACULTY HANDBOOK 2013-2014

MARINE - ESTUARINE - AND ENVIRONMENTAL SCIENCES (MEES) PROGRAM



UNIVERSITY OF MARYLAND CENTER FOR ENVIRONMENTAL SCIENCE (UMCES)

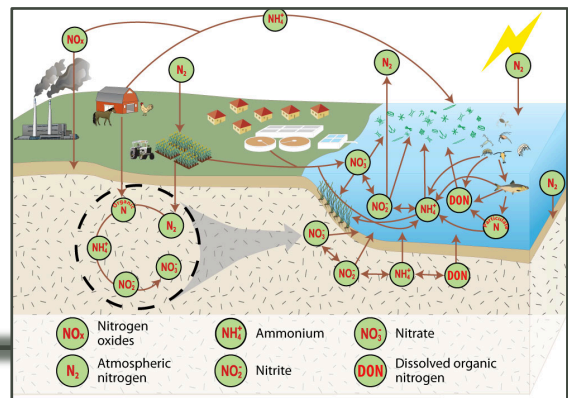
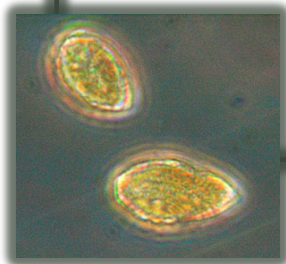




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Introduction

The purpose of this document is to provide a helpful resource for students and faculty for information pertinent to academic, research, and the educational/social activities of the UMCES. Some of the information contained in this document is available from a number of alternative sources, particularly the MEES, University of Maryland College Park or individual laboratory websites, but it has been combined here to make life easier for the members of the Horn Point community. The hope is that this handbook will help new students and employees adjust to life at UMCES and will help returning students and faculty through the many policies and procedures of our associated campuses.



The Center for Environmental Science

The University of Maryland Center for Environmental Science (UMCES) is one of 13 institutions of the University System of Maryland. UMCES has research locations located throughout the state. The Horn Point Laboratory is one of its laboratories. The other research laboratories are The Chesapeake Biological Laboratory (Solomons), The Appalachian Laboratory (Frostburg) and the Institute of Marine and Environmental Technology (Baltimore). In addition to the laboratories, UMCES oversees administration of the Maryland Sea Grant Program (College Park) and maintains the Integration and Application Network Center (Annapolis).

UMCES is the only research unit of the University System of Maryland. While research is the primary mission of UMCES, graduate education is of central importance. Although there are a number of avenues for graduate students associated with UMCES, most graduate students are enrolled in the MEES program, which is jointly administered, and degrees jointly awarded by UMCES and the University of Maryland at College Park.

The Horn Point Laboratory is located on the banks of the Choptank River, a tributary of the Chesapeake Bay on Maryland's Eastern Shore. The laboratory is interdisciplinary with faculty engaged in research on the biology, chemistry, physics, and ecology of organisms and ecosystems from wetlands and estuarine waters of the Chesapeake Bay to the continental shelf and open waters of the world's oceans.



Located where the Patuxent River meets the Chesapeake Bay, **The Chesapeake Biological Laboratory (CBL)** has long been a national leader in fisheries, environmental chemistry and toxicology, and ecosystem science and restoration ecology.

The Appalachian Laboratory (AL) is located in the mountains of western Maryland, in the headwaters of the Chesapeake Bay watershed. Faculty at the Laboratory conduct research in aquatic ecology, landscape and watershed ecology, conservation biology and restoration ecology, behavioral and evolutionary ecology.



The Institute of Marine and Environmental Technology (IMET) in Baltimore focuses on developing biotech-based solutions to protecting marine ecosystems.

The Marine Estuarine and Environmental Sciences Program:

Program Overview

The Marine-Estuarine-Environmental Sciences (MEES) Program is a cross-campus graduate program leading to M.S. and Ph.D. degrees. Although some students matriculate through other programs, almost all students at Horn Point are enrolled through MEES. The mission of the MEES Program is to train graduate students in the environmental sciences.

The title of the program emphasizes the strength in marine and estuarine sciences, although the program spans environmental science as a whole, irrespective of habitat. The interests of students in the program are diverse, but generally center on some aspect of the interaction between biological and physical or chemical systems. The analysis of this interaction may be anything from a study of molecular mechanisms to an assessment of the economics of an environmental impact. To ensure that all students in the program have some understanding of the breadth of information in the field of environmental sciences, each student is required to have course work in a variety of areas.

The MEES Program is interdisciplinary; its faculty consists of members from numerous units within the University System of Maryland. In most cases, students within the MEES Program work in the laboratory of their research advisor in the department or unit to which the advisor belongs.

Courses taken by MEES students are taught on all campuses of USM and at the research laboratories. A course taught anywhere within USM is available to any graduate student registered at any campus through intercampus enrollment. Many courses are taught on interactive video, making them available to students without traveling.

Areas of Specialization

The interests of faculty and students within the MEES Program have led to six formally defined Areas of Specialization (AOS), from which a student may choose. These are: Ecology, Environmental Chemistry, Environmental Molecular Biology and Biotechnology, Environmental Science, Fisheries Science, and Oceanography. Each student will choose an AOS when applying, and both admission and program requirements will depend on the AOS and the student's background and interests.

Ecology

The MEES Program provides access to a strong curriculum of interdisciplinary graduate training and research in ecology. Ecology is a broad discipline encompassing both terrestrial and aquatic environments. Specific areas of study include behavioral, community, evolutionary, marine, benthic, limnological, systematic, and physiological ecology. Variations and/or combinations of

one or more of these subdisciplines are common (e.g., marine benthic community ecology as one area of study or the evolution of terrestrial communities as another). Students successfully completing this Area of Specialization could go on to academic appointments in a variety of departments (e.g., Environmental Sciences, Ecology, Biology, Zoology, Botany, etc.), or work for environmental consulting companies, as well as federal or state government agencies.

Environmental Chemistry

The objective of the Environmental Chemistry Area of Specialization (AOS) is to train research scientists to apply basic chemical principles to the study of the environmental behaviors of natural and anthropogenic chemicals. Environmental chemistry includes interdisciplinary studies of various realms such as geochemistry, transport processes, and toxicology to determine the fate and effects of chemicals in the natural environment. Students graduating from MEES through this AOS will find professional positions in Federal, state, and local government agencies (such as EPA, FDA, NIH), private chemical and manufacturing industries, academic institutions, and consulting firms.

Environmental Molecular Biology/Biotechnology

Molecular approaches pervade every biological discipline. Expertise within MEES includes molecular endocrinology of fish growth, development and reproduction; methods of drug delivery; environmental stressors contributing to fish physiological dysfunction and oncogenesis; mechanisms and stressors of nitrogen fixation; molecular models of marine surface colonization; molecular cues of organism-organism interaction; and invertebrate immunity. Faculty in this area frequently study macromolecular-environmental interactions using recombinant DNA and hybrid approaches. The Environmental Molecular Biology and Biotechnology Area of Specialization encourages interaction between campuses and is synergistic with other AOSs.

Environmental Science

This Area of Specialization provides broad training in the environmental sciences. It is offered for students who do not want to specialize to the extent the other Areas of Specialization require, but would like to gain experience and take courses in a variety of scientific, economic, and social disciplines related to the natural environment. These requirements are also very appropriate for students wishing to specialize in environmental management.

Fisheries Science

Fisheries Science is multidisciplinary, drawing expertise from the biological, physical, and social sciences. Fisheries scientists study populations and communities of aquatic resources, their responses to exploitation, and changes in environmental conditions, and their management. Research is quantitative and may be either basic or applied. The multidisciplinary nature of fisheries science requires broad training in areas that may include ecology, oceanography, aquaculture, economics, mathematics, seafood technology, pathology and diseases, and management science. Most career opportunities in fisheries science are in the government and academic sectors, although in recent years, private businesses, research firms and aquaculture

businesses offer increasingly diverse career choices. Course work and research undertaken by MEES students emphasize three fields of study: Fisheries Ecology, Fisheries Management, and Fisheries Aquaculture.

Oceanography

In the past decade, the University System of Maryland has emerged as a nationally and internationally recognized center for oceanographic research. The Horn Point Laboratory (HPL) and the Chesapeake Biological Laboratory (CBL), and the Meteorology Department at the University of Maryland, College Park (UMCP) are most active in this field, with the research of at least 25 faculty focusing on oceanography.

