Issue: Proposed Ph.D. in Integrative Biology

Proposed action: New Degree Program Approval

Background information: This application for a new Ph.D is driven by a recent reorganization of the Department of Biology. The reorganization began in 2006 and was completed in 2009. The reorganization of the Department of Biology, in part, reflected the enormity of the biological sciences, and in part, different research perspectives and directions taken by the faculty in each of the respective areas of biology. Part of the reorganization was to replace the original Ph.D. in Biology with two new doctoral degrees that better serve the needs of the State and our current graduate students by enabling greater focus of the research performed to earn the Ph.D. The well-established and highly productive faculty attracts students to the Tampa Campus from all over the United States as well as from foreign countries. The resources to support the two Ph.D. programs have already been established in the Department of Biology and are sufficient to support the two new degree programs. The reorganization created two new departments; the Department of Cell Biology, Microbiology, and Molecular Biology (CMMB) and the Department of Integrative Biology (IB). This proposal addresses the creation of a new Ph.D., in Integrative Biology offered by the Department of Integrative Biology (CIP Code 26.1399). The name of the Department, Integrative Biology, reflects the belief that the study of biological processes and systems can best be accomplished by the incorporation of numerous integrated approaches.

Strategic Goal(s) Item Supports:

The proposed program directly supports the following:

Goal 1 and Goal 2

Workgroup Review: ACE March 7, 2013

Supporting Documentation: See Complete Proposal below

Prepared by: Dr. Henry R. Mushinsky (mushinsk@usf.edu)
Phone: 813-974-5218
Board of Governors, State University System of Florida

Request to Offer a New Degree Program

University of South Florida

University Submitting Proposal

Arts and Sciences

Name of College(s) or School(s)

Integrative Biology

Name of Department(s)/Division(s)

Academic Specialty or Field

Doctor of Philosophy

Complete Name of Degree

26.1399

Proposed CIP Code

The submission of this proposal constitutes a commitment by the university that, if the proposal is approved, the necessary financial resources and the criteria for establishing new programs have been met prior to the initiation of the program.

Date Approved by the University Board of Trustees

President

Date

Signature of Chair, Board of Trustees

Date

Vice President for Academic Affairs

Date

Provide headcount (HC) and full-time equivalent (FTE) student estimates of majors for Years 1 through 5. HC and FTE estimates should be identical to those in Table 1 in Appendix A. Indicate the program costs for the first and the fifth years of implementation as shown in the appropriate columns in Table 2 in Appendix A. Calculate an Educational and General (E&G) cost per FTE for Years 1 and 5 (Total E&G divided by FTE).

<table>
<thead>
<tr>
<th>Implementation Timeframe</th>
<th>Projected Enrollment (From Table 1)</th>
<th>Projected Program Costs (From Table 2)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>HC</td>
<td>FTE</td>
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<tr>
<td>Year 1</td>
<td>30</td>
<td>22.5</td>
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<tr>
<td>Year 2</td>
<td>33</td>
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<tr>
<td>Year 5</td>
<td>42</td>
<td>31.5</td>
</tr>
</tbody>
</table>

Note: This outline and the questions pertaining to each section must be reproduced within the body of the proposal to ensure that all sections have been satisfactorily addressed. Tables 1 through 4 are to be included.
as Appendix A and not reproduced within the body of the proposals because this often causes errors in the automatic calculations.

INTRODUCTION

Preface: This application for a new Ph.D is driven by two synergistic forces; a recent reorganization of the (former) Department of Biology and recognition that the field of biology has grown enormously since the Department of Biology was formed in the 1970’s. The reorganization created two new departments; the Department of Cell Biology, Microbiology, and Molecular Biology (CMMB) and the Department of Integrative Biology (IB). Each department is housed in a separate building and each has operated independently for the past seven years.

The central mission of the Department of Integrative Biology focuses on the integration of morphological and physiological adaptations that facilitate the biological, ecological and evolutionary competency of organisms. All levels of organization are subjected to research, from molecules to ecosystems, and all forms of life are included from microbes to plants to animals. IB’s faculty members are engaged in research activities that involve, broadly, conservation biology, global change biology, freshwater biology and pollution, marine biology, biomechanics, disease biology, biogeochemistry, and evolutionary biology. Their research integrates our understanding of living things across all levels of organization.

The central mission of the Department of Cell Biology, Molecular Biology and Microbiology focuses on the investigation of human diseases at the molecular and cellular level. This is broadly organized into three focus areas: Genome Integrity and Mechanisms of Aging; Bacterial Pathogenesis and Resistance; and Structural and Computational Biology. Specifically, faculty members in CMMB are engaged in research using model organisms that focus on neurodegenerative disorders, ageing related diseases, the immunological and genetic basis of diabetes, cancer development and progression, biosensing based detection of infectious agents in food and the environment, the pathogenesis of bacterial infection, antibiotic resistance and drug development and the immunology of host-pathogen interaction. Their research seeks to develop a better understanding of human disease causation and development, with the goal of uncovering new treatment options and drug targets.

This proposal addresses the creation of a new Ph.D., in Integrative Biology offered by the Department of Integrative Biology (CIP Code 26.1399). The Ph.D. in Biology has been granted since the 1970’s.
I. Program Description and Relationship to System-Level Goals

A. Briefly describe within a few paragraphs the degree program under consideration, including (a) level; (b) emphases, including concentrations, tracks, or specializations; (c) total number of credit hours; and (d) overall purpose, including examples of employment or education opportunities that may be available to program graduates.

**Level:** The proposed degree is the Ph.D. and is a graduate level degree.

**Emphases, including concentrations, tracks, or specializations:** The Ph.D. program in Integrative Biology is built to facilitate research in three Areas of Concentration including Ecology and Evolution, Morphology and Physiology, and Environmental and Ecological Microbiology. These three areas of concentration also reflect the integrative nature of the research being conducted by members of the Department. Many of the students working within the Ecology and Evolution Area have interests in conservation biology and develop skills in molecular ecology to understand genetic relationships of the organisms they study. Most students in the Ecology and Evolution area also become well-versed in Geographic Information System applications to study past and present distributions of the focal species. Students working within the Morphology and Physiology Area are performing research in functional and comparative morphology. Students working within the Environmental and Ecological Microbiology Area are becoming experts in identifying pollutants that contaminate the fresh water systems of Florida and beyond and are developing rapid methods of identifying the sources of those pollutants or may be studying microbes that play a major role in the global carbon cycle. A significant number of our students conduct research in areas that are considered “applied biology,” that is, their research is aimed at solving problems that benefit the State of Florida and beyond.

**Total number of credit hours:** This degree requires 90 semester hours beyond the Bachelor’s Degree

**Overall purpose including examples of employment or education opportunities that may be available to program graduates:** This degree is part of the broader area of academics known as STEM (Science, Technology, Engineering and Math). The goal of the faculty is to cultivate scientists to advance our knowledge and understanding of the natural world. Our recent Ph.D. students have had great success finding professional positions directly after graduation or after gaining additional experience through post doctoral training. A few examples of the types of positions taken by recent graduates include; Research Scientist for the U.S. Geological Service in California, Post Doctoral Researcher at Pennsylvania State University, Post Doctoral Researcher at Harvard, faculty member at Allegheny College, faculty member at the University of Tampa, Fisheries Biologist for the State of Washington, and a Senior Ecologist for national biological consulting firm.
B. Describe how the proposed program is consistent with the current State University System (SUS) Strategic Planning Goals. Identify which specific goals the program will directly support and which goals the program will indirectly support. (See the SUS Strategic Plan at http://www.flbog.org/about/strategicplan/)

The proposed program directly supports the following:

Goal 1A.1-3. Access to and production of degrees (A3: production of professional degrees and A4: emerging technology doctoral degrees). The previous Department of Biology became too diffuse because of the enormity of the field. The creation of this new degree will prepare students for their professional life in the 21st Century. The new Ph.D reflects a major emphasis of contemporary biology, that is, complex questions require multifaceted (integrated) approaches to properly address them. Research within the Department of Integrative Biology extends from molecular biology to ecosystems analysis. Our students are trained to meet the challenges of the upcoming decades.

Goal 1.A.4. Emerging Technology Doctorates. Faculty within the Department of Integrative Biology are involved in numerous areas of science recognized to be on the cutting edge. Recent hires include individuals who conduct research in the “Ecology of Infectious Diseases,” participate in the new USF “School of Global Sustainability,” are leaders in two new fields of ecology called “Ecoimmunology,” and “Ecotoxicology.” They use molecular techniques as well as modern ecological tools to assess an organism’s response to ecosystem functions. The newest faculty member studies ecological genetics and genomics. Graduate students and Post-Doctoral Scholars from across the world are attracted to work with these new faculty members as well as faculty who conduct research in the more applied areas of biology, such as “Conservation Biology.”

Goal 1.A.5. Access/Diversity. In general minorities are underrepresented in all of the sciences. The Department of Integrative Biology currently has Hispanic, and Native American students enrolled in graduate degree programs. Females, which traditionally have been underrepresented in the sciences, are, in fact, in the majority in our graduate program.

Goal 1.B. Meeting Statewide Professional and Workforce Needs (1.B.3.b. Natural Science and Technology Programs). Graduates with the Ph.D. in Integrative Biology will have the training and skills needed to advance the natural sciences in Florida by contributing to educational programs at the college or university level and by taking employment in biological consulting firms or by participating in local, regional or State government agencies.

Goal 1.B.4. Economic Development: high-wage/high-demand jobs. Individuals with a Ph.D. in Integrative Biology can expect to earn greater than $65,000 per year as a starting salary and those who go into industry or consulting can double that amount with a few years of experience. According to the latest data available
from the Bureau of Labor Statistics, median annual wage of microbiologists was $71,720 in May 2011. The middle 50 percent earned between $48,330 and $87,040. The lowest 10 percent earned less than $38,240, and the highest 10 percent earned more than $111,300. Median annual wage of zoologists and wildlife biologists was $61,880 in May 2011. The middle 50 percent earned between $48,060 and $74,500. The lowest 10 percent earned less than $35,550, and the highest 10 percent earned more than $95,850.

Goal 1.C. Building world-class academic programs and research capacity (1.C.1. Research Expenditures. A close inspection of the credentials of the faculty would indicate that during the past five years they have produced more than 225 research papers and attracted about sixteen million dollars in grant funding.

In addition to matching the BOG goals, the Department of Integrative Biology is fully aligned with USF’s strategic plan. The proposed Ph.D. program based on the strengths detailed above directly supports two out of four University strategic goals. These are:

1. Expanding world-class interdisciplinary research, creative, and scholarly endeavors

2. Promoting globally competitive graduate programs that support interdisciplinary inquiry, intellectual development, knowledge and skill acquisition, and student success through a diverse, fully-engaged, learner-centered campus environment.

C. If the program is to be included in an Area of Programmatic Strategic Emphasis as described in the SUS Strategic Plan, please indicate the category and the justification for inclusion.

The Areas of Programmatic Strategic Emphasis:

1. Critical Needs:
   • Education
   • Health Professions
   • Security and Emergency Services

2. Economic Development:
   • Globalization
   • Regional Workforce Demand

3. Science, Technology, Engineering, and Math (STEM)

This degree is categorized as a STEM Program that is dedicated to the training the next generation of professional biologists. The breadth of the program extends from studies at the molecular level focused on newly discovered patterns of inheritance (epigenetics) to organismal responses to global warming. Research into the biology of infectious diseases is an active area of study.

This degree also contributes to the critical need in Education because many of our graduates become faculty members at colleges and universities worldwide. We have placed many graduates in teaching and/or research positions, some at
Research 1 universities after several years of postdoctoral training.

D. Identify any established or planned educational sites at which the program is expected to be offered and indicate whether it will be offered only at sites other than the main campus.

This degree is offered only on the Tampa Campus; it requires extensive laboratory equipment and/or extensive equipment for field research projects that are not available elsewhere in the USF System.

INSTITUTIONAL AND STATE LEVEL ACCOUNTABILITY

II. Need and Demand

A. Need: Describe national, state, and/or local data that support the need for more people to be prepared in this program at this level. Reference national, state, and/or local plans or reports that support the need for this program and requests for the proposed program which have emanated from a perceived need by agencies or industries in your service area. Cite any specific need for research and service that the program would fulfill.

The growing human population in Florida will exert a great strain on our natural resources, especially the supply of drinking water and the treatment of effluents from industrial and agricultural enterprises. Students in the Environmental and Ecological Microbiology concentration are trained to help local and regional state agencies overcome problems related to water quality. According to the latest data from the Bureau of Labor Statistics (http://www.bls.gov/bls/blswage.htm) biological scientists held about 108,000 jobs in 2011, including 17,660 microbiologists, 18,380 zoologists and wildlife biologists, and 18,900 conservation biologists. In addition, many biological scientists held biology faculty positions in colleges and universities but are not included in these numbers. About 40 percent of all biological scientists are employed by Federal, State, and local governments. Federal biological scientists worked mainly for the U.S. Departments of Agriculture, Interior, and Defense and for the National Institutes of Health. Most of the others worked in scientific research and testing laboratories, the pharmaceutical and medicine manufacturing industry, or educational institutions. Employment of biological scientists is expected to increase at a much faster rate for all occupations although there will continue to be competition for some basic research positions. Employment of biological scientists is projected to grow 21% over the 2010—2020 decade, much faster than the average for all occupations, as applied research and development continues to drive job growth. Biological scientists enjoyed very rapid employment gains over the past few decades—reflecting, in part, the growth of the biotechnology industry. Employment growth will moderate somewhat. However, much of the basic biological research done in recent years has resulted in new knowledge, including the isolation and identification of genes. Biological scientists will be needed to take this knowledge to the next stage, understanding how certain genes function within an entire organism. Applications of the knowledge gained through research can have far reaching benefits, for
example by helping farmers increase crop yields by pinpointing genes that can help crops, such as wheat, grow in more extreme climate conditions.