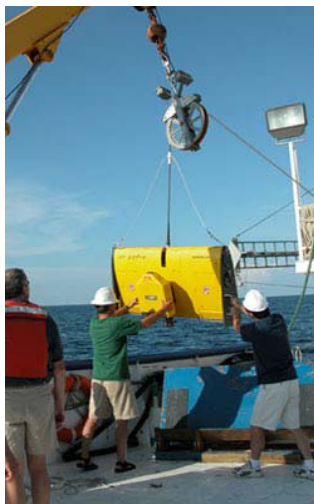
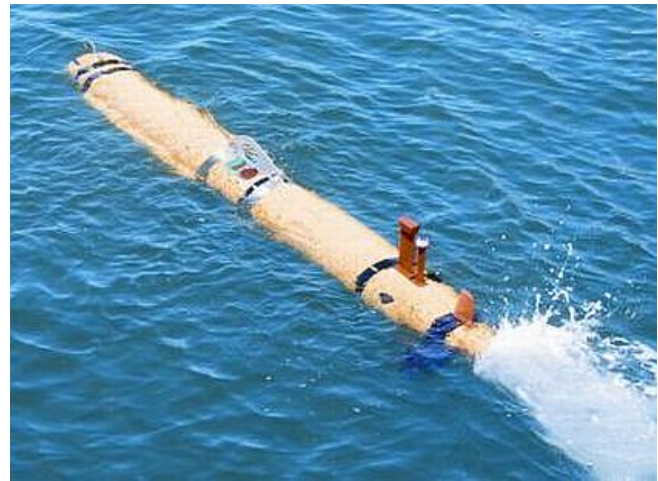
Students in this AOS have access to extensive oceanographic facilities throughout the USM as well as the opportunity to work with some of the University's outstanding faculty in oceanography. Fundamental courses in the three major sub-fields of oceanography are required to provide interdisciplinary breadth, but a degree in the Oceanography AOS emphasizes the student's independent research. Students graduating from the Oceanography AOS can expect to find jobs in universities, oceanographic laboratories, government agencies, and consulting firms.

Graduate Student Milestones

Admission and Prerequisites

Applicants will be considered for admission and advising on all campuses by faculty associated with an appropriate Area of Specialization, based on the applicant's requests. Prospective students may apply through either the Graduate School at the University of Maryland Baltimore County (for UMBC and UMAB), the Graduate School at College Park, or the Graduate School at the University of Maryland Eastern Shore. In general, a student who has identified a specific member of the faculty with whom to work should apply to the campus where that faculty member is affiliated.

Students who are admitted will be advised whether they have any courses that must be completed to fulfill the prerequisites of the MEES program. All prerequisite courses must be completed within a student's first year after admission. Extensions can be granted by the MEES Director if a course is not available to the student in the first year.



Key Facts

MEES Website: www.mees.umd.edu

MEES Director: Dr. Ken Paynter

MEES Assistant : Debbie Morrin-Nordlund

Prerequisites

<p>ECOLOGY A Bachelor's degree in the natural or life sciences (i.e., equivalent to UM undergraduate Biology degree):</p> <ol style="list-style-type: none"> 1. Two semesters of Calculus 2. Two semesters of Introductory Chemistry 3. Two semesters of Organic Chemistry or Biochemistry 4. Two semesters of Physics 5. Two semesters of Introductory Biology (or high placement test, high GRE Biology scores) 6. One Ecology course and two other Advanced Biology courses 	<p>ENVIRONMENTAL CHEMISTRY A Bachelor's degree in the natural sciences or engineering, including:</p> <ol style="list-style-type: none"> 1. Two semesters of Calculus 2. Two semesters of Physics 3. Two semesters of General Chemistry 4. Two semesters of Biology 5. Two semesters of Organic or other Advanced Chemistry (e.g., Biochemistry)
<p>ENVIRONMENTAL MOLECULAR BIOLOGY/BIOTECHNOLOGY A Bachelor's degree in the natural sciences, life sciences, or engineering including:</p> <ol style="list-style-type: none"> 1. Four semesters of Biology, including Biochemistry 2. Two semesters of Physics 3. Four semesters of Chemistry 4. Two semesters of Calculus 5. Two semesters of Molecular Biology/Molecular Genetics 	<p>ENVIRONMENTAL SCIENCE An undergraduate degree in the natural sciences or engineering including:</p> <ol style="list-style-type: none"> 1. Two semesters of Calculus 2. Two semesters of Introductory Chemistry 3. Two semesters of Physics 4. Two semesters of Introductory Biology (or high placement test, high GRE Biology scores) 5. An Ecology course and other advanced Environmental Science courses are recommended
<p>FISHERIES SCIENCE A Bachelor's degree in the natural sciences or other field with a strong quantitative emphasis, including</p> <ol style="list-style-type: none"> 1. Two semesters of Calculus 2. Two semesters of Introductory Chemistry 3. Two semesters of Organic Chemistry, Biochemistry, or Physics 4. Two semesters of Introductory Biology (or high placement test, high GRE Biology scores) 5. Advanced Biology courses, such as Ecology and Ichthyology, are recommended 	<p>OCEANOGRAPHY <i>Biological Oceanography:</i> A Bachelor's degree in the natural or life sciences (i.e., equivalent to UM undergraduate Biology degree), including:</p> <ol style="list-style-type: none"> 1. One semester of Calculus 2. One semester of Introductory Chemistry 3. One semester of Organic Chemistry or Biochemistry plus one additional semester of one of the above 4. Two semesters of Physics 5. Two semesters of Introductory Biology <p><i>Physical Oceanography:</i> A Bachelor's degree in a physical science, including:</p> <ol style="list-style-type: none"> 1. Two semesters of Calculus 2. Two semesters of Physics 3. One or two additional advanced math courses 4. One or two additional advanced physical sciences courses 5. Two semesters of Introductory Biology and/or Chemistry are highly recommended

Annual Committee Reviews

All MEES students are required to convene a committee meeting at least once per year and at that meeting provide a progress report summarizing their research and coursework to date, including a transcript. Further, a report summarizing the meeting, with a transcript and signatures of all committee members, will be filed with the MEES office within 2 weeks of the meeting. A form for this report is available on the MEES web site. It will be the responsibility of the advisor to see that this is done annually by the student.

Course Requirements

The course requirements differ for each AOS as follows. The MEES website should also be consulted. Students are encouraged to ask the MEES staff should questions arise.

ECOLOGY

1. Population Biology, including mathematical modeling (600 level, 3-4 credits)
2. Ecosystem Ecology and/or Community Ecology (600 level, 3-4 credits)
3. A 400 or 600 level course from one of the other MEES AOSs (from an approved list)
4. A course in Statistics/Biostatistics (600 level for the Ph.D., 400 level for the M.S.)
5. One graduate level seminar for each year in residence (on average)
6. Courses in Experimental Design and Analysis and in Scientific Writing are strongly recommended
7. One course or seminar in the philosophy of science, ethics and/or Environmental Management (a 3-4 credit course can satisfy item 4) (400 or 600 level, 1-4 credits)
8. A specialized field or laboratory based Ecology course (600 level, 3-4 credits)

ENVIRONMENTAL CHEMISTRY

Requirements for students entering 2004 or later (M.S. and Ph.D.):

1. One fundamental and one advanced course in Environmental Chemistry or Geochemistry (one 400-600 level, one 600-700 level, 3-4 credits)
2. One course in Physical Transport Processes (600 level 3-4 credits)
3. One course in Aquatic Toxicology/Ecology (600 level 3-4 credits)
4. One 400 or 600 level course from one of the other MEES AOSs (from an approved list)
5. One course or seminar in Environmental Management, Policy, Ethics, or Philosophy of Science (a 3-4 credit course can satisfy item 4) (400 or 600 level)
6. A course in Statistics/Applied Mathematics (600 level for the Ph.D., 400 level for the M.S.)
7. One graduate level seminar for each year in residence (on average) up to cap
8. One or more courses in Physical Chemistry are strongly encouraged (2-4 credits each)
9. Courses in Experimental Design and Analysis and in Scientific Writing are also recommended

Requirements for students entering prior to 2004 (M.S. and Ph.D.):

1. One course in Environmental Chemistry or Geochemistry (400 or 600 level, 3-4 credits)
2. One course in Physical Transport Processes (400 or 600 level 3-4 credits)
3. One course in Aquatic Toxicology/Ecology (400 or 600 level 3-4 credits)
4. One 400 or 600 level course from one of the other MEES AOSs (from an approved list)
5. One course or seminar in Environmental Management (a 3-4 credit course can satisfy item 4) (400 or 600 level)
6. A course in Statistics/Biostatistics (600 level for the Ph.D., 400 level for the M.S.)
7. One graduate level seminar for each year in residence (on average)
8. One or more courses in Physical Chemistry are strongly encouraged (2-4 credits each)
9. Courses in Experimental Design and Analysis and in Scientific Writing are also recommended

ENVIRONMENTAL MOLECULAR BIOLOGY/BIOTECHNOLOGY

1. One course in Molecular Biology/Genetics (600 level, 3-4 credits)
2. One course in Cell Biology/Physiology (600 level, 3-4 credits)
3. One course in Ecology (400 or 600 level, 3-4 credits)
4. One course in Advanced Chemistry /Biochemistry (400 or 600 level, 3-4 credits)
5. One elective 400 or 600 level course
6. One course or seminar in Environmental Management, Policy, Ethics, or Philosophy of Science (a 2-4-credit course can satisfy item 5) (400 or 600 level)
7. One course in Statistics/Biostatistics (600 level for the Ph.D., 400 level for the M.S.)
8. One graduate level seminar for each year in residence (on average) up to cap
9. Courses in Experimental Design and Analysis and in Scientific Writing are also recommended

Note: For the M.S. degree, only three of the first four requirements must be fulfilled (5-8 are required for all students).