A growing demand exists for conservation biologists in the State of Florida; individuals trained to understand the biology of rare and endangered species as we all as those trained to manage invasive exotic species. The Bureau of Labor Statistics reports that employment of conservation biologists is expected to grow by 12% during the 2010–2020 decade, about as fast as the average for all occupations. A majority of conservation scientists are employed by Federal, State, and local governments, and a large percentage of new jobs will be found in these areas. In recent years, the prevention and mitigation of wildfires has become the primary concern for government agencies managing forests and rangelands. The development of previously unused lands, in addition to changing weather conditions, has contributed to increasingly devastating and costly fires. Increases in funding and new programs will create new opportunities for ecologists and conservation biologists. Workers will be needed to manage lands in order to minimize the risk of fires and mitigate their impact. Conservation biologists manage the use and development of forests, rangelands, and other natural resources. Conservation biologists often specialize in one of several areas, such as soil conservation, urban ecology, habitat restoration, native rare and threatened species, or forest ecology.

On 17 September 2012, the website [http://www.indeed.com/q-Wildlife-l-Florida-jobs.html](http://www.indeed.com/q-Wildlife-l-Florida-jobs.html) listed a total of 245 Wildlife biology positions and 524 Biological Science jobs in Florida. Not all of these job vacancies required a Ph.D. for the position, but many require graduate degrees and the highest paying jobs require the Ph.D.

B. Demand: Describe data that support the assumption that students will enroll in the proposed program. Include descriptions of surveys or other communications with prospective students.

The faculty members who now comprise the Department of Integrative Biology have a particularly strong track record of attracting highly qualified students from all parts of the globe to work in their research laboratories. The Department has had a long standing policy that no students are accepted into the program without a faculty sponsor who is willing to mentor the student from the day he/she enters the campus. We have had students from 23 countries and 30 states apply for admission into the Department of Integrative Biology in the past five years. In sum, we have received applications from 229 students interested in pursuing graduate degrees; we admitted 83 of them (36%) and 62 (75%) of those admitted enrolled in our program during the past five years.

C. If substantially similar programs (generally at the four-digit CIP Code or 60 percent similar in core courses), either private or public exist in the state, identify the institution(s) and geographic location(s). Summarize the outcome(s) of communication with such programs with regard to the potential impact on their enrollment and opportunities for possible collaboration (instruction and research). In Appendix B, provide data that support the need for an additional
program as well as letters of support, or letters of concern, from the provosts of other state universities with substantially similar programs.

Biology doctoral programs exist at the University of Florida, Florida State University, University of Central Florida, Florida International University, and the University of Miami. None of these programs have the 26.1399 CIP codes however. Nevertheless the other programs in the State have co-existed with the current University of South Florida Ph.D. program for decades. The change will have no negative effects on the undergraduate program which is co-administered and delivered currently by the faculty of the two biology departments (Integrative Biology and Cell biology, Microbiology and Molecular Biology) The focusing of the graduate programs may well create further opportunities for collaboration.

Use Table 1 in Appendix A (A for undergraduate and B for graduate) to categorize projected student headcount (HC) and Full Time Equivalents (FTE) according to primary sources. Generally undergraduate FTE will be calculated as 40 credit hours per year and graduate FTE will be calculated as 32 credit hours per year. Describe the rationale underlying enrollment projections. If, initially, students within the institution are expected to change majors to enroll in the proposed program, describe the shifts from disciplines that will likely occur.
See Table 1B. The enrollment projections are based on past experience with the Ph.D. in the Department of Biology, but the data have been filtered to reflect only those students who are working with, or have worked with, faculty who are now housed in the Department of Integrative Biology (i.e. students who studied with faculty in the Cell Biology, Molecular Biology and Microbiology doctoral program have been omitted from our calculations). No enrollment shifts will occur.

D. Indicate what steps will be taken to achieve a diverse student body in this program. If the proposed program substantially duplicates a program at FAMU or FIU, provide, in consultation with the affected university, an analysis of how the program might have an impact upon that university's ability to attract students of races different from that which is predominant on their campus in the subject program. The university's Equal Opportunity Officer shall review this section of the proposal and then sign and date in the area below to indicate that the analysis required by this subsection has been reviewed and approved.

The Department of Integrative Biology is committed to the principle of equal education and employment opportunities without regard to race, color, marital status, sex, religion, national origin disability, age, Vietnam or disabled veteran's status as provided by law, and in accordance with the University's respect for personal dignity. The current student and faculty population is diverse. Every possible effort is made to attract and retain minority students who have the proper credentials and background to succeed in a doctoral program in Integrative Biology.

The following steps have been and will be taken to increase underrepresented groups of STEM graduate students.

Step 1: The Graduate Director of the Department of Integrative Biology has contacts at Florida International University and Howard University who encourage minority students to apply to USF.

Step 2: The Graduate Director works closely with the Graduate School to recruit minority students who are McKnight Fellows into the IB Department.

Step 3: Actively promote the IB Ph.D. program to USF undergraduate minority students who now have become more competitive.

The Ph.D. in Integrative Biology is not a popular program for minority students, although several minority students are currently enrolled in our M.S. program and we have encouraged them to complete the Ph.D. at USF. We currently have one Native American student and one Hispanic student in the Ph.D. program.

The new degree is unique in Florida and we hope it will be more attractive to minorities than has been the Ph.D. in Biology.

[Signature]

Jack Williams, AUP, DEo

1/9/2013
III. Budget

A. Use Table 2 in Appendix A to display projected costs and associated funding sources for Year 1 and Year 5 of program operation. Use Table 3 in Appendix A to show how existing Education & General funds will be shifted to support the new program in Year 1. In narrative form, summarize the contents of both tables, identifying the source of both current and new resources to be devoted to the proposed program. (Data for Year 1 and Year 5 reflect snapshots in time rather than cumulative costs.) If the university intends to operate the program through continuing education on a cost-recovery basis or market rate, provide a rationale for doing so and a timeline for seeking Board of Governors' approval, if appropriate.

Table 2 is a summary of the costs for the proposed program. Because we are proposing a name change for an existing program rather than the creation of a new Ph.D. no new resources will be required for this program. The impetus for the change in the Ph.D. was the reorganization of the Department of Biology into two new departments. The Ph.D. in Integrative Biology and the three new Areas of Concentration that have been developed within this program allow students to focus their research on high demand topics. Because the number of Ph.D. students in the department is near capacity for the number of faculty, we don’t expect any significant changes in the student population in the near future and don’t anticipate the need for any increase in funding. Current students will have the opportunity to switch to the new degree or stay with the current degree which will be phased out when the current students graduate.

B. If other programs will be impacted by a reallocation of resources for the proposed program, identify the program and provide a justification for reallocating resources. Specifically address the potential negative impacts that implementation of the proposed program will have on related undergraduate programs (i.e., shift in faculty effort, reallocation of instructional resources, reduced enrollment rates, greater use of adjunct faculty and teaching assistants). Explain what steps will be taken to mitigate any such impacts. Also, discuss the potential positive impacts that the proposed program might have on related undergraduate programs (i.e., increased undergraduate research opportunities, improved quality of instruction associated with cutting-edge research, improved labs and library resources).

As the proposed program has been in existence for several decades in the former Department of Biology, we don’t anticipate any negative effects of the new Ph.D. program on any other departments or programs. The faculty that now composes the Department of Integrative Biology has a long history of engaging undergraduate students in research and shall continue to do so. The USF library provides complete access to the electronic journals needed to support the new Ph.D. program and an up to date collection of books and other resources.

C. Describe other potential impacts on related programs or departments (e.g., increased need for general education or common prerequisite courses, or increased need for required or elective courses outside of the proposed major).

The Department of Integrative Biology and the Department of Cell Biology,
Molecular Biology and Microbiology offer undergraduate and graduate courses that can be taken by students housed in either of the two new departments. The courses are existing courses and the proposed new Ph.D. in Integrative Biology does not require the creation of any new courses beyond those that already exist and are taught on a regular basis.

D. Describe what steps have been taken to obtain information regarding resources (financial and in-kind) available outside the institution (businesses, industrial organizations, governmental entities, etc.). Describe the external resources that appear to be available to support the proposed program.

During the past five years the faculty members in the Department of Integrative Biology have attracted more than $16,000,000 in extramural funding. Outside funding sources and the total dollar value obtained from those sources are listed below.

A.D. Levine, Civil & Environmental Engineering. $43,792
Cemex $750,000
Curtis Charitable Trust $200,000
Department of Military and Veteran Affairs, $157,533
Disney Wildlife Conservation Fund $119,680
DSM Dyneema B.V., $3,500.
Georgia Aquarium and Mote Marine Laboratory, $9,300.
Environmental Protection Commission of Hillsborough County. $226,962.
EPA STAR program, $135,276
Florida Center for Solid and Hazardous Waste Management. $10,000
Florida Department of Agriculture, $38,925
Florida Department of Environmental Protection $1,470,758
Florida Department of Health. $227,181
Florida Fish and Wildlife Conservation Commission, $109,000
Florida Institute of Oceanography, $8,000.00.
Institute for the Study of Latin America and the Caribbean $5,700.
Jacksonville Electrical Authority. $46,240.
National Evolutionary Synthesis Center $36,000
National Science Foundation. $8,291,276
National Park Service, $89,996
National Sea Grant. $40,000.
New York Sea Grant $55,151.
National Institute for Global Environmental Change $348,000
NOAA-CICEET $68,974
NOAA, $674,585
Pasco County Stormwater. $70,200
Pinellas County Environmental Foundation $26,650
Sarasota County, FL... $14,000.
Scott’s Company, $2,000, $10,000
St. Johns River Water Management District. $80,000
USDA. $398,500.
St. Lucie County, Florida. $84,655.
Southwest Florida Water Management District. $250,277
Tampa Bay Estuary Program. $94,561.
The Conservancy of Southwest Florida. $196,018
US Environmental Protection Agency. $1,043,353
US Fish and Wildlife Service, $175,010
USF GAP Program. $10,000
USF Division of Sponsored Research, $15,250
USF New Researcher Grant. $8,735
USF Honors College, $5,000
U.S. Dept. of Interior, $145,000,
US Department of Agriculture $519,538
University of Florida IFAS Research Innovation Grants $50,000
University of Miami. $71,069.

IV. Projected Benefit of the Program to the University, Local Community, and State

Use information from Tables 1 and 2 in Appendix A, and the supporting narrative for “Need and Demand” to prepare a concise statement that describes the projected benefit to the university, local community, and the state if the program is implemented. The projected benefits can be both quantitative and qualitative in nature, but there needs to be a clear distinction made between the two in the narrative.
Benefit to the University: Very High Research Universities, such as USF, exist with a strong complement of science departments and the Department of Integrative Biology is an integral part of our strong science programs. The well-established Ph.D. program in integrative biology will attract 30-42 new, highly qualified and talented students to USF. Our outstanding record of excellence in research attracts post-doctoral researches to our campus as well. Another direct benefit to the University of having a strong Ph.D. program in Integrative Biology is the high quality graduate students who serve as teaching assistants in the laboratories for undergraduate courses. Virtually every graduate student in the Department gets some teaching experience. Because the Department attracts very high quality students, the undergraduates benefit from their knowledge and their dedication to quality instruction.

Benefit to the Community: Faculty and graduate students interact with many agencies in Florida, including South West Florida Water Management District, Brooker Creek Preserve, Walt Disney World, Mote Marine Institute, Lowry Park Zoological Gardens, Florida Forestry Agency, and numerous surrounding counties just to mention a few examples. We provide expert opinion on land management practices, and facilitate cooperative research projects.

Benefit to Florida: Faculty and graduate students interact with the Florida Fish and Wildlife Commission, the Florida Parks Association, Florida Department of Health, Florida Institute of Oceanography, Florida Department of Environmental Protection, Florida Center for Solid and Hazardous Waste Management, just to mention a few examples. We provide expert opinion and planned research projects to help these agencies carry out their missions.


V. Access and Articulation – Bachelor’s Degrees Only

A. If the total number of credit hours to earn a degree exceeds 120, provide a justification for an exception to the policy of a 120 maximum and submit a separate request to the Board of Governors for an exception along with notification of the program’s approval. (See criteria in Board of Governors Regulation 6C-8.014)

Insert response here.

B. List program prerequisites and provide assurance that they are the same as the approved common prerequisites for other such degree programs within the SUS (see the Common Prerequisite Manual at FACTS.org). The courses in the Common Prerequisite Counseling Manual are intended to be those that are required of both native and transfer students prior to entrance to the major program, not simply lower-level courses that are required prior to graduation.
The common prerequisites and substitute courses are mandatory for all institution programs listed, and must be approved by the Articulation Coordinating Committee (ACC). This requirement includes those programs designated as “limited access.”