ENVIRONMENTAL SCIENCE

1. One approved course from three of the four distribution areas (biology, chemistry, physical science, management) for M.S. students; and from each of the four distribution areas for Ph.D. students. One of these courses can be at the 400 level, the others will be at the 600 level or above
2. One course in Statistics/Biostatistics (600 level for the Ph.D., 400 level for the M.S.)
3. One graduate level seminar for each year in residence (on average) up to cap
4. One or more courses in computer science or computer applications are strongly recommended
5. Courses in Experimental Design and Analysis and in Scientific Writing are also recommended

FISHERIES SCIENCE

At least 3 of the following 5 courses must be successfully completed by all students entering the Fisheries Science AOS. The requirements may be waived if equivalent course work has been obtained elsewhere, or if the student and his or her Research Advisory committee successfully petition the AOS Committee.

1. Fisheries Science and Management
2. Fisheries Ecology
3. Aquaculture
4. Quantitative Fisheries Science
5. Graduate Level Course in Oceanography (physical, chemical or biological) or Stream Ecology

In addition, the following core courses are required:

6. A 400 or 600 level course from one of the other MEES AOSs (from an approved list, which can include items 2, 4, and 5)
7. One course or seminar in Environmental Management (item 1 or 4 satisfies this requirement; any such 3-4-credit course can satisfy item 6)
8. A course in Statistics/Biostatistics (600 level for the Ph.D., 400 level for the M.S.)
9. Courses in Experimental Design and Analysis and in Scientific Writing are strongly recommended
10. One graduate level seminar for each year in residence (on average).

OCEANOGRAPHY

Biological Oceanography:

1. One 3-credit course in Physical Oceanography (MEES 661 or equivalent)
2. One 3-credit course in Biological Oceanography (MEES 621 or equivalent)
3. One 3-credit course in Chemical Oceanography (CHEM 723 or equivalent)
4. Two 3-credit courses in Oceanography or related fields (400 or 600 level) including: a recommended additional interdisciplinary course, although item 1 above can satisfy the MEES requirement for interdisciplinary depth
5. One course in Statistics/Biostatistics (600 level for Ph.D. and 400 level for M.S.)
6. One course or seminar in Management, Scientific Philosophy or Ethics
7. One graduate level seminar for each year in residence (on average) up to cap
8. Courses in Experimental Design and Analysis and Scientific Writing are recommended.

Physical Oceanography:

1. One 3-credit course in Physical Oceanography (MEES 661 or equivalent)
2. One 3-credit course in Biological Oceanography (MEES 621 or equivalent)
3. One 3-credit course in Chemical Oceanography (CHEM 723 or equivalent)
4. Two 3-credit courses in Oceanography or related fields (400 or 600 level) including: a) one course in rotating fluid dynamics, and b) one course in non-rotating fluid dynamics

Key Facts

www.testudo.umd.edu is the source for:

course registration
class offerings
academic calendar
account information
transcript requests
grades

Comprehensive Examinations

All PhD students are required to pass a comprehensive exam. The exam is typically taken at the end of the fourth semester, and no later than the end of the fifth semester. The format for the comprehensive exam varies slightly between AOS tracks. Students should consult their advisor for the specific format of his/her exam, but the general guidelines are as follows.

The comprehensive examination generally consists of both a written (generally not to exceed 5 consecutive 6 hour days) and an oral (not to exceed 4 hours) examination. The written examination is taken first, with scheduling of the subsequent oral examination contingent on successful completion of the written exam. Each Advisory Committee member may submit candidate questions to the student's advisor, who is responsible for collating the questions, checking for excessive overlap and necessary breadth in topics, and insuring that the written examination is of appropriate length. Each question in the written examination may be closed book, open book, or a combination, as decided committee member writing the question.

The student's responses to the written examination are distributed to the Advisory Committee members for evaluation. Generally, the student's responses to the written examination questions are evaluated by the committee as 'unsatisfactory', 'satisfactory but requiring further elaboration', or 'satisfactory'. If the majority of the committee rates the responses in the latter two categories, then the oral examination may be scheduled. If the majority of rates the responses 'unsatisfactory', the student has failed the written examination and must retake and pass a new written examination at a later date.

The oral portion of the comprehensive examination is designed to probe in more detail the student's responses to the written examination. It is designed to assess how a student thinks, not just the facts the student may or may not know. Topics on the oral exam are not limited to those of the written exam.

The composition of the Advisory Committee and the administration of the Ph.D. comprehensive examination must follow the rules of the MEES program and the institution's Graduate School

The areas of examination include

ECOLOGY

The areas of examination include *three core areas* and *two additional areas*:

Core Exam Areas

Three of four comprehensive exam areas:

1. Community Ecology
2. Ecosystems
3. Evolution
4. Population Ecology

Additional Exam Areas

Two of four comprehensive exam areas:

1. Physiological Ecology
2. Statistics and Experimental Design
3. Ecological Energetics
4. Quantitative Ecology

ENVIRONMENTAL CHEMISTRY

The suggested areas of examination are:

1. Environmental chemistry and geochemistry
2. Physical transport processes
3. Environmental toxicology and/or ecology
4. Experimental design and statistical analysis
5. Environmental management/applied science

ENVIRONMENTAL MOLECULAR BIOLOGY/BIOTECHNOLOGY

The suggested areas of examination are:

1. Biochemistry and Biophysics
2. Molecular Genetics and Evolution
3. Statistics and Modeling
4. Molecular Biology and Biotechnology
5. Physiology and Pathobiology
6. Microbial Ecology
7. Microbial Genetics and Physiology
8. Molecular Approaches to Fisheries and Aquaculture

ENVIRONMENTAL SCIENCE

The suggested areas of examination are as follows. Ph.D. students should be examined in *five* of these *seven* areas, with General Ecology/General Environmental Science required to be one of the *five*.

1. General Ecology/General Environmental Science
2. Natural Resource Management
3. Environmental Chemistry
4. Statistics and Modeling
5. Environmental Management, Economics, and Policy
6. Environmental Technology and Physical Science
7. Pollution Ecology and Environmental Toxicity

OCEANOGRAPHY

The suggested areas of examination are as follow. Each Oceanography AOS student will be examined in at least *three* of the following areas:

1. Physical Oceanography
2. Biological Oceanography
3. Chemical Oceanography
4. Geological Oceanography
5. Statistics
6. Management

For all Areas of Specialization, note that a copy of the questions and graded answers to the written must be provided to the MEES office following completion of the examination.

Dissertation Proposal

Following successful completion of the comprehensive examination, and generally within one year, formal application to candidacy (for PhD students) is accomplished through the preparation of a dissertation proposal and an oral defense of that proposal. Advisory Committee must receive the formal research proposal at least two weeks prior to the defense date; the MEES office must be notified of date and committee members at this time. A report of the defense must be filed with the MEES office within two weeks of defense. The proposal defense should be held within two years of entrance into the program, and **before** the research is completed. Although the format for the proposal may vary depending on topic, in general it is expected to be prepared in the format that is consistent with a formal grant application. It should include a background and review of the literature, a discussion of research progress to date, a hypothesis and statement of objectives, and a complete description of the methodologies to be used. The oral defense provides the opportunity for the student's committee to determine whether the research plan is sound and whether the student has the proper motivation, intellectual capacity and curiosity, and has or can develop the technical skills necessary to successfully pursue the Ph.D. degree. The student passes if there are at least four affirmative votes. If failed, the student must re-defend the proposal within 1 year. A second failure will result in cancellation of matriculation.

Following the oral defense of the proposal, the signed form must be filed with the Graduate School within one week of passing proposal defense. A link to the appropriate form is provided on the MEES website. Students must be advanced to candidacy at least six months before the final defense is to be held. At the successful completion of this defense the student officially applies for Advancement to Candidacy for the Ph.D. degree and should submit the necessary forms to the Director of the MEES Program for transmission to the Graduate School. Students must be admitted to candidacy at least six months prior to the Defense of the Dissertation (final defense).



Dissertation Defense

An Oral Defense of the Thesis, administered according to Graduate School regulations will take place at the completion of the research project. This defense will be conducted by the Research Advisory Committee and will be administered once all other degree requirements have been fulfilled. The Thesis Defense will generally last no longer than two hours, but the time will be long enough to ensure an adequate examination. The Research Advisory Committee also approves the thesis, and it is the candidate's obligation to see that each member of the committee has at least two weeks in which to examine a copy of the thesis prior to the time of the defense.