If the proposed prerequisites are not listed in the Manual, provide a rationale for a request for exception to the policy of common prerequisites. NOTE: Typically, all lower-division courses required for admission into the major will be considered prerequisites. The curriculum can require lower-division courses that are not prerequisites for admission into the major, as long as those courses are built into the curriculum for the upper-level 60 credit hours. If there are already common prerequisites for other degree programs with the same proposed CIP, every effort must be made to utilize the previously approved prerequisites instead of recommending an additional “track” of prerequisites for that CIP. Additional tracks may not be approved by the ACC, thereby holding up the full approval of the degree program. Programs will not be entered into the State University System Inventory until any exceptions to the approved common prerequisites are approved by the ACC.

Insert response here.

C. If the university intends to seek formal Limited Access status for the proposed program, provide a rationale that includes an analysis of diversity issues with respect to such a designation. Explain how the university will ensure that community college transfer students are not disadvantaged by the Limited Access status. NOTE: The policy and criteria for Limited Access are identified in Board of Governors Regulation 6C-8.013. Submit the Limited Access Program Request form along with this document.

Insert response here.

D. If the proposed program is an AS-to-BS capstone, ensure that it adheres to the guidelines approved by the Articulation Coordinating Committee for such programs, as set forth in Rule 6A-10.024 (see Statewide Articulation Manual at FACTS.org). List the prerequisites, if any, including the specific AS degrees which may transfer into the program.

INSTITUTIONAL READINESS

VI. Related Institutional Mission and Strength

A. Describe how the goals of the proposed program relate to the institutional mission statement as contained in the SUS Strategic Plan and the University Strategic Plan.

The goals of USF’s strategic plan include: (i) expanding world-class interdisciplinary research, (ii) promoting globally competitive undergraduate, graduate and professional programs, (iii) expanding local and global engagement initiatives to strengthen and sustain global healthy communities and improve the quality of life, and (iv) enhancing all sources of revenue. The proposed program is consistent with all these goals. Faculty research grants and publications have contributed to goals (i) and (iv), our teaching and student research have contributed to goals (i) and (ii) as our students have already published dozens of
research papers in first rate scientific journals. Our faculty has contributed to goal (iv) by winning external research grants that also support doctoral Research Assistantships.

The goals of the State University of Florida Board of Governors as stated in the Strategic Plan 2012-2025 focus on (i) Teaching and Learning, (ii) Scholarship, Research and Innovation and (iii) Community and Business Engagement. The Ph.D. in Integrative Biology strongly complies with goals one and two. The faculty is composed of numerous distinguished teachers who are engaged in the teaching of both undergraduate and graduate students. We take teaching very seriously and assign senior faculty members to mentor junior faculty to be sure we are all teaching on the same level. Graduate level courses depend heavily on reading and discussing primary literature to be sure our students are up to date in there research area and also trained as broadly as possible for suture opportunities. The publication record of the faculty is outstanding and the faculty frequently publishes research papers with their undergraduate and graduate students as first authors. The faculty has an outstanding record in attracting extramural funds to support their research projects and an equally outstanding record of publishing the results of their research in tier one journals.

B. Describe how the proposed program specifically relates to existing institutional strengths, such as programs of emphasis, other academic programs, and/or institutes and centers.

The Department of Integrative Biology is part of the School of Natural Sciences and Mathematics in the College of Arts and Sciences. Doctoral students in the Department are trained by established scholars and contribute to the mission of the University by conducting original research and publishing their findings. The Ph.D. in Integrative Biology clearly fits into and compliments the STEM fields of learning and discovery and thereby contributes to our existing strengths and future growth.

C. Provide a narrative of the planning process leading up to submission of this proposal. Include a chronology (table) of activities, listing both university personnel directly involved and external individuals who participated in planning. Provide a timetable of events necessary for the implementation of the proposed program.

A Department of Biology has existed at USF since the 1960’s and the Ph.D was first granted in the 1970’s. Over the years, the Department grew to nearly forty faculties and supported about 100 graduate students. Two broad areas of emphasis existed within the single department; cell and molecular biology that was strongly oriented toward human biology and organismal biology that oriented toward ecological, evolutionary and conservation biology. As a faculty we felt too diverse to be housed under a single degree program. In 2009, the Department of Biology reorganized to form two departments; the Department of Cell Biology, Molecular Biology and Microbiology and the Department of Integrative Biology. The two programs are housed in separate buildings and have developed into well-established departments. An agreement was reached during the
reorganization that each program would establish new Ph.D. degrees with CIP Codes that better reflected the teaching and research missions of the two new entities. To that end, this proposal is made to create a new Ph.D.

### Planning Process

<table>
<thead>
<tr>
<th>Date</th>
<th>Participants</th>
<th>Planning Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>Biology Faculty</td>
<td>Discuss the formation of two new departments</td>
</tr>
<tr>
<td>2007-2008</td>
<td>Faculty representatives from the two new departments</td>
<td>Work through the details of the separation</td>
</tr>
<tr>
<td>2008</td>
<td>Faculty and the Dean of Arts and Sciences</td>
<td>Department agree to create two new Ph.D. degrees</td>
</tr>
<tr>
<td>2009</td>
<td>IB Graduate Committee</td>
<td>Discuss new Ph.D.</td>
</tr>
<tr>
<td>2010</td>
<td>IB Graduate committee</td>
<td>Select CIP Code</td>
</tr>
<tr>
<td>2011</td>
<td>IB Faculty</td>
<td>Vote to accept new CIP Code and authorize the Graduate Director to prepare this document</td>
</tr>
</tbody>
</table>

### Events Leading to Implementation

<table>
<thead>
<tr>
<th>Date</th>
<th>Implementation Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>IB Department approved the new Ph.D. in Integrative Biology</td>
</tr>
<tr>
<td>2012</td>
<td>IB Graduate Director preparation of this proposal</td>
</tr>
<tr>
<td>2013</td>
<td>Implementation of the Ph.D. in Integrative Biology</td>
</tr>
</tbody>
</table>

### VII. Program Quality Indicators - Reviews and Accreditation

Identify program reviews, accreditation visits, or internal reviews for any university degree programs related to the proposed program, especially any within the same academic unit. List all recommendations and summarize the institution's progress in implementing the recommendations.

The former Department of Biology was reviewed periodically as required by Southern Association of Colleges and Schools (SACS). The last review was during the 2005-2006 academic year. Because the Department of Integrative Biology is only a few years old it has not been evaluated by any outside group or accrediting agencies. We expect the next review to be in 2014 or 2015. All aspects of graduate studies are monitored by a Graduate Admission and Policy Committee (GAPC). The GAPC is chaired by the Graduate Director and consists of three additional graduate faculty members appointed by the Chair of the Department of Integrative Biology. The graduate students elect a member to the GAPC. The students participate in all discussions and decisions except for graduate admissions. The Graduate Director and the GAPC work closely with a full-time Graduate Program Assistant. The Associate Dean for Academic Affairs in the College of Arts and Sciences, Dr. Robert Potter, oversees all graduate programs within the College. Programmatic oversight is provided by a committee composed of the Graduate Directors from the academic departments that form the School of Natural Sciences and Mathematics (SNSM). The Provost, as chief academic officer, is the administrator responsible for program quality at the institutional level.
VIII. Curriculum

A. Describe the specific expected student learning outcomes associated with the proposed program. If a bachelor’s degree program, include a web link to the Academic Learning Compact or include the document itself as an appendix.

Outcome 1. Students will present a comprehensive dissertation proposal to their Graduate Committee that is judged to be an adequate base for the dissertation.

Outcome 2. Students will present and pass a dissertation proposal seminar presented to the Department of Integrative Biology and evaluated by the Graduate Committee.

Outcome 3. Students will pass a qualifying exam administered by the Graduate Committee. The exam includes knowledge of basic biology and focuses on the students’ area of expertise.

Outcome 4. Students will present a dissertation seminar to the Department and defend it to the satisfaction of the Graduate Committee.

Outcome 5. Students will produce a dissertation that contains two or more publishable research papers.

Ph.D. students in the Department of Integrative Biology are evaluated on several distinct learning outcomes. In sum, doctoral students are required to complete the requirements for admission to candidacy by the end of their second year of residence. To complete the requirements the students must 1) write a dissertation proposal, 2) present a Dissertation Proposal Seminar detailing the methods to be used for the dissertation research to the Department, and 3) successfully pass an oral exam administered by the student’s Graduate Committee. Once the research and all course work have been complete the student 4) presents a Defense of Dissertation Seminar to the Department and must defend the dissertation to the satisfaction of the Graduate Committee. At least one research paper, authored by the student, must be accepted for publication by the time of graduation for a student to graduate. The rubrics used to evaluate each student are presented below.

Integrative Biology Qualifying Exam Scoring Rubric


Explanation:
The student will be evaluated and scored in 3 distinct outcomes: Dissertation Proposal, oral examination and seminar presentation.

Scoring will be based on a scale of 0-4, with 4 being the highest score. Minimum passing score on each of the 3 outcomes, averaged across the four members of the student’s Graduate Committee, must be 2 or higher.

General and discipline specific scientific knowledge on the Dissertation Proposal
4. shows exceptional mastery of the general scientific knowledge and the discipline specific concepts

3. shows a firm understanding of both the general scientific knowledge and the discipline specific concepts

2. shows adequate mastery of the general scientific knowledge but discipline specific knowledge has gaps

1. shows poor knowledge of both the general scientific knowledge and the discipline specific concepts

0. shows minimal understanding of both general scientific knowledge and the discipline specific concepts

**Problem solving** (ask valid questions, synthesize information, respond to questions)

4. responds incisively to questions, synthesizes information quickly and accurately, responds well to questions

3. responds well to the prompt, synthesis goes beyond the obvious, provides good responses to questions

2. responds adequately to the prompt, synthesis is adequate, provides adequate, but minimal response to questions

1. answers to questions are not focused, synthesis is incomplete and vague, responses to questions are imprecise

**Organization, writing skills**

4. shows exceptional ability to organize and communicate clearly and concisely both in writing and verbally

3. shows distinct units of thoughts in paragraphs, coherently arranged, occasional grammar errors, some wordiness

2. writing uneven, paragraphs effective, but brief, occasional imprecise word choice, awkward syntax, wordy

1. major and minor grammar problems, repetitive sentence pattern, frequent imprecise word choice, wanders

0. writing arbitrary, no paragraph structure, no transition, numerous grammatical errors, stylistic problem
Biology Qualifying Exam Scoring Rubric

2. Oral exam: Seminar Performance (Part 2 of 3 parts)

Scoring will be based on a scale of 0-4, with 4 being the highest score. Minimum passing score on each of the 4 outcomes, averaged across the four members of the student Graduate Committee, must be 2 or higher.

Scoring Criteria:

General and discipline specific scientific knowledge

4. shows exceptional mastery of the general scientific knowledge and the discipline specific concepts

3. shows a firm understanding of both the general scientific knowledge and the discipline specific concepts

2. shows adequate mastery of the general scientific knowledge but discipline specific knowledge has gaps

1. shows poor knowledge of both the general scientific knowledge and the discipline specific concepts

0. shows minimal understanding of both general scientific knowledge and the discipline specific concepts

Problem solving (ask valid questions, synthesize information, respond to questions)

4. responds incisively to questions, synthesizes information quickly and accurately, responds well to questions

3. responds well to the prompt, synthesis goes beyond the obvious, provides good responses to questions

2. responds adequately to the prompt, synthesis is adequate, provides adequate, but minimal response to questions

1. answers to questions are not focused, synthesis is incomplete and vague, responses to questions are imprecise

0. misunderstands basic concepts, synthesize of information is lacking, respond to questions with numerous errors

Organization and oral communication skills

4. shows exceptional ability to organize and communicate clearly and concisely

3. shows strong communication skills, well-conceived ideas but presentation
could be improved

2. some disconnect between ideas, needs to refine oral communication skills

1. hard to follow train of thought, responses to questions not coherent

0. inadequately prepared, no evidence of ability to think laterally

Biology Qualifying Exam Scoring Rubric


Scoring will be based on a scale of 0-4, with 4 being the highest score. Minimum passing score on each of the 4 outcomes, averaged across the four members of the student Graduate Committee, must be 2 or higher.

General and discipline specific scientific knowledge

4. shows exceptional mastery of the general scientific knowledge and the discipline specific concepts

3. shows a firm understanding of both the general scientific knowledge and the discipline specific concepts

2. shows adequate mastery of the general scientific knowledge but discipline specific knowledge has gaps

1. shows poor knowledge of both the general scientific knowledge and the discipline specific concepts

0. shows minimal understanding of both general scientific knowledge and the discipline specific concepts

Problem solving (asks valid questions, synthesize information, respond to questions)

4. responds incisively to questions, synthesizes information quickly and accurately, responds well to questions

3. responds well to the prompt, synthesis goes beyond the obvious, provides good responses to questions

2. responds adequately to the prompt, synthesis is adequate, provides adequate, but minimal response to questions

1. answers to questions are not focused, synthesis is incomplete and vague, responses to questions are imprecise
0. misunderstands basic concepts, synthesize of information is lacking, respond to questions with numerous errors

Organization and oral communication skills

4. shows exceptional ability to organize and communicate clearly and concisely

3. shows strong communication skills, well-conceived ideas but presentation could be improved

2. some disconnect between ideas, needs to refine oral communication skills

1. hard to follow train of thought, responses to questions not coherent

0. inadequately prepared, no evidence of ability to think laterally

B. Describe the admission standards and graduation requirements for the program.

For admission into the Ph.D. program it is expected that applicants will have completed courses equivalent to those required for the B.S. in Biology at U.S.F.

3.0 GPA last 60 hours of B.S. degree

GRE scores that place the student in the 70th percentile in verbal, analytical and the quantitative sections of the exam are expected.

Acceptance by a faculty member in the Department of Integrative Biology is mandatory. Students are expected to contact faculty via e-mail to indicate an interest in the research being conducted in their laboratory. The department will make every effort to pair potential graduate students with appropriate faculty.

FOR INTERNATIONAL STUDENTS: The TOEFL is required with a minimum score of 88 (internet version), 570 (paper version).

To graduate from the Department of Integrative Biology with a Ph.D. a student must complete the following requirements.

A total of 90 semester hour credits beyond the B.S. Degree are required.

The graduate student, major professor and Graduate Committee will establish the specific course requirement for each graduate student. Every graduate student must satisfy minimum course requirements. The Graduate Committee consists of four individuals; three must be members of the Integrative Biology Department

A minimum of twenty-four (24) dissertation research hours is required, as is a minimum of 10 credit hours of course work.
Submission and approval of a dissertation research proposal by Major Professor, Graduate Committee, and Graduate Director.

Successful completion of the defense of dissertation examination, by the end of the 4th semester. The exam consists of a 3 parts: 1. Dissertation proposal; 2. Seminar and 3. Defense of Dissertation proposal (details are provided above)

Admission to candidacy

Presentation requirement: two presentations, excluding the doctoral defense and presentation. Students should present posters or oral presentations based on their dissertation research at national/regional professional meetings. The Graduate Committee must approve the presentation.

Publication requirement: one paper must be submitted for publication to a refereed scientific journal by the date of the Doctoral Seminar Presentation and Defense. The paper may be sole or co-authored, but it must be based on the dissertation research. The Graduate Committee must approve the journal to which the paper is submitted.


C. Describe the curricular framework for the proposed program, including number of credit hours and composition of required core courses, restricted electives, unrestricted electives, thesis requirements, and dissertation requirements. Identify the total numbers of semester credit hours for the degree.

D. Provide a sequenced course of study for all majors, concentrations, or areas of emphasis within the proposed program.

The Ph. D. requires 90 semester hours credit beyond the B.S. Degree. All students are required to take PCB 6456 Biometry I and BSC 6932 Lectures in Contemporary Biology four times (i.e. four semesters). This course consists of scientifically rigorous lectures presented by USF faculty or colleagues from other universities who present a seminar to the Department each week. Doctoral students are required to write critiques of the lectures that are graded and returned to the students. Also, we require an additional six hours of structured course work. The structured courses are listed below for each of the three concentrations. Doctoral student typically will take between 20 -25 semester hours of course work selected from the lists of courses presented below. The remainder of the required 90 hours is obtained through research credits.

Graduate students concentrating in the area of Ecology and Evolution will select from the following list of courses:

Any course approved by the Graduate Committee
BSC 5931 – Conservation Biology (3 semester hours). A Lecture/discussion course dealing with theoretical and applied aspects of the conservation of plants and animals.

BOT 5185 – Marine Botany (4). A lecture/laboratory class designed to examine marine ecosystems with a focus on Florida systems.

PCB 6455 – Statistical Ecology (3). A lecture/laboratory course designed to provide students with a background in data analyses, focusing on encountered data.

PCB 6458 – Biometry II (3). Lecture course that focuses on experimental design and analyses of complex data sets.

BSC 5931 – Comparative approaches in Evolution (3). A lecture/discussion course that focuses on contemporary issues in evolutionary biology.

PCB 6426 – Population ecology (3). A lecture/discussion course that focuses on modern methods to analyze population trends.

ZOO 5463 – Herpetology (4). A lecture/laboratory course that describes the evolutionary history of amphibians and reptiles and focuses on extant species in North America and Florida.

ZOO 5456 – Ichthyology (4) A lecture/laboratory course that describes the evolutionary history of the fishes and focuses on extant species in North America and Florida.

BSC 6932 – Advances in Population Biology (1). Reading/discussion of contemporary literature in population biology.

BSC 6932 – Advances in Ichthyology (1) Reading/discussion of contemporary literature in ichthyology.

BSC 6932 – Advances in Herpetology (1) Reading/discussion of contemporary literature in herpetology.

BSC 6932 – Advanced in Marine Ecology (1) Reading/discussion of contemporary literature in marine ecology.

BSC 6932 – Scientific Writing (2) Course provides instruction on becoming a successful grant writer as well as understanding the grant proposal writing and review process.

BSC 6932 – Restoration Ecology (3). Lecture/discussion course on theoretical and practical aspects of restoring habitats and ecosystems.
BSC 6447 - Community Ecology (3). Lecture/discussion course on theoretical and empirical aspects of community composition.

PCB 6933 – Seminar in Ecology (variable credit). Readings/discussion course on any contemporary issue in ecology.

Graduate students concentrating in the area of Environmental and Ecological Microbiology will select from the following list of courses:

Any course approved by the Graduate Committee

MCB 5206 – Public Health and Pathogenic Microbiology (3) This course emphasizes microbial threats to public health, established and emerging pathogens, and infectious disease mechanisms and processes.

MCB 5655 – Applied and Environmental Microbiology (3). This course emphasizes new concepts and recent findings in applied and environmental microbiology, and microbial ecology. Students discuss recent journal articles and present data from research projects.

PCB 5235 – Principles of Immunology (3) Students learn the detailed mechanisms of immunological responses to various environmental stimuli and pathogens. Readings in the primary literature serve as a basis for classroom discussions.

MCB 6930 – Seminar in Applied and Ecological Microbiology (1) Primary literature provides the basis for studying recent findings in applied and environmental microbiology, and microbial ecology. Students discuss recent journal articles and present data from research projects.

PCB 5525 – Molecular Genetics (3). A detailed introduction into contemporary theory and practice in modern techniques to uncover genetic relatedness among and between organisms.

BSC 5931 – Genomics (4). This course provides a review of the basic mechanisms of molecular/genome evolution, which is used to provide an understanding of the tools that facilitate gene/genome analysis (BLAST searches, gene alignments, gene families, phylogenetic analysis. These concepts are then applied as a final project whose topic is chosen by the students.

PCB 6455 – Statistical Ecology (3). A lecture/laboratory course designed to provide students with a background in data analyses, focusing on encountered data.

PCB 6458 – Biometry II (3). Lecture course that focuses on experimental design and analyses of complex data sets.
BSC 6932 – Scientific Writing (2) Course provides instruction on becoming a successful grant writer as well as understanding the grant proposal writing and review process.

BSC 6932 – Advances in Environmental Ecology (1). Current literature provides the basis for class presentations by students followed by student lead discussion of the topic of the day.

Graduate students concentrating in the area of Physiology and Morphology will select from the following list of courses:

Any course approved by the Graduate Committee

PCB 6458 – Biometry II (3). Lecture course that focuses on experimental design and analyses of complex data sets.

BSC 6932 – Scientific Writing (2) Course provides instruction on becoming a successful grant writer as well as understanding the grant proposal writing and review process.

ZOO 5463 – Herpetology (4). A lecture/laboratory course that describes the evolutionary history of amphibians and reptiles and focuses on extant species in North America and Florida

ZOO 5456 - Ichthyology (4) A lecture/laboratory course that describes the evolutionary history of the fishes and focuses on extant species in North America and Florida

ZOO 5475 – Ornithology (3) A lecture/laboratory course that describes the evolutionary history of the birds and focuses on extant species in North America and Florida

PCB 5256 – Developmental Biology (3). This course explores contemporary literature into molecular developmental biology with an emphasis on the evolutionary history of organisms.

BSC 6932 – Physiological Ecology (3.) Physiological ecology explores how organisms cope with environmental change in natural environments and why variation exists among individuals, populations and species.

BSC 6932 – Advances in Physiology (1). Readings in current physiology literature serves as the basis for classroom presentations and discussion of the topic of the day.

BSC 6932 – Ecoimmunology (3). Ecological immunology addresses why vulnerability to infection, injury, and damage exists in natural populations
and what ecological and evolutionary forces explain recurrent patterns of immunological variation in non-model organisms.

BSC 5931 – Comparative Approaches in Evolution (3). Lecture/discussion course on theoretical and empirical aspects of modern methods to study evolutionary processes.

BSC 5931 – Ecological and Functional Morphology (3). This course focuses on the fundamental concepts of biomechanics, ecological and functional morphology, and explores the ecological ramifications and limitations imposed by morphology.

To satisfy the integrative approach taken by the faculty in our Department graduate students frequently take courses from other departments. For example many students in the Physiology and Morphology Concentration Area take courses in the College of Engineering or the College of Medicine; students in the Ecology and Evolution Area take courses in Geography, and students in the Environmental and Ecological Microbiology Area take courses in the College of Public Health or in the Cell Biology, Microbiology, and Molecular Biology Department.

Insert response here.

E. Provide a one- or two-sentence description of each required or elective course.

Each course is described briefly in the above listings of courses.

F. For degree programs in the science and technology disciplines, discuss how industry-driven competencies were identified and incorporated into the curriculum and indicate whether any industry advisory council exists to provide input for curriculum development and student assessment.

Because Integrative Biology graduates are employed in a large variety of fields, including several different types of industry, no specific industry driven standards exist to guide curriculum development. As a result, the doctoral program does not have an industry driven council. The Department of Integrative Biology faculty strives to produce independent creative thinkers who can contribute to their chosen field after graduation. Students learn how to apply various research tools that prepare them for a variety of professions. Students in the Ecology and Evolution Area of Concentration, for example may learn modern molecular techniques or master the application of GIS to enhance their skills as a professional ecologist. Students in any of the three areas of concentration learn to analyze data using the most modern methods of analysis, and are thusly prepared for their professional life. Because many of our graduates seek and earn academic positions, they are provided extensive training to become good teachers. Our students attend teaching enhancement workshops offered through the University and are closely monitored as they perform their duties as teaching assistants.
G. For all programs, list the specialized accreditation agencies and learned societies that would be concerned with the proposed program. Will the university seek accreditation for the program if it is available? If not, why? Provide a brief timeline for seeking accreditation, if appropriate.
NA

H. For doctoral programs, list the accreditation agencies and learned societies that would be concerned with corresponding bachelor’s or master’s programs associated with the proposed program. Are the programs accredited? If not, why?

No specific accreditation agencies exist for biology programs at any level. Beta, Beta, Beta, is a National Honor Society for biologists, primarily undergraduates, and USF is a member of that society.

I. Briefly describe the anticipated delivery system for the proposed program (e.g., traditional delivery on main campus; traditional delivery at branch campuses or centers; or nontraditional delivery such as distance or distributed learning, self-paced instruction, or external degree programs). If the proposed delivery system will require specialized services or greater than normal financial support, include projected costs in Table 2 in Appendix A. Provide a narrative describing the feasibility of delivering the proposed program through collaboration with other universities, both public and private. Cite specific queries made of other institutions with respect to shared courses, distance/distributed learning technologies, and joint-use facilities for research or internships.

The doctoral program in Integrative Biology relies on the traditional delivery system on the main (Tampa) Campus. No plans exist to collaborate with other universities or to deliver the Ph.D. program online.

IX. Faculty Participation

A. Use Table 4 in Appendix A to identify existing and anticipated ranked (not visiting or adjunct) faculty who will participate in the proposed program through Year 5. Include (a) faculty code associated with the source of funding for the position; (b) name; (c) highest degree held; (d) academic discipline or specialization; (e) contract status (tenure, tenure-earning, or multi-year annual [MYA]); (f) contract length in months; and (g) percent of annual effort that will be directed toward the proposed program (instruction, advising, supervising internships and practica, and supervising thesis or dissertation hours).

B. Use Table 2 in Appendix A to display the costs and associated funding resources for existing and anticipated ranked faculty (as identified in Table 2 in Appendix A). Costs for visiting and adjunct faculty should be included in the category of Other Personnel Services (OPS). Provide a narrative summarizing projected costs and funding sources.

Table 2 displays the base E&G funds for the Ph.D program, including $538,112, for faculty salaries, $24,660, for the graduate program assistant salary and $351,426 for graduate research assistantship salaries for a total of $914,198. A total of 3.1 person years is dedicated to the Ph.D program. The E&G cost per
FTE is $40,631 in year one and declines to $29,147 in year five.

C. Provide in the appendices the curriculum vitae (CV) for each existing faculty member (do not include information for visiting or adjunct faculty).

D. Provide evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service. Such evidence may include trends over time for average course load, FTE productivity, student HC in major or service courses, degrees granted, external funding attracted, as well as qualitative indicators of excellence.

Below is a table that represents faculty productivity during the past five years, including the number of reviewed research papers (articles), book chapters, and books published, along with theses and dissertations directed by each member of the Department of Integrative Biology. We have provided a summary of the extramural funds obtained by the faculty on pages 11 and 12 above.

The Department of Integrative Biology currently has 40 Ph.D. students and 18 MS degree students. The number of graduate students has been fairly constant over the past five years and is limited exclusively by the number of faculty in the department. Each faculty member maintains an active research laboratory.