Nominations for membership on this committee are submitted on the designated form through the MEES Director by the student's Advisor, by the third week of the semester in which the student expects to complete all requirements, and no later than six weeks, prior to the dissertation defense. The time and place of the examination are established by the chair of the committee. The student is responsible for distributing a complete, final copy of the dissertation to each member of the committee at least two weeks before the examination date. Announcement of the final examination will be made through the MEES Office to all members of the MEES faculty at least 2 weeks prior to the examination.

A candidate for the Ph.D. degree will present a public seminar on the dissertation research during the academic year in which the degree will be awarded. The student and Advisor will be responsible for initiating arrangements through the MEES Office for the date and advertisement of advertisement of the seminar. The seminar will be open to faculty, students, and other interested parties. The final oral defense of the dissertation is conducted by a committee of the graduate faculty approved by the Dean for Graduate Studies (the Research Advisory Committee plus a Dean's Representative).

All final oral examinations are open to all members of the graduate faculty, although only members of the examining committee may question the candidate. After the examination, the committee deliberates and votes in private. Two or more negative votes constitute failure. The student may be examined no more than twice. Following successful completion of the final examination, a final copy of the dissertation must be supplied to the MEES Office, in addition to those required by the Graduate School.

The Research Advisory Committee may conclude that the candidate has passed or failed. A student may be conditionally passed with the provision that minor changes in the thesis be made and approved by the Major Advisor. A student who fails may at the discretion of the committee and with approval of the MEES Director and the appropriate Graduate School be permitted to stand a second defense after acting on suggestions for improvement of the thesis (collection of more data, use of different statistical analysis, rewriting of the discussion, etc.), at such time as the advisor considers appropriate

Recap and Checklists

Provided below is a summary checklist of the requirements for each degree. Detailed descriptions of these requirements have been given above.



MS Student Checklist

1. Course work

- a. A minimum of 30 credits with 24 credits of course work and 6 credits of graduate research. Of the 24 course credits, 12 of them must be at the 600 level or higher. Exceptions and waivers for equivalent courses taken before entry may be used to meet requirements of the student's AOS upon approval by the appropriate AOS Committee. Although graduate courses taken elsewhere may serve to fulfill requirements, only six credits from such courses may be transferred. Courses used to fulfill requirements for a previously awarded degree cannot be used for transfer credits.
- b. One seminar course (MEES 608 or equivalent) must be taken for each year in residence (on average).
- c. One approved Statistics course (400 level or higher).
- d. One graduate course representing significant interdisciplinary breadth, preferably outside the student's AOS.
- e. One course or seminar in Environmental Management (a 3-4 credit course can satisfy item d).

2. Thesis defense. Announcement of the final examination will be made through the MEES Office to all members of the MEES faculty at least 2 weeks prior to the examination. Following successful completion of the final examination, a final copy of the dissertation must be supplied to the MEES Office, in addition to those required by the Graduate School. One copy must also be given to the Horn Point Library. It is recommended that each committee member also receive a copy of the dissertation.

PhD Student Checklist

1. Course Work

- a. The student must complete a minimum of 36 credits, with at least 24 credits of course work and 12 credits of dissertation research. Twelve credits of course work must be at the 600 level or above. Credits used to obtain a M.S. degree at U.M. or elsewhere cannot be transferred to the Ph.D. program. However, if a student has completed a M.S. degree, up to 16 credits of appropriate courses can be waived by petition to the AOS committee.
- b. One seminar course (MEES 608 or equivalent) is required for each year in residence (on average).
- c. One approved Statistics course (600 level or higher).
- d. One graduate course representing significant interdisciplinary breadth, preferably outside the student's AOS.
- e. One course or seminar in Environmental Management (a course can satisfy d).

2. Examinations

- a. Comprehensive Examination. The exam must be taken by the end of the student's fifth semester. The MEES Director's Office must be notified at least 2 weeks in advance of the pending examination. A report of the examination will be filed with the Director's Office following the examination.
- b. Dissertation Proposal Defense. The research proposal should be defended within 1 year of passing the Comprehensive Examination and at least 1 year before projected completion of the degree requirements. The Director's Office must be notified of the pending examination several weeks prior to its administration and a report of the examination must be filed with the Director's Office following the examination. At the successful completion of this defense the student officially applies for Advancement to Candidacy for the Ph.D. degree and should submit the necessary forms to the Director of the MEES Program for transmission to the Graduate School.

3. Dissertation Seminar and Defense of the Dissertation Research.

Announcement of the final examination will be made through the MEES Office to all members of the MEES faculty at least 2 weeks prior to the examination. Following successful completion of the final examination, a final copy of the dissertation must be supplied to the MEES Office, in addition to those required by the Graduate School. One copy must also be given to the Horn Point Library. It is recommended that each committee member also receive a copy of the dissertation.

Preparation of the Dissertation

The format and preparation of the dissertation must follow strict guidelines. However, these vary by campus to which the student is enrolled (i.e. College Park, Frostburg State, etc.), and by degree and discipline. The MEES website provides links to each of these requirements.

MEES Forms

The following forms are downloadable from the MEES website (www.mees.umd.edu/index.htm)

- Research Advisory Committee Meeting Report
- Annual MEES Student Progress report
- Report on Doctoral Comprehensive Examination
- Report on Defense of Dissertation Proposal

Consult the web before using these forms as they are updated from time to time.

The Graduate School of the degree-granting campus (i.e. College Park, Frostburg State, etc.) should also be consulted for additional forms for approval of advisory committees, dissertation defense, and graduation.

MEES Graduate Program Time Limits

MEES full-time Ph.D. students will be limited to seven years in which to graduate. Students must be advanced to candidacy – i.e. pass both the comprehensive examination (written and oral) and the proposal defense – within six semesters after entering the Ph.D. program.

MEES full-time M.S. students will be limited to four years in which to graduate.

A one semester extension may be granted at the request of the student's advisory committee and the approval of the Director.

Important Procedures for Students

Registration

Registration for courses is done through the Testudo website.

Students do not automatically receive copies of the schedule of classes – you must access this information through Testudo. To access information on the web, your student ID is your social security number and your PIN number is originally set to be your birthday (MMDDYY). You can change your PIN number both over the web (via Testudo) and over the phone.

If you have difficulty registering for a particular course because the permission of the department is required, email or phone the MEES office (410-405-6938) for an electronic stamp for that course. The departmental permission should be entered into the registration computer within a day, and you will be able to register for the course.

Textbooks

The required textbooks for courses offered through College Park are usually sold at the University Book Center located in the basement of the Stamp Student Union in College Park and at the Maryland Book Exchange located across from the College Park campus on Route 1. The University Book Center has a web page at: <http://www.ubc.umd.edu/> where students can check the availability and costs of required textbooks for individual courses. Many classes do not require books, and instead use primary literature that can be accessed via the web.

Tuition Remission

Many students are eligible for tuition remission. Tuition remission covers the cost of class credits for the student and is paid by the grant or assistantships that has been awarded to the student. Forms are made available approximately one month before the beginning of the semester and an email reminder is usually sent around that time. Tuition remission may be available for the summer and winter semesters as well. Contact the HPL Director's office if you have questions about tuition remission.

College Park Student Fees

All students at the University of Maryland College Park are charged mandatory student fees which cover such things as shuttle bus service, tickets to athletic events and use of campus recreational facilities. Students at UMCES labs can have these fees waived if they agree not to use any of the above mentioned services. Currently MEES makes a list of students each semester who want these fees waived, graduate student representative at each campus collects names and provides them to the MEES office.

Grade Reports

End of semester grade reports are not mailed to students. To obtain final grades check the Testudo website.

Transcript Requests

Copies of unofficial transcripts can be obtained at almost any time via the internet through Testudo (<http://www.testudo.umd.edu/Registrar.html>). Likewise, official transcripts can be requested from the same website. There is no charge for official transcripts.

Important Procedures for Faculty

Scheduling Courses on the Interactive Video Network (IVN)

Courses on IVN are scheduled almost a year in advance. An email reminder will be circulated. The IVN schedule is usually heavily booked.

Retrieving Class Registration Lists

Class registration lists can be accessed on the Testudo web site using a faculty password.

In general, classes should have no fewer than 5 students to be offered, although exceptions may be made.

Submitting Grades

Grades must be submitted electronically following the Testudo web site instructions. It is up to the faculty members to submit grades on time, including grades for students who are enrolled for research credits only. Generally research credits receive pass/fail grade only.

Foreign Student Information and Procedures

Foreign students should contact the Office of International Education Services to obtain the necessary information on visa requirements and immigration matters. There is a mandatory orientation session with this office for all new foreign students. A schedule is provided on their website.

The Office of International Education Services (IES) provides a range of information and services to international students and scholars, including:

- The evaluation of transcripts for all applicants who have completed coursework outside of the US.
- Orientation services for international students admitted to the University
- Counseling students on immigration concerns, financial problems, and cross-cultural issues
- Assisting departments in obtaining appropriate visa for visiting scholars and faculty members
- Providing advisement and programs for American and international students interested in studying outside the U.S.

Writing Consultations

The University of Maryland Graduate School also offers one-on-one writing consultations. Fellows work with graduate students within their colleges on structure, argument, disciplinary expectations, citation, voice, syntax, and, as appropriate, usage and grammar. Writing Fellows do not edit, but rather work collaboratively with students on their writing. For more information, please see

http://www.gradschool.umd.edu/Writing_Fellows/homepage.htm

MEES-wide Graduate Student Activities, Opportunities and Responsibilities

Student Orientation

Each fall, an orientation program is offered for new graduate students. During this program, procedures are reviewed for all incoming students, campus tours are given, and a welcome party for faculty and all students is given.

The University of Maryland College Park also provides an orientation for all new students at the beginning of each semester. This orientation is mandatory for foreign students and highly recommended for all students.

UMCES/MEES Graduate Colloquium

Each year students and faculty from all the campuses involved in the MEES program gather at one of the MEES labs for a Graduate Colloquium. The two-day event features student presentations and posters, faculty presentations, guest talks, and social events. The Colloquium is a good place for students to present their research in a familiar environment as well as to find out what other students in the MEES program are doing. First year students are strongly encouraged to attend this event.

MEES Graduate Student Organization

The GSO was developed to give MEES graduate students a unified voice to express concerns to the administration, coordinate social and educational activities that would unite students from the various campuses, and provide students with guidance for successful degree completion. The GSO appoints one graduate student as a contact at each of the campuses. Your campus representative often coordinates student events locally, so it is important that he or she can reach you. Be sure you are on the email distribution list of the GSO by contacting the MEES office.

The Individual Campuses of UMCES

Each UMCES laboratory is strategically focused on specific areas of research, education and scientific application. Each UMCES laboratory provides unique experiences for students. Here, some of unique features of each laboratory are highlighted, with a focus on opportunities and student expectations and procedures. More information can be found on the individual websites for the different laboratories.

Horn Point Laboratory

Areas of scientific expertise of the Horn Point faculty include oceanography, plankton dynamics, marine macrophyte and wetland ecology, systems ecology, nutrient dynamics and eutrophication, physiological ecology of benthic invertebrates, benthic-pelagic interactions, and aquaculture. The Horn Point Laboratory maintains one of the largest oyster hatcheries on the east coast. Oyster larvae are used in research, in restoration and in education projects. The Horn Point Laboratory also operates a state-of-the-art underwater research vehicle, a Kongsberg-Hydroid REMUS 600. Projects employing this tool include studies of frontal dynamics at the continental shelf-slope break, sediment trapping mechanics in the Hudson River, autonomous hypoxia mapping in the Chesapeake Bay, and acoustic imaging studies of zooplankton.



Horn Point Assistantships

The Horn Point Laboratory offers, on a competitive basis, several assistantships to incoming students. These are awarded on a competitive basis. Students are nominated by the faculty advisor; no action is required on the part of the admitted students. Email announcements are sent to faculty inviting nominees. These awards pay stipend, benefits and tuition- up to one year for M.S. and 2 years for Ph.D. students. For 2-year awards, renewal is contingent upon satisfactory progress).

The laboratory Education Committee also administers other scholarships as may be available.

Teaching Assistantships

HPL offers several assistantships each semester to assist with classes taught at the lab. These positions are awarded by the Education committee and email announcements are sent out well in advance of the semester for which the class is being taught. Students apply, with a letter of support from their advisor. The Education Committee makes the final selection of Teaching Fellows.

HPL students have also gained experience by teaching undergraduate labs at College Park, Washington College, and Salisbury University.

Travel Awards

The Education Committee of HPL offers funding for students to attend meetings or workshops. Approximately twice a year an announcement is made via email. Students apply, along with a letter of support by their advisor, and include a copy of their submitted abstract, a budget and any other requested information. All students after the first year are eligible to apply. One award is made per student per year. Typically this support is made to partially cover expenses and the advisor provides the other necessary funding.

Outreach Activities

There are a number of opportunities each year for students to interact with the public during outreach activities. These outreach activities take the form of touch tank, tours, and career fairs. The touch tank is taken to festivals and fairs around the area and provides a way for children to experience some of the common animals found in aquatic ecosystems within Chesapeake Bay. Students are usually compensated for performing these activities.

Student Seminars

All students at HPL, except those in their first year, are expected to give a seminar on their current research each year. These seminars are given as part of the student seminar series and provide an opportunity for students to practice speaking in public to a familiar audience while simultaneously keeping the HPL community aware of your research. Student seminars are also a prerequisite for consideration for funding through teaching assistantships or other awards administered by the Education Committee.

Ian Morris Scholar in Residence

Approximately once every two years students and faculty join together to select an Ian Morris Scholar in Residence. The Ian Morris Scholar in Residence program provides an opportunity for students to get to know scientists of stature who have made major contributions to areas of environmental science that are of interest to our faculty and students. The Ian Morris Scholar is invited to spend a week at the lab, conduct several seminars, roundtables, and workshops on a variety of topics related to his or her expertise. Students actively help in the arrangements for the week, both scientific and social

HPL Seminars

Weekly seminars are generally offered Wednesday mornings at 11 am with a pizza lunch for everyone following. There is usually time to meet with the seminar speaker before or after the talk and during lunch.

Chesapeake Biological Laboratory

CBL has a long history of excellence in fisheries science and environmental chemistry. The fisheries group played a pivotal role in the development of the management plan that led to the recovery of the striped bass in the Chesapeake Bay, completed the most recent blue crab stock assessment and is doing state-of-the-art work on habitat use by fish such as tuna, sturgeon and white perch.

The environmental chemistry group is breaking new ground in understanding how toxins affect reproduction and development of turtles, how organic contaminants move between the atmosphere, sediments and water, and carbon cycling in the Arctic. CBL is also home to a strong group of ecosystem scientists best know for their work on nutrient dynamics and food web network theory.



Brown Bag Seminars

A Friday lunchtime seminar series is held to highlight student research, give students practice with oral presentations, and provide a forum for the CBL community to learn more about current research on campus. Students are expected to present their work at least once a year after their first year and if they receive a GEC travel award. It is a nice way for students to practice their presentation for a meeting in a friendly environment. The schedule is determined at the beginning of each semester.

During the Fall and Spring semesters, formal seminars are typically held on Wednesdays at 3:30 p.m. The schedule is announced on the CBL website. These hour-long seminars are given by scientists invited to CBL by the faculty and are coordinated by a rotating pair of faculty members. Speakers are usually scheduled to meet with faculty and students before the talk. There is always the opportunity for students to request from the current seminar coordinators special time to meet with the speaker. A social hour with refreshments occurs after the seminar to provide further opportunity to interact with the seminar speaker.

Appalachian Laboratory

The Appalachian Laboratory is located in the mountains of western Maryland, in the headwaters of the Chesapeake



Bay watershed and adjacent to the Frostburg State University campus. Faculty at the Laboratory conduct research in aquatic ecology, landscape and watershed ecology, conservation biology and restoration ecology, behavioral and evolutionary ecology, and study both freshwater and terrestrial ecosystems of Maryland and other locations in the United States and the world.

AL is the headquarters and administrative lead of the Chesapeake Watershed Cooperative Ecosystem Studies Unit (CW CESU), a partnership among 22 university/research institutions and 9 federal agencies whose members strive to understand and protect the natural and cultural resources of the region. The CW CESU is part of the CESU national network of 17 similar partnerships. The primary objective of the network is to foster stewardship of the environment through collaborative research, technical assistance and education that support integrated ecosystem management.

Small Student Grants

Each year the AL Graduate Education Committee makes limited money available to fund student research proposals. The goal of these awards is to fund activities or supplies that would not otherwise be available or could not be supported on the supervisor's grants. The proposals are competitively ranked and awards are typically in the range of \$500-\$2000 depending on funds available. Proposals will be evaluated on the basis of scientific merit, justification of the requested funds, and overall quality of the proposal. Announcements and

deadlines are made via email by the head of the Education committee (and will eventually be posted on the AL website).

Travel Awards

Travel funds for students presenting their research (poster or talk) at conferences are available both from AL and the graduate school at College Park. Requests for AL awards can be made to the graduate education committee. Information on the College Park travel awards can be found at the Jacob K. Goldhaber travel grant program website at:
<http://www.gradschool.umd.edu/Fellowship/travelgrant/goldhaber/>

Teaching Assistantships

Students can obtain teaching experience at a number of locations around the area. AL offers assistantships each semester to assist with classes taught at the lab. The TA positions are awarded by the AL Graduate Education Committee. AL students have also gained experience by teaching at College Park, Frostburg State University, and Allegany College.

Weekly Seminars

During the academic year speakers are invited to AL to give an hour-long seminar typically on Thursday afternoons at 3:30 PM. The titles of the seminars are posted around the lab and are advertised over email. There is usually time to meet with the seminar speaker before or after the talk and during lunch.