<table>
<thead>
<tr>
<th>NAME</th>
<th>THESES</th>
<th>DISSERTATIONS</th>
<th>PUBLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bell</td>
<td>9</td>
<td>6</td>
<td>10 articles, 2 book chapters</td>
</tr>
<tr>
<td>Crisman</td>
<td>3</td>
<td>7</td>
<td>6 articles, 8 book chapters</td>
</tr>
<tr>
<td>Deban</td>
<td>5</td>
<td>1</td>
<td>10 articles</td>
</tr>
<tr>
<td>Fox</td>
<td>5</td>
<td>3</td>
<td>7 Articles, 1 book, 2 chapters</td>
</tr>
<tr>
<td>Harwood</td>
<td>1</td>
<td>11</td>
<td>28 articles, 1 book, 5 chapters</td>
</tr>
<tr>
<td>Lajeunesse</td>
<td>0</td>
<td>0</td>
<td>12 articles, 5 book chapters</td>
</tr>
<tr>
<td>Lewis</td>
<td>1</td>
<td>1</td>
<td>6 articles</td>
</tr>
<tr>
<td>Martin</td>
<td>4</td>
<td>3</td>
<td>40 articles, 3 book chapters</td>
</tr>
<tr>
<td>McCoy*</td>
<td>16</td>
<td>4</td>
<td>17 articles, 4 book chapters</td>
</tr>
<tr>
<td>Motta</td>
<td>2</td>
<td>5</td>
<td>28 articles, 2 book chapters</td>
</tr>
<tr>
<td>Mushinsky*</td>
<td>16</td>
<td>4</td>
<td>15 articles, 3 Book chapters</td>
</tr>
<tr>
<td>Pierce</td>
<td>2</td>
<td>1</td>
<td>9 articles</td>
</tr>
<tr>
<td>Richards</td>
<td>0</td>
<td>0</td>
<td>11 articles, 2 book chapters</td>
</tr>
<tr>
<td>Rohr</td>
<td>1</td>
<td>2</td>
<td>37 articles, 1 book chapter</td>
</tr>
<tr>
<td>Scott</td>
<td>4</td>
<td>2</td>
<td>10 articles, 1 book chapter</td>
</tr>
<tr>
<td>Stiling</td>
<td>4</td>
<td>9</td>
<td>34 articles, 2 books</td>
</tr>
</tbody>
</table>

X. * Drs. McCoy and Mushinsky co-advise their graduate students

Below is a table listing the graduate course taught by professors in the Department of Integrative Biology
XI. Non-Faculty Resources

A. Describe library resources currently available to implement and/or sustain the proposed program through Year 5. Provide the total number of volumes and serials available in this discipline and related fields. List major journals that are available to the university’s students. Include a signed statement from the Library Director that this subsection and subsection B have been reviewed and approved.

University of South Florida Libraries
New Degree Program for the Department of Integrative Biology
Doctoral Degree – Integrative Biology
Overview of USF Libraries, Mission, and Program/Discipline Strengths

The University of South Florida is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award degrees at the baccalaureate, masters, specialist, and doctoral levels, including the Doctor of Medicine. The institution was initially accredited in 1965 and was last reviewed and reaffirmed in 2005. The institution is scheduled to receive its next reaffirmation of accreditation review in 2015.

The University of South Florida’s Library System consists of USF’s main research library, located on the Tampa Campus; two special libraries, the Hinks and Elaine Shimberg Health Sciences Library and the Louis de la Parte Mental Health Institute Library, which are also located on the Tampa Campus; the Nelson Poynter Memorial Library, USF St. Petersburg; the Jane Bancroft Cook Library, USF Sarasota-Manatee; and the USF Polytechnic Library in Lakeland. Our vision is to become a globally recognized academic library system advancing knowledge through integrated resources, responsive services, research, and instruction.

Together, the USF Libraries provide access to more than 2 million volumes and an extensive collection of electronic resources including approximately 6,500 e-journal subscriptions and 800 aggregator databases containing another 53,000 unique e-journal titles, 443,000 e-books, and 826,000 digital images. In addition, students have access to over 45,000 audio/visual materials including videos, CDs, and DVDs.

In addition to extensive electronic and print resources, the USF Libraries offer unique access to primary research materials through the Special and Digitized Collections Department. Specializations include: Holocaust & Genocide Studies, Science Fiction, Oral Histories, Florida Studies, Sacred Leaves medieval manuscripts, literature and book arts, children and young adult literature, sheet music, and rare books. Most special collections are available at the USF Tampa Library.

The library endeavors to develop and maintain a collection that will satisfy the needs for resources that support the undergraduate and graduate curriculum in the Department of Integrative Biology as well as serve the more specialized demands from graduate students and faculty for advanced research materials.
The Department of Integrative Biology currently offers the following graduate degrees:

The **Master of Science (M.S.) in Biology** offers three areas of concentration: ecology and evolution, environmental and ecological microbiology, and physiology and morphology.

The **Doctor of Philosophy (Ph.D.) in Biology** offers three areas of concentration: ecology and evolution, environmental and ecological microbiology, and physiology and morphology.

The research expertise of the Department of Integrative Biology faculty emphasizes organismal interactions and adaptations to the environment. Current faculty research interests include: marine and freshwater ecology; restoration ecology; population ecology; plant-animal interactions; community ecology; plant systematics; conservation biology; ecotoxicology; biomechanics and functional morphology; environmental microbiology; microbial physiology; and gene transfer.

Changing the title of the current Doctor of Philosophy in Biology to the Doctor of Philosophy in Integrative Biology would reflect the focus of the Department’s current research and would allow for more accurate comparisons to peer institutions across the country.

**USF Libraries Collections**

The library collects current research materials in all subject areas within the Library of Congress subject classifications relating to the biological sciences. These include materials in the call number areas QH-QR. Library of Congress call number areas for the subject areas of Ecology, Evolution, Systematics, and Population Biology are:

- **Ecology** QH540-549.5
- **Evolution** QH359-425
- **Systematics** QH 83; QK91-97; QL351-352
- **Population Biology** QH 352-353

Emphasis is on acquiring and maintaining a robust collection of electronic journals and in developing a strong research monographic eBook collection representing the important trade, university and professional presses. Datasets, conference proceedings, technical reports, dissertations, reference works, graduate textbooks, audio-visual materials are acquired selectively.

> **Number of Books in Biological Science**

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<th>Type</th>
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**eBook Collections include**: Springer eBooks in Biomedical and Life Sciences, Springer eBooks in Earth and Environmental Sciences, Annual Reviews, NetLibrary

> **Number of Journals in Biological Science**

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EJournal Packages include: SpringerLink, Science Direct, Wiley Online Library, JSTOR Biological, JSTOR Botany and Plant Sciences, JSTOR Ecology and Evolutionary Studies, JSTOR Zoology

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* Catalog

➤ Number of Electronic Databases in Biology - over 50 major databases in the Biological Sciences, including:

AGRICOLA
AGRICOLA provides literature citations for journal articles, monographs, proceedings, theses, patents, translations, audiovisual materials, computer software, and technical reports pertaining to all aspects of agriculture. Algology, Mycology & Protozoology Abstracts (Microbiology C)
Algology, Mycology and Protozoology is a resource for microbiologists and researchers in immunology, pathology, environmental research, toxicology, and other related fields.

**Animal Behavior Abstracts**
Animal Behavior Abstracts surveys all of the important journals dealing with the biology of particular taxonomic groups.

**ASFA : Aquatic sciences and Fisheries Abstracts**
ASFA is a component of the Aquatic Sciences and Fisheries Information System

**ASFA Aquaculture Abstracts**
ASFA Aquaculture Abstracts contains information essential to all aspects of marine and freshwater aquaculture is covered in ASFA Aquaculture Abstracts.

**ASFA Marine Biotechnology Abstracts**
ASFA Marine Biotechnology benefits all researchers and managers concerned with the science, technology, and management of marine environments.

**ASFA. 1, Biological Sciences and Living Resources**
ASFA 1 provides extensive coverage of all aspects of marine, freshwater, and brackish water organisms and environments are examined, including information on biology and ecology of aquatic organisms, exploitation of living resources, and related legal, policy, and socioeconomic issues.

**ASFA. 2, Ocean technology, policy and non-living resources**
ASFA 2 is the source that puts professionals in touch with effective management solutions, alerts them to problems, and updates them on new legislation that affects management practices.

**ASFA. 3, Aquatic Pollution and Environmental Quality**
ASFA 3 contains information that will prove information on aquatic environments and marine pollution problems.

**Biological & Agricultural Index Plus**
Biological & Agricultural Index covers a wide range of specialties: Biochemistry; Biology; Botany; Ecology; Entomology; Environmental Science; Fishery Sciences; Genetics; Limnology; Marine Biology; Soil Science; Wildlife Management; Zoology

**Biological Sciences**
This interdisciplinary database offers abstracts and citations to a wide range of research in biomedicine, biotechnology, zoology and ecology, agriculture and veterinary science.

**BioOne Abstracts**
The BioOne bibliographic database is an indexed and fully-searchable collection of abstracts that link to the full-text articles from the BioOne organization, providing an aggregation of over 82 high-impact bioscience research journals.

**BIOSIS Previews**
BIOSIS Previews is the online version of Biological Abstracts and Biological Abstracts/RRM (reports, reviews, and meetings). BIOSIS Previews indexes over 6000 journals covering biological and medical research, and discoveries of new organisms.

**Ecology Abstracts**
Ecologists will find in this resource the essence of current ecology research across a wide range of disciplines, reflecting recent advances in light of growing evidence regarding global environmental change and destruction.
The federal government issues hundreds of environmental impact statements each year and this one resource provides detailed abstracts of all of those statements.

**Entomology Abstracts**
Entomology Abstracts recent research reports covering insects, arachnids, myriapods, onychophorans, and terrestrial isopods.

**Environmental Engineering Abstracts**
Environmental engineering abstracts covers the technological and engineering aspects of air and water quality, environmental safety, and energy production.

**Environmental Sciences & Pollution Management**
Multidisciplinary database provides comprehensive coverage of environmental sciences.

**FORMIS**
Ant Bibliography is a composite of several ant literature databases. It contains citations for a large part of the world's ant literature (about 30,000 references).

**Genetics Abstracts**
Genetics abstracts provides access to the worldwide literature of genetics, from microbes to plants to humans.

**GREENR (Global Reference on the Environment, Energy, and Natural Resources)**
Indexed online resource that integrates popular and scholarly content in subject areas related to physical, social, and economic aspects of environmental issues.

**Industrial and Applied Microbiology Abstracts (Microbiology A)**
Significant findings and practical applications in agricultural, food and beverage, chemical, and pharmaceutical industries.

**Kew Record of Taxonomic Literature**
The Kew record of taxonomic literature database contains references to all publications relating to the taxonomy of flowering plants, gymnosperms and ferns.

**Oceanic Abstracts**
Provides citations and abstracts to the international technical literature on marine and brackish-water environments. Focuses on marine biology and physical oceanography, fisheries, aquaculture, non-living resources, meteorology and geology.

**Plant Science**
Plant Science contains citations and abstracts of scientific literature on plant science, focusing on all plant scientific aspects, especially on pathology, symbiosis, biochemistry, genetics, biotechnology, techniques and environmental biology.

**Pollution Abstracts**
Pollution Abstracts combines information on scientific research and government policies. Topics covered: atmosphere, emissions, mathematical models, effects of pollution on people & animals, and environmental action on global pollution issues.

**Sea turtle Bibliography**
Developed by the Archie Carr Center for Sea Turtle Research at the University of Florida; includes all aspects of sea turtle biology, conservation and management.

**TOXLINE**
Major areas of subject coverage include: air pollution, environmental chemicals
and pollutants, genotoxicity, hazardous materials, health and safety, human and animal toxicity, industrial and household chemicals, and risk information.

**Water Resources Abstracts**
Subject coverage include: groundwater, lakes, estuaries, erosion and sedimentation, water supply and conservation, desalination, water yield improvement, water quantity management and control, watershed protection, water quality management, water resources planning, water law, engineering works and hydraulics.

**Web of Science**
ISI Web of Science provides seamless access to the Science Citation Expanded®, Social Sciences Citation Index®, and Arts & Humanities Citation Index™. It enables users to search current and retrospective multidisciplinary information from approximately 8,500 of the most prestigious, high impact research journals in the world.

**Zoological Record**
Comprehensive coverage of worldwide zoological literature, including scientific journals, popular journals, monographs, books, newsletters, conferences, selected dissertations, review annuals, and reports.

- **Related Databases - School of Natural Sciences & Mathematics (SNSM)**
The Doctor of Philosophy in Integrative Biology would be most closely aligned with the Global Change Science and the Computational Theory & Practices research clusters. The disciplines included in these research clusters include: Chemistry, Physics, Mathematics & Statistics, and Geology.
In addition to the databases in the biological sciences, the USF Libraries support this research focus by providing access to the premier databases and journals in these related science disciplines: SciFinder Scholar (Chemistry), GeoRef (Geology), MathSciNet (Mathematics & Statistics), Medline (Health), Inspec, IEEE-Explore (Engineering), IOP Journals (Physics), ProQuest Dissertations & Theses (full text).

- **Datasets, Maps & GIS**
The USF Library is one of the founding partners of the Karst Information Portal (KIP), which is an open-access digital library linking scientists, managers, and explorers to a knowledge base of highly interdisciplinary research information on karst environments.
The USF Libraries have also established a central repository for unbiased information and data on the BP Deepwater Horizon oil spill in the Gulf of Mexico. The Gulf Oil Spill Information Center (GOSIC) provides access to the latest information on the Gulf oil spill, published research and grey literature on the topic. GOSIC has also laid the groundwork for formation of a repository for geospatial data associate with the oil spill. This geo-spatial portal will also provide other STEM disciplines, including the biological sciences, with a repository for the data sets needed to support their research.

- **Government Documents**
The USF Tampa Library is a designated Federal Depository Library. The materials that are received from the Government Printing Office are selected based on the research needs of the university. The library routinely receives publications from the Department of Interior, the United States Geological Survey, the Environmental Protection Agency and the Department of Agriculture, which include research surveys, technical reports, statistical data, and maps.
addition to recent publications, the library also maintains an historical collection of research materials in the natural sciences.