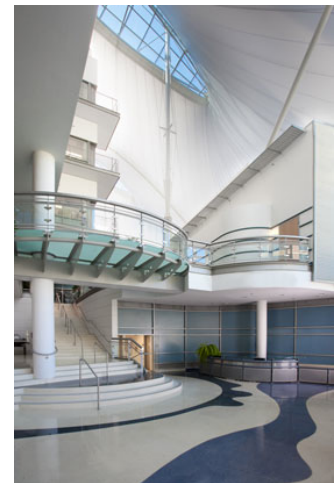
GIS Data & Training

There is a large repository of GIS data hosted by the Landscape Ecology laboratory. All of the data hosted here is available for you to use for your research. If you have datasets that might be useful to others that we don't currently have in the repository, please let us know about them.

Training is typically achieved by designing your own independent study course (# of credits will depend on the design). The course typically involves taking a number of short online courses offered through ESRI's Virtual Campus. Go to ... <http://training.esri.com/> ... click the "Course Catalog" tab, and set the Options combo box to "Self-Study (Virtual Campus)" to start a search for what courses are available.

IMET

UMCES-IMET faculty and students conduct research and education in marine molecular biology and molecular genetics in four key areas; marine biodiversity, oceans and human health, marine bioenergy and consortia in marine ecosystems. IMET's work includes the use of aquaculture and genomics to foster conservation and creation of marine resources, including marine bioenergy; environmental sensor development; environmental remediation; developmental biology; marine natural products and biomedicine; molecular and cellular systems and sustainable urban ports and ecosystems.



Graduate Enhancement Fund

Each year the UMCES-IMET Graduate Education Committee makes funds available to support student activities that are not supported on grants. These include, but are not restricted to, attendance/travel to meetings at which the student is presenting, publication costs for student first-author papers, costs for printing of dissertations.

Graduate Student Fellowships

Each year 3-5 graduate students are supported, or partially supported, by the Living Marine Resources Cooperative Science Center (LMRCSC), http://www.epp.noaa.gov/csc_lmrcsc. The focus of the LMRCSC is to increase the number of educated, trained and graduated students from underrepresented communities in marine science for career opportunities with NOAA, NOAA contractors, other Federal agencies, and academia.

Students should consult the websites of the individual laboratories for more information on facilities and on specific policies or procedures. The “My” site on each laboratory will be helpful in finding procedures for setting up computer, email and telephone accounts, use of library facilities, shipping and receiving, who does what in the business offices, how to make room reservations, who can assist with graphics and equipment and other many other things.

The individual websites of the laboratories also have information about small boat handling and training, procedures for use of diving in research activities, safety considerations, use of radioactive materials, animal use and care, and other important procedures.

The individual websites also maintain calendars for seminars and other activities, news and information for the broader community.

All campuses of the University of Maryland System are smoke-free environments.

Appendix

Please consult the UMCES website for a complete list of policies and procedures. The policies listed here are considered some of the more relevant for students but this should not be considered a comprehensive list.

POLICIES AND PROCEDURES

Section III – 8

DRUG-FREE WORKPLACE POLICY

The following policy was approved by the Board of Regents of the University System of Maryland on 16 January 1989:

The University System of Maryland, as an employer, strives to maintain a workplace free from the illegal use, possession, or distribution of controlled substances.¹ Unlawful manufacture, distribution, dispensation, possession or use of controlled substances by University employees in the workplace is prohibited under University policy.

In addition to any legal penalties under federal and state law, employees found to be in violation of this policy may be subject to corrective action under applicable University personnel policies.

The University supports programs aimed at the prevention of substance abuse by University employees. Employees are encouraged to seek assistance for substance-dependency problems. Employee-assistance counselling and leaves of absence to attend rehabilitation programs are appropriate means for dealing with these problems.

8.1 Statement of UMCES Policy on a Drug-Free Workplace

8.1.a UMCES strives in good faith to establish and maintain a workplace free from the illegal use, possession, manufacture, sale, or distribution of drugs or other materials defined as controlled dangerous substances under Maryland and federal criminal laws.

8.1.a.1 This policy shall apply to all Laboratory campuses and facilities operated by UMCES, including, but not limited to, research laboratories, offices, buildings and housing units, research vessels, and permanent or temporary field facilities.

8.1.a.2 This policy shall apply to all full-time and part-time employees, to students residing performing investigations at Center facilities, short- or long-term visitors, and to all other persons who may become officially or unofficially involved in UMCES' activities and programs.

8.1.b Employees found in violation of this policy shall be subject to progressive disciplinary action up to and including termination of appointment.

8.1.b.1 Students in residence shall be subject to dismissal from UMCES and may be subject to appropriate disciplinary action as imposed by their campus of enrollment.

8.1.b.2 This policy shall not supersede the possibility of criminal prosecution of individuals charged with willful illegal activity under relevant State and federal statutes.

-1 Allegations of illegal *sale* or *distribution* of controlled substances on UMCES property shall be referred promptly to the appropriate legal authorities for possible criminal prosecution.

8.1.c It is the policy of UMCES to recognize the importance of its employees and students as valuable contributors to achieving its mission, and to restore without prejudice those who may have developed substance dependencies to full and productive roles in its academic community.

8.1.c.1 UMCES shall provide all employees and students in residence who may have substance dependencies with an opportunity to receive treatment and rehabilitation without disciplinary penalty, provided that:

- (a) conviction of sale or distribution of controlled substances has not been a precipitating factor in seeking such opportunity; and,
 - (b) the individual cooperates with UMCES in withdrawing from all activities which may be impaired or which impose danger to others due to the dependency, treatment, or the rehabilitation program.
- 8.1.d It shall be the policy of UMCES to provide all employees with formal notification of this policy, its implementation, and the opportunities it provides for confidential treatment and rehabilitation under conditions of the maximum possible job security.
- 8.1.e In accordance with State of Maryland Policy, as promulgated in Executive Order 01.01.1989.05 signed by the Governor 7 April 1989, as a condition of employment, all UMCES employees shall be required to acknowledge receipt of this policy by returning a copy of the *State of Maryland Substance Abuse Policy Acknowledgment of Receipt (EXHIBIT III-8)* to their supervisor respective Heads of Laboratory for insertion in their permanent personnel files
- 8.2 Implementation of Drug-Free Workplace Policy
 - 8.2.a The Heads of Laboratory shall exercise administrative authority on behalf of the Vice President for Administration in the implementation of Drug-Free Workplace Policy within their respective UMCES Laboratory units.
 - 8.2.a.1 The Vice President for Administration shall exercise such authority for employees in Center Administration.
 - 8.2.a.2 An individual or his/her Laboratory Director may elect to bring a matter directly to the Vice President for Administration at any time.
 - 8.2.b UMCES employees and students in residence shall report observed violations of Drug-Free Workplace policy to the appropriate Laboratory Director.
 - 8.2.b.1 Such reports shall be made in complete confidence, and they may be made anonymously.
 - 1 The Laboratory Director shall decide whether such a report is sufficient cause to warrant investigation, but shall be obligated to conduct an inquiry or take other appropriate action concerning any individual who is the subject of two or more independent allegations.
 - 2 If investigation confirms substance abuse, dependency, or other violation of Drug-Free Workplace Policy, the Head of Laboratory shall promptly undertake appropriate corrective action.

- 8.2.b.2 Employees having supervisory authority over an individual shall report to the appropriate Laboratory Director any pattern of work performance where the individual has failed to complete assigned duties or shown deteriorating productivity attributable to substance abuse.
 - 1 If possible, the report should include documentation as to day, time, place, and nature of the incident(s) that are cause for concern.
- 8.2.b.3 The Laboratory Director shall promptly undertake corrective action upon review of such a report.
- 8.2.b.4 An individual who is experiencing problems with drug dependency or controlled substance abuse is encouraged to bring his/her circumstances to the attention of the appropriate Laboratory Director and seek treatment and rehabilitation under the provisions of this policy.
 - 1 Such an individual may elect to initiate self-referral procedures for treatment and rehabilitation, as described below, without any involvement by UMCES or a representative thereof.
- 8.2.c Employee assessment, counseling, guidance, and referral assistance for treatment and rehabilitation under UMCES Drug-Free Workplace Policy shall be provided through the *Magellan Behavioral Health*.
 - 8.2.c.1 The appropriate Laboratory Director or the Vice President for Administration shall conduct a counseling interview when he/she has determined that unsatisfactory work performance warrants action.
 - 8.2.c.2 Employees identified as having substance abuse problems or dependency, but who are not otherwise involved in flagrant violation of UMCES Drug-Free Workplace Policy, shall be notified that they will be referred in strictest confidence to *Magellan Behavioral Health*.
 - 1 An employee so notified must avail himself/herself of these services or face the possibility of disciplinary actions appropriate to decreasing acceptability of work performance
 - 8.2.c.3 An employee who recognizes that he/she has substance abuse problems may make direct contact with *Magellan Behavioral Health* without any involvement by UMCES.
 - 1 Nothing in this policy shall preclude an employee from seeking assistance through another service of his/her choice, except that UMCES makes no commitment to accept all conditions or financial obligations that may be recommended by such a program.

8.2.c.4 Once referral has been initiated, applicable policies and procedures of *Magellan Behavioral Health* shall govern the implementation of employee assessment and, if so identified, treatment and rehabilitation under UMCES Drug-Free Workplace Policy.

-1 UMCES reserves the right to temporarily withdraw an employee from those duties which create a threat to personnel safety as a result of substance abuse or treatment leading to rehabilitation.

8.2.d Students in residence who have been confirmed to have substance abuse problems shall be referred to the appropriate service on their home campus for action.

8.3 Notification of Conviction Requirements

8.3.a An UMCES employee who has been convicted of violating a criminal drug statute in the workplace shall inform his/her Laboratory Director within five (5) days of receipt of notification.

8.3.a.1 Failure to make such notification may be cause for termination of the individual's appointment.

8.3.b The Laboratory Director shall immediately inform the Vice President for Administration of such conviction, who shall in turn inform the Director of UMCES.

8.3.c In the event that the Director determines that the convicted employee was engaged in the performance of a federal grant or contract during the incident(s) in question, he/she shall notify the sponsoring federal agency within ten (10) days of receiving notice of the conviction.

8.4 Notification Procedures

- 8.4.a All UMCES employees shall receive written notification of the Center's Drug-Free Workplace Policy.
- 8.4.a.1 Current employees will be provided with a written statement of Drug-Free Workplace Policy, a summary of implementation procedures, and information regarding *Magellan Behavioral Health*.
- 1 A statement of policy and summary of implementation procedures shall also be published annually in the in-house newsletters prepared by each of the UMCES Laboratories and Center Administration.
- 8.4.a.2 New employees shall receive the above documents as part of the orientation information disseminated to all new hires.
- 1 New students in residence shall receive the above documents as part of the informational package they receive when commencing study under the direction of UMCES faculty.
- 8.4.b Each year, each UMCES Laboratory shall conduct a Drug Awareness Program for its faculty, staff, and students in residence.
- 8.4.b.1 This Program shall focus on the dangers of drug abuse, the provisions of the UMCES Drug-Free Workplace Policy, the availability of confidential counseling, treatment, and rehabilitation through *Magellan Behavioral Health*, and the legal obligations of both the employees and the Center under this Policy.
- 8.4.c A statement of UMCES Drug-Free Workplace Policy, and a summary of implementation policies and notification requirements, shall be sent to each recipient of a current or new federal grant or contract.
- 8.4.c.1 This document, or a full copy of Section III-8 of the UMCES *Policies and Procedures Manual*, shall be made available to any federal agency upon inquiry regarding UMCES Drug-Free Workplace Policy.

STATE OF MARYLAND SUBSTANCE
ABUSE POLICY
ACKNOWLEDGMENT OF RECEIPT

As an employee of the State of Maryland, I, _____, hereby certify that I have received a copy of the State's policy regarding the maintenance of a drug-free workplace. I realize that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited on the State's owned or utilized premises and violation of this policy can subject me to discipline up to and including termination. As a condition of employment, I must abide by the terms of this policy and will notify my supervisor of any criminal drug conviction no later than five (5) days after such conviction. I further realize that federal law mandates that the employer communicate this conviction to the federal agency, and I hereby waive any and all claims that may arise for conveying this information to the federal agency.

Employee's Signature

Date

Supervisor's Signature

Date

CARE AND USE OF VERTEBRATE ANIMALS IN GRADUATE STUDIES

The care and use of vertebrate animals in research at UMCES are conducted in full compliance with federal law under an Assurance filed with the Office of Laboratory Animal Welfare (OLAW), U.S. Public Health Service (PHS). This Assurance governs *all* activities involving vertebrate animals undertaken at any UMCES facility or under its auspices. Further, it is official UMCES policy that laboratory and manipulative experimental field studies of vertebrate animals are to be conducted only on finfish, amphibians and reptiles.

Policy governing the care and use of vertebrate animals in research is contained in *Section VII* of the **UMCES Policies and Procedures Manual**. The UMCES faculty considers it important that students conducting dissertation research under its supervision become familiar with federal law, laboratory and field procedures recommended by various professional societies, and ethical considerations in animal research as part of their professional training. The policies in this section have been developed in response to this commitment.

2.1 Institutional Policy^{1,2}

2.1.a As set forth in *Section VII-2*, it is official UMCES policy that laboratory and manipulative experimental field studies of vertebrate animals are to be conducted only on finfish, amphibians and reptiles.

2.1.a.1 UMCES laboratory facilities may not be used in the conduct of any vertebrate animal research in violation of this policy.

2.1.a.2 A student who desires to pursue research involving vertebrate animal subjects other than finfish, amphibians or reptiles must do so under the following conditions:

- 1 The research must be conducted under the auspices of an institution other than UMCES, and no physical activity involving vertebrate animals shall be conducted at any UMCES facility.
- 2 An UMCES faculty member shall not be the sole thesis advisor; however, an UMCES faculty member may be a co-advisor with a qualified individual at the institution under whose auspices the research is performed.
- 3 The research shall fully comply with the vertebrate animal research policy of *both* the institution under whose auspices the research is being conducted and the University of Maryland institution at which the student is enrolled as a candidate for graduate degree.

2.1.b The UMCES Institutional Animal Care and Use Committee (IACUC) shall be responsible for developing vertebrate animal research protocol guidelines and for otherwise ensuring that student research complies with applicable federal regulations, including the Center's Assurance filed with the U.S. Public Health Service (PHS), and institutional policy.

2.1.b.1 The Committee shall be composed of five (5) individuals, as follows:

- 1 One faculty member from each UMCES Laboratory who shall be the Practicing Scientist representative on the UMCES Institutional Animal Care and Use Committee (IACUC).

- 2 One individual from outside of UMCES who shall be the Veterinarian on the IACUC.
- 3 A Vice President who is responsible for coordinating graduate education at UMCES, who shall be an *ex officio* member of the IACUC.

USE OF VERTEBRATE ANIMALS IN GRADUATE STUDENT RESEARCH

- 2.2 All student research projects involving vertebrate animal subjects shall be reported to and approved by the IACUC.
- 2.2.a The protocol for thesis research of each graduate student governed by this policy shall be reviewed *in advance* of the initiation of such research and receive formal approval by the student's thesis advisor(s), the appropriate Laboratory Director, and by the IACUC.
- 2.2.a.1 The protocol shall refer to compliance with UMCES research protocol guidelines wherever appropriate, and may attach standard operating procedures as have been developed by the appropriate research facility as approved by the IACUC.
- 1 Any exceptions to UMCES institutional guidelines or standard operating procedures must be noted in the proposed protocol, fully explained, and justified.
- 2.2.a.2 Any significant modifications of an approved research protocol must be submitted for IACUC approval prior to their implementation.
- 1 Each year, a student must certify to the IACUC that his/her research protocol has not significantly deviated from that originally approved by the IACUC or, if such deviation is anticipated, the revised protocol must be submitted for IACUC approval.
- 2.2.a.3 If an approved research protocol should extend for three (3) years without significant modification, the project will be subjected to a full review by the IACUC as specified for a faculty research project under the UMCES Assurance.
- 2.2.a.4 A copy of the approved protocol shall be retained by the IACUC and shall be filed with the following:
- 1 UMCES IACUC, which reserves the right under its authority to require modification of the protocol and/or to suspend the research at any time pending such modification;
 - 2 Office of the program or department in which the student is a candidate for degree;
 - 3 Graduate Program Office or equivalent administrative office in the degree-granting institution in which the student is enrolled;
 - 4 Graduate Student's thesis advisor(s);
 - 5 Graduate Student.
- 2.2.a.5 The IACUC shall retain a copy of the approved protocol for at least three (3) years after the date of award of degree.

SEXUAL HARASSMENT

Sexual harassment is a form of gender discrimination that violates both Federal and State Law. For the purpose of implementing the *University System of Maryland Policy on Sexual Harassment (Appendix III-14-A)*, UMCES adopts to the academic setting the sexual harassment definition promulgated by the U.S. Equal Employment Opportunity Commission (29 CFR 1604).

Allegations of sexual harassment are viewed as extremely serious. UMCES can prevent sexual harassment only if members of the community are willing to come forward with legitimate complaints, and they are strongly encouraged to do so.

14.1 Definitions¹

- 14.1.a Unwelcome sexual advances, unwelcome requests for sexual favors, and other behavior of a sexual nature constitute sexual harassment when any of the following apply:
 - 14.1.a.1 Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment by UMCES or an individual's participation in a UMCES-sponsored program or activity;
 - 14.1.a.2 Submission to or rejection of such conduct by an individual is used as the basis for academic or employment decisions affecting that individual;
 - 14.1.a.3 Such conduct has the purpose or effect of unreasonably interfering with an individual's academic or work performance, or of creating an intimidating, hostile, or offensive working environment.
- 14.1.b Sexual harassment may occur between people of the same or different genders.
- 14.1.c Sexual harassment by UMCES faculty, staff, contractors, volunteers, and students is prohibited by this policy.
 - 14.1.c.1 Sanctions may include reprimand, termination from employment, termination of contract, suspension, or expulsion from UMCES programs and facilities.