**Expenditures**
In any given year, the USF Libraries materials budget is pushed to its limit. The rising cost of continuing journal subscriptions, the need for new research materials, and requests for access to online data sets are part of the daily landscape. A large portion of the USF Libraries’ 6.2 million budget supports the continuation of the electronic resources. The biological sciences are well represented throughout the USF Libraries electronic collections. The USF Libraries recognize the need to continue their support for research and teaching within the STEM disciplines and have included several STEM initiatives in their strategic goals. The Karst Information Portal and the Gulf Oil Spill Information Center are more outward examples of the USF Libraries’ commitment to science and technology. Another primary research area that has been identified is Global Change Science. The USF Library has also included Global Change Science as one of its strategic goals and is currently working on the development of collections in marine and freshwater ecological research to provide research support for the study of the effects of climate change on plant and animal habitats.

**Summary Statement**
Recognizing the value and importance of research in biology, the USF Libraries will continue a sustained level of support for doctoral research in Integrative Biology, along with allied and associated subject areas and disciplines. Within the next five years, the expectation would be for a continued level of support for this discipline. An increase in the cost of the library’s journal subscriptions would be anticipated, with typical annual increases of 3-6%. There are several new journals that should be added to support the Global Change initiative, including “Nature’s Climate Change.” The acquisition of additional resources would have to be balanced against the research needs of other academic disciplines on campus within the confines of any budgetary restraints that the university could face during the next five years.
B. Describe additional library resources that are needed to implement and/or sustain the program through Year 5. Include projected costs of additional library resources in Table 3 in Appendix A.

No new library resources are needed to sustain the new degree, the USF library has an outstanding record of provided the needed resources for the biology faculty.

A. Describe classroom, teaching laboratory, research laboratory, office, and other types of space that are necessary and currently available to implement the proposed program through Year 5.
We currently have eight classrooms that, among other things, are used for Ph.D. level instruction. There are also three large auditoriums that the department shares with other departments for departmental research seminars.

Each faculty has office space, a computer and access to the needed software to support his/her teaching and research. Near the office of each faculty member is a laboratory that is used by a faculty member and his/her graduate students for their research. Doctoral students are provided space in the lab, access to the computers in the lab, and if a TA, an additional office for meeting with the students in her/his classes. Each doctoral student has a dedicated computer and supporting software. All faculty members and graduate students have access to a shared printer, a fax machine, and a copier. All research labs have printers.

The Department of Integrative Biology also oversees a 500 acre tract of land located within 2 miles of the campus that serves as a research site for some of the ecology doctoral students. The USF Botanical Garden also provides space for research; a new greenhouse was just built to support the research of a new faculty member and her students. The Department owns six vehicles which can be used by faculty or graduate students for research. Students working on freshwater or marine research projects have access to three boats.

A. Describe additional classroom, teaching laboratory, research laboratory, office, and other space needed to implement and/or maintain the proposed program through Year 5. Include any projected Instruction and Research (I&R) costs of additional space in Table 2 in Appendix A. Do not include costs for new construction because that information should be provided in response to X (J) below.

No additional space of any kind is needed to implement or maintain the proposed program through Year 5.

B. Describe specialized equipment that is currently available to implement the proposed program through Year 5. Focus primarily on instructional and research requirements.

The following table is a summary of the equipment available for graduate students to use for their research.
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C. Describe additional specialized equipment that will be needed to implement and/or sustain the proposed program through Year 5. Include projected costs of additional equipment in Table 2 in Appendix A.

None

D. Describe any additional special categories of resources needed to implement the program through Year 5 (access to proprietary research facilities, specialized services, extended travel, etc.). Include projected costs of special resources in Table 2 in Appendix A.

None

E. Describe fellowships, scholarships, and graduate assistantships to be allocated to the proposed program through Year 5. Include the projected costs in Table 2 in Appendix A.

The Department of Integrative Biology has 29 teaching assistantships used to support graduate students who teach undergraduate laboratories.

F. Describe currently available sites for internship and practicum experiences, if appropriate to the program. Describe plans to seek additional sites in Years 1 through 5.

The Department of Integrative Biology currently usually has between 5 to 10 Research Assistantships available for graduate students, depending upon grant support. Internships and practicum experiences are not typically a part of Ph.D. programs in Integrative Biology.

G. If a new capital expenditure for instructional or research space is required,
indicate where this item appears on the university's fixed capital outlay priority list. Table 2 in Appendix A includes only Instruction and Research (I&R) costs. If non-I&R costs, such as indirect costs affecting libraries and student services, are expected to increase as a result of the program, describe and estimate those expenses in narrative form below. It is expected that high enrollment programs in particular would necessitate increased costs in non-I&R activities.

No new capital expenditure is required.
Appendix A Tabular information

H. Appendix A Tabular data. Use Table 1 in Appendix A (A for undergraduate and B for graduate) to categorize projected student headcount (HC) and Full Time Equivalents (FTE) according to primary sources. Generally undergraduate FTE will be calculated as 40 credit hours per year and graduate FTE will be calculated as 32 credit hours per year. Describe the rationale underlying enrollment projections. If, initially, students within the institution are expected to change majors to enroll in the proposed program, describe the shifts from disciplines that will likely occur.

See Table 1B. The enrolment projections are based on past experience with the Ph.D. in the Department of Biology, but the data have been filtered to reflect only those students who are working with, or have worked with, faculty that are now housed in the Department of Integrative Biology (i.e. students who studied with faculty in the Cell Biology, Molecular Biology and Microbiology doctoral program have been omitted from our calculations). No enrollment shifts will occur.
Do not include individuals counted in any PRIOR column in this COLUMN.
If numbers appear in this category, they should flow DOWN in later years.
Let predicted numbers cumulate ENROLLMENTS expected of individuals.

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| (Non-enrolled educational in any given year)* | 0 | 0 | 0 | 0 | 0 | 1

** Excludes Degree Program (expected degree program) in England.

TABLE 1-9
PROJECTIONS FOR ENROLLMENT FROM POTENTIAL SOURCES

Note: Numbers do not include individuals counted in any PRIOR column in this COLUMN.
If numbers appear in this category, they should flow DOWN in later years.
Let predicted numbers cumulate ENROLLMENTS expected of individuals.
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**Table 2**
Assistanship - took all budgeted for year

USPS = 25 of CB annual and .50 of KG annual

Faculty = %Effort in program X budgeted salary/benefits

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<td>A</td>
<td>Earl McCoy</td>
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<td>Phillip Motta</td>
<td>PhD - Zoology</td>
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<td>Professor</td>
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<td>Henry Mushinsky</td>
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<td>A</td>
<td>Christopher Osowitz</td>
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<td>Instructor</td>
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**Table 4:** Anticipated Faculty Participation
25 February 2013

Dr. Ralph Wilcox
Provost and Executive Vice President
University of South Florida
4202 E Fowler Ave, CGS 401
Tampa, FL 33620

Dear Ralph,

Faculty in Integrative Biology within our Department of Biological Sciences reviewed the proposal from USF to establish a new PhD in Integrative Biology. We understand that USF is doing this subsequent to splitting the broad discipline of Biology into two separate departments, each with its own PhD program. We agree that each sibling department should have its own PhD program.

While many of the courses in your PhD program are similar to courses offered in our PhD program, we do not see this as duplicative. By the time students are engaged in doctoral education, the courses are reflective of the research interests of the faculty who will be their dissertation mentors. Our faculty serve, as do your faculty, as external members of dissertation committees for students around the world. Our faculty would be willing to collaborate with USF faculty as external members of dissertation committees of USF students. Such participation sometimes leads to joint research proposals.

I am confident your proposed PhD program will be a success.

Sincerely yours,

Douglas Wurtzok
Provost and Executive Vice President

Office of the Provost
University Park • Miami, FL 33159 • Tel: 305-348-2151 • Fax: 305-348-2994 • www.fiu.edu

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Hi, Ralph,

We are happy to support your proposal. Our College of Arts and Sciences dean and the Chair of Biological Sciences have reviewed the proposal and have concluded that the proposed changes pose no issues for FSU. Please let me know if you need anything else from us!

Best,
Garnett
MEMORANDUM

TO: Ralph Wilcox, Ph.D.
    Provost and Executive Vice President
    University of South Florida

FROM: Tony G. Waldrop, Ph.D.
      Provost and Executive Vice President

SUBJECT: New Ph.D. Degree Program

March 5, 2013

Thank you for the opportunity to review your proposed Ph.D. degree in Integrative Biology in the College of Arts and Sciences at the University of South Florida. I shared this proposal with the deans of our Colleges of Medicine and Sciences. At this time we do not see any conflict with UCF programs.

We wish you the best with the proposed new program. Please do not hesitate to contact me if we can help in any way.

c: Dean Deborah German, College of Medicine
   Dean Michael Johnson, College of Sciences
CURRICULUM VITAE

Susan Schloemer Bell

Personal

Telephone No.  (813) 974-2542 (Office); (813) 988-3689 (Home)
email: sbell@usf.edu

Education

Institution

Clark University, Worcester, Massachusetts  Biology  B.A.1972
University of New Hampshire, Durham, NH  Zoology  M.S.1974
University of South Carolina, Columbia, SC  Marine Science  Ph.D. 1979

Dissertation topic: Biological regulation of meiofauna community structure and population dynamics in a salt marsh habitat.

Areas of Specialization

Ecology; Marine Ecology; Benthic Ecology; Seagrass Ecosystems; Mangrove Ecosystems; Landscape Ecology; Restoration Ecology

Employment

2009-2011  Chair, Department of Integrative Biology
2006-2009  Co-Chair, Department of Biology, University of South Florida
2006-2009  Division Director, Integrative Biology, University of South Florida
1998-2000  Interim Chair, Department of Biology, University of South Florida
1992-1993  Faculty Intern/Assistant Dean, College of Arts and Sciences, University of South Florida
1990-present  Professor, Department of Biology/Integrative Biology, University of South Florida.
1983-1990  Associate Professor, Department of Biology, University of South Florida.
1979-1983  Assistant Professor, Department of Biology, University of South Florida.
1979  Research Associate, Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina
1975-76  Ecological Researcher, Norwalk Health Department, Norwalk, CT.
1975  Instructor in Genetics, Norwalk Community College, Norwalk, CT.
Other Professional or Related Activities

1971  Independent study, Marine Biology course, Bermuda Biological Station.
1971  Participant on R/V Eastward Cruise.
1972-78  Graduate Teaching and Research Assistant, University of New Hampshire and University of South Carolina.
1977  Participant in Reproductive Ecology Symposium, Belle W. Baruch Institute for Marine Biology and Coastal Research, Georgetown, SC.
1979  Participant in NSF sponsored Workshop on Marine Science and Minority Schools.
1979-present  Reviewer of grants for National Science Foundation (Biological Oceanography, Ecosystems, Polar Programs, Systematics, International Programs and Small Business Programs; Marine Biology and Field Laboratories), EPA, NOAA, Florida Sea Grant, Texas Sea Grant, California Sea Grant, Hudson River Foundation, Georgia Sea Grant, South Carolina Sea Grant, New Jersey Sea Grant; North Carolina Sea Grant, Australian Research Council
1979  Participant in Marine Benthic Dynamics Symposium, Belle W. Baruch Institute for Marine Biology and Coastal Research, Georgetown, SC.
1979  Judge for "Outstanding Graduate Student Paper," American Society of Zoologists, Tampa, FL.
1981  Local arrangements committee, International Echinoderm Conference, St. Petersburg, FL.
1982  Local arrangements committee, Florida Field Biologists meeting, Tampa, FL.
1982  Member of University site visitation committee, Sea World Shark Institute, Long Key, Fl. 1983, Co-convener and Program Chairman of Benthic Ecology Meetings, Melbourne, FL.
1984-1990  Member of Executive Committee and Board of Correspondents,
International Association of Meiobenthologists


1985 Invited Speaker, Salt Marsh workshop, sponsored by Technical Subcommittees for salt marsh management of the Governor's working group for mosquito control, Vero Beach, FL

1985-1986 Member-at-large. Southeastern Estuarine Research Society

1986 Convener, Sixth International Meiobuna Conference, Tampa, Florida 1986-1988 Secretary, Southeastern Chapter, Ecological Society America


1989 Member, NSF Panel, Undergraduate Laboratory Improvement Program

1989 Visiting Scientist, National Museum of New Zealand

1989-2000 Executive committee, Center for Urban Ecology, University of South Florida, Tampa

1989-1994 Corporate Stewardship Committee, Tampa Electric Company

1990 Florida Sea Grant, Proposal Selection Committee

1990 Member NSF Site Visitation Team, Louisiana University Marine Science Consortium

1990-1998 Head, Behavior, Ecology, Evolution and Systematics Division, Department of Biology, USF