STANDARDS FOR DETERMINING SEXUAL HARASSMENT

14.2 Standards Regarding Sexual Harassment

14.2.a In determining whether alleged conduct constitutes sexual harassment, UMCES will examine the record as a whole and the totality of the circumstances, such as the nature of sexual advances and the context in which the alleged incidents occurred.

14.2.a.1 The determination of whether a particular action constitutes sexual harassment under this policy will be made from all the facts, on a case-by-case basis.

14.2.a.2 The standard shall be the perspective of a reasonable person within the UMCES community, and the rules of common sense and reason shall prevail.

14.2.b Because of the potential for great harm to all persons of allegations that are ill-conceived or without foundation, it is a violation of this policy for an individual to file a frivolous or bad-faith complaint of sexual harassment.

14.2.b.1 UMCES is committed to protecting the rights of the alleged harasser as well as those of the complainant.

14.2.b.2 Reasonable efforts will be made to protect the confidentiality of all information reported or gathered in an investigatio

SEXUAL HARASSMENT DEFINITIONS

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- 14.1.c Sexual harassment by UMCES faculty, staff, contractors, volunteers, and students is prohibited by this policy.
 - 14.1.c.1 Sanctions may include reprimand, termination from employment, termination of contract, suspension, or expulsion from UMCES programs and facilities.

14.3 General Policies

- 14.3.a Each UMCES Laboratory shall identify its Affirmative Action Coordinator or designate another individual (*Appendix III-14-B*) to whom a student, UMCES employee, or volunteer may go to file a complaint of sexual harassment, seek advice, or obtain information on how to file a complaint.
 - 14.3.a.1 Any individual so identified shall have received training on how to respond to allegations of sexual harassment from either the Office of the Attorney General or the UMCES Director of Human Resources.
- 14.3.b All allegations of sexual harassment brought to the attention of a UMCES employee **must** be reported to the UMCES Director of Human Resources or to a Laboratory Affirmative Action Coordinator.
 - 14.3.b.1 Failure to notify promptly the Director of Human Resources or Affirmative Action Coordinator of a specific allegation of an incident of sexual harassment is a violation of this policy and may result in disciplinary action against the employee to whom such incident has been reported.

INFORMAL COMPLAINT RESOLUTION

14.4 Informal Procedures for Complaint Resolution

- 14.4.a Upon receipt of a complaint of sexual harassment, the Affirmative Action Coordinator shall immediately conduct an investigation for the purpose of informally resolving the complaint.
 - 14.4.a.1 The investigation shall include a discussion of the matter with the complainant, the alleged harasser, any witness to the incident, the collection of all relevant documents, and consultation with the Director of Human Resources and/or legal counsel for UMCES.
 - 14.4.a.2 The findings and the results of the Affirmative Action Coordinator's investigation shall be confidentially reported within five (5) working days of receipt of the complaint to the Director of Human Resources.¹
- 14.4.b Although a written complaint is not required to initiate the informal procedures for resolving complaints, the Affirmative Action Coordinator should strongly encourage the complainant to put the complaint in writing.
- 14.4.c After the conclusion of the Affirmative Action Coordinator's investigation, the Director of Human Resources will make reasonable efforts to promptly and informally resolve the complaint to the satisfaction of UMCES, the complainant, and the alleged harasser.
 - 14.4.c.1 If a mutually agreeable resolution is reached by the parties, the complainant, the alleged harasser, and UMCES will sign a statement acknowledging concurrence with the resolution of the complaint.

¹ If the complaint concerns the conduct of the Director of Human Resources, the findings and results of the investigation shall be reported to the Vice President for Administration, who shall conduct the informal procedures for complaint resolution.

FORMAL COMPLAINT: INTERNAL PROCEDURES

14.5 Internal Affirmative Action Complaint Procedure

14.5.a Subsequent to participation in the informal procedures for resolving complaints of sexual harassment, or as an alternative to processing a complaint informally, any student, employee, or volunteer of UMCES may process a complaint of sexual harassment by using the following procedures:

14.5.a.1 A written complaint, signed by the complainant, must be filed with the UMCES Director of Human Resources¹ within thirty (30) days following the alleged incident(s) of sexual harassment or within thirty (30) days following the date on which the complainant first knew or reasonably should have known of the alleged sexual harassment.

-1 Complaints must state the following:

- (a) the allegations, including when and where the alleged conduct occurred;
- (b) the name(s) of the person(s) alleged to have violated the policy prohibiting sexual harassment;
- (c) the name(s) of any witnesses to the violation; and
- (d) the relief requested.

-2 The alleged harasser shall be promptly furnished with a copy of the complaint by the Director of Human Resources, and shall submit to the Director of Human Resources a written response to the allegations within ten (10) working days of receipt of the complaint.

14.5.b Upon receipt of a complaint of sexual harassment filed under the Internal Affirmative Action Complaint Procedure, the Director of Human Resources shall consult with UMCES legal counsel.

14.5.c The Director of Human Resources shall, within fifteen (15) working days of receipt of a formal complaint, conduct and conclude an investigation which will include interviews with the complainant, the alleged harasser, and any witnesses, and the collection and review of all relevant documents.

¹ The UMCES Director of Human Resources will serve as the investigator unless the complaint concerns the conduct of the Director of Human Resources, in which case complaints should be filed with the Vice President for Administration, who shall designate an investigator.

14.5.d Within five (5) working days from the conclusion of the investigation, the Director of Human Resources shall deliver to the complainant and the alleged harasser, by return receipt requested mail or hand-delivery, a written decision setting forth the following:

- (a) a statement of the facts which occurred;
- (b) a determination of whether the conduct which occurred constitutes sexual harassment prohibited under this policy;
- (c) what sanctions, if any, will be recommended; and
- (d) a statement of the complainant's and the alleged harasser's appeal rights.

14.5.d.1 Recommended sanctions shall not be implemented until after the period for filing an appeal has expired.

- 1 Recommended sanctions may include, but are not limited to: a letter of reprimand; instructions to draft and deliver a letter of apology; demotion; termination of employment or contract; or expulsion from UMCES programs.

14.5.e The complainant or alleged harasser may appeal the decision of the Director of Human Resources by filing a written appeal with the President of UMCES within five (5) working days of the date of receipt of the written decision.

14.5.e.1 The person taking the appeal shall be the appellant and the Director of Human Resources shall serve as the appellee.

14.5.e.2 An appeal shall be in writing and signed by the appellant, and shall state all grounds for the appeal and contain a concise statement of all facts in support of the appeal.

- 1 The appellant shall also attach to the appeal any documents in support of the appeal.

FORMAL COMPLAINT: INTERNAL PROCEDURES

14.5.e.3 Within fifteen (15) working days of the receipt of the appeal, the President of UMCES (or designee)¹ shall conduct a hearing to determine: 1) if the alleged facts occurred; 2) if the conduct which occurred constitutes sexual harassment prohibited under this policy; and 3) if the discipline recommended is appropriate.

- 1 At the hearing, the appellant and the appellee shall have the option to present opening and closing statements, to call and cross-examine witnesses, and to introduce documentary evidence.
- 2 The President (or designee) may call and question witnesses, request documents, and exclude non-probative and unduly repetitious testimony.
- 3 The hearing shall be tape recorded.

14.5.e.4 Within fifteen (15) working days following the hearing, the President of UMCES (or designee) shall issue a final written decision.

- 1 The final decision will be delivered to the complainant, and to the alleged harasser.
- 2 The decision of the President (or designee) shall be final and binding to all parties.

¹ No such designee may have also served as an investigator, witness, or party to the sexual harassment complaint.

FORMAL COMPLAINT: EXTERNAL FILING PROCEDURES

14.6 External Filing of Complaint Regarding Alleged Sexual Harassment

14.6.a Should an individual wish to file a formal complaint of alleged sexual harassment with an external entity, he/she may do so with the following agencies:

U.S. Equal Employment Opportunity Commission (EEOC)
1801 "L" Street, NW
Washington, DC 20507

U.S. Equal Employment Opportunity Commission (EEOC)
Regional Office
10 South Howard Street, 3rd Floor
Baltimore, MD 21201

Maryland Commission on Human Relations
20 East Franklin Street
Baltimore, MD 21202

U.S. Department of Education
Office of Civil Rights
3535 Market Street, Room 6300
Philadelphia, PA 19104-3326

14.6.b To protect the legal rights and remedies available to an individual through external agencies and Federal and/or State courts, a person filing a complaint of sexual harassment must comply with certain time limits and deadlines.

14.6.b.1 A person wishing to file a complaint with an external agency must contact