1992 Invited participant, EPA Workshop on Seagrasses, Sarasota, FL

1992 Invited Participant, West Florida Shelf Workshop, St. Petersburg, FL

1993-1995 Member-at-Large, Estuarine Research Federation

1994-1995 President, USF Chapter, Sigma Xi

1994 NSF Panel Member, Postdoctoral Fellowships in Environmental Biology

1994- Coalition for Scientific Literacy, USF

1994 Florida Sea Grant Advisory Committee

1995 Invited Participant, NOAA, Habitat Equivalency Analysis Workshop

1995 Invited Participant, HEC Workshop, “Meeting the Challenges of Education in Science and Mathematics”

1996 Invited Participant, NSF Workshop on Restoration Ecology, Santa Barbara, CA

1997, 2000 NSF Panel Member, Marine Biology Laboratories and Field Stations

1997 Panel Member, NOAA, Invasive Species Program

1997 Invited Speaker, California Interagency Ecological Program, Annual Workshop, Asilomar, CA

1998 Invited Speaker, Florida Bay Seagrass Workshop, Key Largo, FL

1998 Co-Organizer, Benthic Ecology Meetings, Melbourne, FL

1998 Invited Speaker, Restoration Ecology Workshop, Michigan State University

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1998 Invited Speaker, NOAA Restoration Workshop, Society of Ecological Toxicology and Environmental Chemistry
1998-2001 Co-Organizer and Scientific Program Chair, International Estuarine Research Federation Meetings St. Petersburg, FL
1998-2000 NASULGC, Member of Board on Natural Resources Ecology Section
1999 Invited participant: ESA, NOAA, NMFS workshop on National Marine and Estuarine Classification
2000 Invited participant, The Nature Conservancy Workshop on Marine Conservation in the Gulf of Mexico
2000 Member, Steering Committee, Institute of Ecosystem Studies Workshop “Structure and function of boundaries in ecological mosaics: a workshop on the status and opportunities for integrated research”
2000-01 Reviewer, Predoctoral Awards, Association for Women in Science Educational Foundation
2001-02 Mentor, McNair Minority Fellowship Program
2001 Peer Review Team, USEPA Western Ecology Laboratory
2001 Outside reviewer, Louisiana Board of Regents, Marine and Environmental Science Graduate Program
2003 Plenary Speaker, CALFED Science Conference on Restoration
2003 Invited Participant, Cary Conference, Institute of Ecosystem Studies, “Ecosystems and landscape heterogeneity”
2003 Landscape Pattern Task Group, State of the Nation’s Ecosystems, The Heinz Center, Washington, DC
2004-2007 Chair, Coastal Landscape Pattern Task Force, State of the Nation’s Ecosystems, The Heinz Center, Washington, DC
2005-2007 Chair, Publications Committee, Estuarine Research Federation
2005 Center for Environmental Studies, FAU, Member, Technical Team, San Luis, Brazil
2006 Peer Review Team, USEPA Western Ecology Laboratory
2007 Participant- Institute for Academic Leadership-Workshop June 2007
2007 Participant- Institute for Academic Leadership-Workshop October 2007
2007- present Tampa Bay Ecological Services Steering Committee
2008- 2010 Group Leader-Institute for Academic Leadership
2008 NSF Review Panel, Biological Oceanography Program
2009 Invited Speaker, Landscape Ecology Workshop, Stockholm Sweden
2009 Everglades Marine Vegetation Modeling Working Group- National Park Service
2010 Invited participant: “Long-term monitoring of Coastal Ecosystem Responses to the Deepwater Horizon Oil Spill” NSF workshop, Florida State University
2011 Member of Seagrass Restoration Review Committee for the Chesapeake Bay Scientific and Technical Advisory Committee (STAC)
2012 Restore America 2012 Meeting, Program Committee

Editorial Positions
2001-present Editorial Board, *Restoration Ecology*

**Outside Examiner for Theses/Dissertations**

1998 External reviewer, MS Thesis, University of West Indies
2000 Outside Examiner, Ph.D thesis, University of Sydney, Australia
2001 Outside Examiner, Ph.D thesis, University of Queensland
2002 Outside Examiner, Ph.D thesis, University of Queensland
2003 Outside Examiner, MSc Dissertation, University of Capetown, South Africa
2003 Outside Examiner, PhD Dissertation, Flinders University, Australia
2003 Outside examiner, PhD Dissertation, University of Queensland, Australia
2004 Outside examiner, PhD Dissertation, University of Western Australia, Australia
2004 Outside examiner, PhD Dissertation, University of Melbourne, Australia
2005 Outside examiner, PhD Dissertation, University of Sydney, Australia
2012 Outside examiner, PhD Dissertation, University of Western Australia, Australia
2012 Faculty Opponent, PhD Dissertation, University of Stockholm

**Advisory Committees**

1990-1998 Technical Advisory Committee, Tampa Bay and Sarasota Bay National Estuary Programs
1995 Ecosystems Management Advisory Committee, Florida Dept. of Environmental Protection
1999-present Advisory Board, Florida Institute of Oceanography
2000-2006 Rookery Bay, (NERRS), Research Advisory Committee

**Honors or Awards**

1968 Woman's Society of Engineer's Award
1968-72 Jonas Clark Scholarship, Clark University
1972 Connecticut State Graduate Fellowship
1973 University of New Hampshire Summer Fellowship
1976 Woman Seaman's Friend Society Fellowship
1977 Woman Seaman's Friend Society Fellowship
1977-78 Belle W. Baruch Fellowship
1977 Sigma Xi Travel Grant
1978-79 Belle W. Baruch Fellowship
1978 Sigma Xi Travel Grant
1979 Sigma Xi Award for Outstanding Graduate Student, University of
South Carolina.

1987  University of South Florida Enhancement of Affirmative Action Award
1993  University of South Florida, Teaching Incentive Award
1998  University of South Florida, Professional Excellence Award
2002  University of South Florida, Presidential Excellence Award

Grants

1979-81  National Science Foundation Grant -- Biological Oceanography Program "Meiofaunal and Macrofaunal functional groups and their response to biogenic structure" OCE 7875564 and OCE 8001726 $67,394.

1981-84  National Science Foundation Grant -- Biological Oceanography Program "Experimental investigations on epibenthic meioobenthos in a subtropical habitat. OCE 8001726 1A $85,000.

1984-85  National Science Foundation Grant -- Biological Oceanography Program "Continuation of experimental studies on harpacticoid copepods in epibenthic habitats" $14,928.

1984  National Science Foundation Grant -- International Programs "A short-term visit to New Zealand to study meiofauna in seagrass beds" $3,416.

1985-86  NOAA/SPD Studies on meiofauna and trophic interactions in Rookery Bay, Florida. $10,000.

1986  Florida Department of Natural Resources, "Seagrass restoration: meiofaunal succession and trophic interactions." $61,964.

1987  Florida Department of Natural Resources, "Experimental Planting of Halodule wrightii in Tampa Bay, Florida. Evaluation of meiofaunal response and trophic links with fish. $16,000.


1989-91  Florida Sea Grant, "Macrobenthic production in natural and restored seagrass beds. $60,079.

1988-89  University of South Florida, International Travel Grant, $1,000.
1990-1993  NOAA, ERHP, Accelerating and evaluating the development of restored and constructed seagrass ecosystems in the S.E. United States, $255,000

1990-1992  Florida Department of Natural Resources, Marine Resources Grant, "Utilization of restored habitats by red drum: evaluation of feeding flexibility, $105,438

1990-1993  Pinellas County Commission, Coastal Management Division, "The effects of sedimentation on sandy beach fauna in the Gulf of Mexico $56,889


1994-1997  NOAA, Coastal Ocean Program, "Multiple scale studies of spatial and temporal influences on seagrass ecosystems: structure, function and management" $150,000

1994-1996  National Science Foundation, "Research Experiences for Undergraduates", NSF Ecosystems Program, $20,000

1995-1997  Florida Sea Grant, “Boating Impacts on faunal-seagrass links: modification of habitat function” $132,706

1995-1998  National Science Foundation “FLEDGE-ling” (Florida Education In Geology and Ecology): an inquiry-based science enrichment program for middle school girls, Young Scholars Program, $124,700 (E. Snow P.I., I. Bartsch and S. Bell co PIs)

1998-2001  NOAA,NEERS, Assessment of the impact of mangrove trimming on fishes in southwestern Florida $49,500

1998  SWFWMD, “FLEDGE-ling- a science program for middle school girls” $10,000

1998-2000  National Fish and Wildlife Foundation Shell Marine Habitat Program, “Assessing the improvement of seagrass restoration by reduction of bioturbation and sediment stabilization by shell hash” $106,104 (total costs)

2001-2003  Pinellas County Environmental Foundation, “Assessing the improvement of seagrass restoration with spaced and aggregated plantings $61,000”

2002-2003  NOAA, CICEET, “Development of an in situ camera system for evaluating ichthyofaunal utilization of the mangrove intertidal” $25,000

2002-2003  Florida Fish and Wildlife Commission, “An experimental test of seagrass restoration: the relative importance of spatial design and exclusion of bioturbators” $20,000


2003-2004  USGS, “The benthic community of offshore sand banks: A literature synopsis of the benthic fauna resources in potential Minerals Management service borrow areas” $58,931

2003-2005  NOAA, CICEET, “Application of an in situ infrared camera system for the evaluation of ichthyofaunal utilization of restored and degraded mangrove habitats: developing a set of reference conditions from a NERR site” $221,393

2003-2004  NSF, Biological Oceanography, “Assessing the impact of a macroalgal outbreak in Tampa Bay, FL” $64,999 (co PI with F. Thomas)


2004-2005  Florida Sea Grant, “Documenting a macrophyte shift from seagrass to an alga: first measure of algal growth rates, light environments and possible seagrass loss”, $6009

2007-2008  NFWF, Pinellas County Environmental Foundation, “Long term assessment of seagrass restoration” $86,000

2008-2009  NFWF, “Restoring Value to Fish Habitat in Tampa Bay Tidal Wetlands” $93653 (PI)


2009-2012  NOAA, NERRS, “Dynamics of mangrove boundaries: field tests of mangrove expansion into marsh plant habitat”, $60,000(PI)
2009-2011 NSF, “ULTRAEx, Urban development, power relations, and water”, $270, 884 (Senior Personnel)

2010-2011 NSF, RAPID Deep Water Horizon Oil Spill: Trophic organization of sandy beach ecosystems across gradients of development and oiling $ 127,693 (PI)

2010-2012 Ecosphere, Lost River Restoration, $99,000 (PI)

2011 GOMRI, Oil spill impacts on food webs of barrier islands: critical sampling of Florida beaches, $49,853 (PI)

PROFESSIONAL SOCIETIES

AAAS
Society of the Sigma Xi
Ecological Society of America
Southeastern Estuarine Research Society
Estuarine Research Federation

Graduate Students: Major Professorship

Rick Milton      Gary Patton
Kevin Tipton     Susan Service
Ruth Pangallo    Keith Walters
Derrick Currie   Josepha Kurdziel
Wendy Tweedale  Harry Meyer
Ken Longenecker Rita Longenecker
Lacey Knowles   Brad Robbins
Cyrena Rose      Karen Moody
Susan Jensen     Kevin Madley
R.Allen Brooks  Sheri Saiter
L.Ben Motten(co-chair) Amy Erickson
William Ellis   Samuel Jacobson
Heather Hamilton (co-chair)
Justin Bowles
Carla Purdy      Jennifer Gibson
Justin Krebs     Kristina Morrow
Laura Bedinger  Michael Middlebrooks
Alison Meyers    Jennifer Peterson
Books Published

Journal Publications (total =102)
Rotterdam. pp. 229-234.


Lawrence, J.W., B.D. Robbins, and S.S. Bell. 1994. Scaling of the pieces of the Aristotle's lantern in five species of *Strongylocentrotus* (Echinodermata:


Bell, S.S., M.O. Hall, S. Soffian and K.M. Madley. 2002. Assessing the impact of boat


Assessment of the Mangrove Ecosystem at São Luis, Maranhão, Brazil
International Conservation Issues Session, World Environmental & Water
Resources Congress 2007: Restoring our Natural Habitat, ASCE
Environmental & Water Resources Institute, Tampa, Florida,

Bell, S.S., M.S. Fonseca and W.J. Kenworthy. 2007. Dynamics of a subtropical seagrass
landscape: links between disturbance and mobile seed banks. Landscape Ecol.
10.1007/s10980-007-9137-z.

Fonseca, M.S., W.J. Kenworthy, E. Griffith, M.O. Hall, M. Finkbeiner and S.S. Bell.
2007. Contrasting influence of disturbance and life history on landscape pattern
http://dx.doi.org/10.1016/j.ecss.2007.06.014

Bell, S.S., A. Tewfik, M.O. Hall and M.S. Fonseca. 2008. Evaluation of seagrass
planting and monitoring techniques: Implications for assessing recovery times and

Ellis, W. and S.S. Bell. 2008. Tidal influence on a mangrove intertidal fish community as
observed by in situ video recording: Implications for studies of tidally migrating

Demes, KW, SS Bell, and CJ Dawes. 2009. The effects of elevated phosphate
concentrations on calcification in the green alga Halimeda incrassata. J. Exp.

Firth, L.A., A. Young and S.S. Bell. 2011. Air temperature and winter mortality:
implications for the persistence of the invasive mussel, Perna viridis in the
intertidal zone of the south-eastern United States. J. Exp. Mar. Biol. Ecol. 400:
250-256.

strategy of a dominant forage fish in mangrove tidal tributaries. Oecologia DOI:
10.1007/s00442-011-2117-7

Middlebrooks, M., S.K. Pierce and S.S. Bell. 2011. Foraging behavior of the
photosynthetic gastropod, Elysia clarki, under starvation conditions. PLoS ONE
6(7): e22162. doi:10.1371/journal.pone.0022162

Peterson, J.M. and S.S. Bell. Tidal events and saltmarsh structure influence black
mangrove (Avicennia germinans) recruitment across an ecotone. Ecology (in press)

Zhao, Y., R. Pu, S. S. Bell, C. Meyer, and L. Baggett. Hyperion Image Optimization in

Erickson, A, S.S. Bell and C.J. Dawes. Associational resistance protects mangrove leaves
from crab herbivory. Acta Oecologica (accepted)

Ellis, W.G. and S.S. Bell. Intertidal fish communities may make poor indicators of
environmental quality: lessons learned in a damaged mangrove forest. Ecological
Indicators (accepted).

Ayoub, L., P. Hallock Muller, P. Coble and S. S.Bell. UV-absorbing substances in reef

Tewfik, A., S.S. Bell and G. Huxel. Differentiating omnivorous strategies and use of
diverse marine subsidies within a barrier island food web. (Submitted)

Pu, R., Bell, S.S. Meyer, C., Baggett, L., and Zhao, Y. Mapping and Assessing Seagrass

Pu, R., Bell, S.S. Baggett, L., Meyer, C., and Zhao, Y. Discrimination of Seagrass

**Invited Seminars**

Harbor Branch Institution  
Philadelphia Academy of Science  
University of Florida  
State University of New York - Stony Brook,  
Eckerd College  
University of South Carolina  
Louisiana State University  
University of Connecticut  
New Zealand Oceanographic Institute  
Dauphin Island Marine Environmental Sciences Consortium  
Horn Point Environmental Laboratory  
University of Tampa  
University of Texas  
Florida State University  
University of North Carolina  
Institute of Ecosystem Studies (N.Y.)  
University of Washington  
Stockholm University  
Dalhousie University

**Presentations** (1992-2009)

Bell, S.S., M. O. Hall, and M. S. Fonseca. Using energy regime to compare seagrass ecosystems. Benthic Ecology Meetings, Mobile.


Peachey, R.L. and S.S. Bell. The effects of mucus tubes on the distribution behavior and immigration/recruitment of seagrass meiofauna. Benthic Ecology Meetings, Mobile


Robbins, B.R. and S.S. Bell. Perspectives in the use of marine benthos to explore landscape theory. Benthic Ecology Meetings, Mobile


Bell, S.S., M.O. Hall, and M.S. Fonseca. Using energy regime to compare seagrass ecosystems. American Society of Limnology and Oceanography Meetings, Calgary. Invited Talk.

Bell, S.S. B.R. Robbins, M.O. Hall and S. Jensen. New perspectives on seagrass ecosystems: a view from lighter than air platforms (LTAPS). Benthic Ecology Meetings, Mystic, CT


Robbins, B.D., and S.S. Bell. Patterns of seagrass distribution in the shallow subtidal; quantifying temporal trends in fragmentation. 13th International Research Federation Meetings, Corpus Christi, TX

Brooks, R.A., and S.S. Bell. Scaling of plant-animal relationships in seagrass beds: searching for patterns with small crustaceans. 13th International Research Federation Meetings, Corpus Christi, TX
Bell, S.S. Landscape analyses of seagrass beds in Tampa Bay, Fl: deciphering linkages of fish and seagrass. 13th International Research Federation Meetings, Corpus Christi, TX

Jensen, S.L., B.D. Robbins and S.S. Bell. Testing the validity of a model for seagrass population decline: vogue or vague? 13th International Research Federation Meetings, Corpus Christi, TX


Jensen, S.L. and S.S. Bell. Notes from the underground: seagrass foraging and morphological plasticity. Benthic Ecology Meetings, Columbia

Madley, K.A. and S.S. Bell. Characteristics which affect the movement of drifting macroalgae in a patchy seagrass shoal. Benthic Ecology Meetings, Columbia


Bell, S.S. and M.S. Fonseca. Restoration of seagrasses: what are the questions that remain? Invited talk, SETAC, Charlotte, NC

Erickson, A.A., C.A. Dawes and S.S. Bell. Crab herbivory in mixed versus pure stands of the red mangrove *Rhizophora mangle* L. Benthic Ecology Meetings, Baton Rouge, LA

Erickson, A.A., C.A. Dawes and S.S. Bell. Crab herbivory and associational defenses in mixed versus pure stands of the red mangrove *Rhizophora mangle* L. Ecological Society of America Meetings, Spokane WA


Erickson, A.A., S.S. Bell and C. Dawes. Crab herbivory on the red mangrove when found in pure stands versus in association with the black mangrove and white mangrove. Benthic Ecology Meetings 2000, Wilmington, NC


Erickson, A.A., S.S. Bell and C.W. Dawes. Do different measures of herbivory lead to similar conclusions? Benthic Ecology Meetings 2003, Groton, CT

Purdy, C.N. and S.S. Bell. The role of chemical cues from seagrass beds on megalopal settlement in the blue crab. Benthic Ecology Meetings 2003, Groton, CT

Stafford, N.B. and S.S. Bell Biological correlates of hydrodynamic regime in a seagrass landscape. Ecological Society of America 2003, Savannah, GA.

Bell, S.S. Seagrass Restoration Studies in Florida: Lessons Learned about Site Selection and Monitoring Programs. Plenary Address 2003, CALFED meetings, Sacramento, CA

Bell, S.S. M.O. Hall and M.S. Fonseca. Seagrass-faunal relationships: what have we learned after 15 years of study? 2003, International Estuarine Research Federation, Invited talk, Seattle WA

Bell, S.S. Seagrass Restoration Success at Lassing Park: A Long-Term Perspective. Submerged aquatic habitat restoration in estuaries meeting, 2003, Sarasota, FL.


Bell, S.S. and Stafford, N. B. Disturbance in seagrass landscapes: detection and ecological implications. Association of Limnology and Oceanography, Savannah,
GA (Invited Talk) 2004

A. A. Erickson, S. S. Bell, C. J. Dawes. Relating mangrove herbivore preference and consumption to leaf chemistry and structure. Ecological Society of America Portland OR 2004

A. A. Erickson, S. S. Bell, C. J. Dawes. Relating mangrove herbivore preference and consumption to leaf chemistry and structure. Association for Tropical Biology and Conservation (ATBC) Miami, FL. 2004


Ellis, W. and S. S. Bell. In situ video observations of fish behavior as a metric of habitat quality: an application in the mangroves of western Florida (USA). EMBA meetings, Vienna, Austria 2005


Villanueva, S. and S. S. Bell. Southeastern Estuarine Research Federation meetings, St Augustine Florida. 2006


Meyers, A. and S.S. Bell. The accumulation of detrital matter within a seagrass (Thalassia testudinum) bed: is it linked to seagrass density? Benthic Ecology Meetings, Atlanta. 2007

Ellis, W and Bell, S., Is Fish Habitat Quality Best Measured in Numbers or Nibbles?: Guidance from In Situ Video Recordings. Estuarine Research Federation Meetings Providence, R.I. 2007

Krebs, J.; McIvor, C.; Bell, S., Assessing Restoration Success Using Nekton-Based Metrics of Habitat Quality in a Tidal Mangrove Wetland Estuarine Research Federation Meetings Providence, R.I. 2007


Villanueva, S.; Bell, S., Insight from a Die-off: linking changes in macrophyte cover with ontogeny of infaunal communities Estuarine Research Federation Meetings Providence, R.I. 2007

Stacy M. Villanueva and Susan S. Bell, Assessing changes in macrophyte cover, macrofaunal community structure, and sediment characteristics following a die-off of Caulerpa prolifera in Tampa Bay. Southeastern Estuarine Research Society 2008

Alison C. Meyers and Susan S. Bell Florence I.M. Thomas Rethinking measures of ecosystem function in seagrass ecosystems. Benthic Ecology Meetings 2009

Bell, Susan S. and N. Stafford. Dynamics of Seagrass Landscapes Viewed Over Long Time Periods and Large Spatial Scales. International CERF Meetings, Portland Oregon 2009


Kaufmann, K. and S.S. Bell. Areas of seagrass loss and stable coverage: do fine scale maps of patch dynamics agree with trends detected by larger scale assessment? CERF meetings, Daytona FL Nov 2011

Krebs, J. M., McIvor, C. C. and Bell, S. S. Developing Nekton-Based Metrics Of Habitat Quality For The Assessment Of Wetland Restoration In Tidal Mangrove Ecosystems. CERF meetings, Daytona FL Nov 2011

**University Service 1990-present**

**Department Committees**: Head- Behavior, Ecology, Evolution and Systematics Section 1990-1998; Seminar Committee 1990, 1996-1998; Departmental Planning Committee 1990-1993; 1996, 2001-2003; Search Committee, Departmental Chair 1996; Search Committee Environmental Microbiologist; Chair=s Advisory Committee 1993-1998; Chairperson, Departmental Planning Committee 2002, Member 2004- present; Chair; Search Committee, Environmental Plant Biologist Search Committee; Graduate Admissions Committee, 1995-1996 and 1997-98; Honors Program Committee 1995-1997; Faculty Advisory Committee 1996-98, 2001-2004; Van Committee 1997-98; Search Committee, Theoretical Biologist; Peer Teaching Evaluation 2000-2005; Curriculum Committee 2004-2006; Provost’s Steering Committee 2008-2009; FIO Director Search Committee

**College**: Strategic Planning Committee 1990; College of Arts and Sciences Interim Graduate Committee 1990-91; Search Committee, Chairperson, Department of Communication; College of Education/College of Arts and Sciences, Education Articulation Committee 1997-present; College of Arts and Sciences, Tenure and Promotion Committee 1999-2001 (Chair 2001); Search Committee, Department of Geology, Hydrogeologist 1999; Search Committee, Department of Physics, Biomedical Physicist 1999; Search Committee, Department of Mathematics, Biostatistician 2000; College of Arts and Sciences Research Committee 2001-2003; Search Committee, Dept. of Geography, Remote Sensing, 2005-2006.

**University**: Year of Discovery Committee 1990; Gender in Academe Committee 1990-91; ad hoc Committee for Development of Environmental Science and Policy Program 1991-92; Scientific Literacy Initiative 1993; Environmental Science and Policy Steering Committee 1993-96; Steering Committee, Committee for Scientific Literacy 1993; Steering Committee, USF Water Related Research 1993; Executive Committee, Coalition for Scientific Literacy; 1997 Graduate Student Grievance Committee, Water Institute Planning Committee 1997; Grievance Committee, Student Athlete 1998. Member, USF Urban Initiative Committee 1999; Intellectual Property, Advisory Committee 1999; Co-Chair, Search Committee, Director of Botanical Gardens 1999; Member, Search Committee, Director of School of Architecture 1999; Member Search Committee, Dean, College of Marine Sciences 2000-01; Water Institute Steering Committee 2000; Steering Committee, Globalization Research Center 2001; Distinguished Professor Review Committee 2002, 2008.

77
NAME: Thomas L. Crisman

POSITION: Professor
Department of Integrative Biology
SCA 110
University of South Florida
Tampa, Florida 32611
813.974.5134
Email: tcrisman@usf.edu

EDUCATION:
A.B. 1970 (Zoology-Geology) Indiana University
M.A. 1972 (Zoology) Indiana University
Ph.D. 1976 (Zoology-Limnology) Indiana University

EXPERIENCE:
1/07-5/11
Patel Professor of Environment
Patel Center for Global Solutions
University of South Florida

11/95 – 1/07
Director
Howard T. Odum Center for Wetlands
University of Florida

8/88 – 1/07
Professor
Department of Environmental Engineering Sciences
University of Florida

3/06 and 3/07
Co-Instructor
I Curso/Taller Mesoamericano en Restauracion y Manejo de Humedales
Organization for Tropical Studies, Palo Verde Nacional Park, Costa Rica

5/03 – 8/04
Fulbright Scholar
Aegean Initiative
Aristotle University, Thessaloniki, Greece
Middle East Technical University, Ankara, Turkey

6/94
Instructor
Summer Field Course in Tropical Ecology
Makerere University Field Station
Kibale Forest, Uganda

2/91 - 11/95
Associate Director for Environmental Programs
Center for African Studies
University of Florida
11/90 - 1/91
Visiting Professor
Institute of Environment
Makerere University
Kampala, Uganda

8/82 - 8/88
Associate Professor
Department of Environmental Engineering Sciences
University of Florida

5/87
Instructor
Course in Chironomid Taxonomy and Ecology
Department of Biology
University of Joensuu, Finland

10/86 - 8/87
Visiting Research Scientist
Karelian Institute, University of Joensuu, Finland
University of Copenhagen, Denmark

1/83 - 2/83
Instructor
UNESCO Postgraduate Course in Tropical Limnology
University of Zimbabwe
Harare, Zimbabwe

8/77 - 8/82
Assistant Professor
Department of Environmental Engineering Sciences
University of Florida

9/75 - 8/77
Post-Doctoral Research Fellow
Limnological Research Center
University of Minnesota

7/76 - 9/76
Lecturer
Department of Ecology
University of Minnesota

PROFESSIONAL SOCIETIES:

American Society of Limnology and Oceanography
Ecological Society of America
Florida Academy of Sciences
International Association of Theoretical and Applied Limnology
North American Benthological Society
North American Lake Management Society
Sigma Xi
Society of Wetland Scientists
AWARDS AND HONORS:

1) Ford Foundation Travelling Scholar (Venezuela) 1974

2) Carl Eigenmann Zoology Fellowship 1974-1975

3) Visiting Scientist, Australian Academy of Sciences 1978

4) Who's Who in the South and Southwest 1979

5) Invited Chairperson for Ph.D. Examining Committee for James Elmore, Biology Department, University of South Florida, Tampa. July 1980.

6) Who's Who in Frontier Science and Technology 1983


11) Program Organizer, Biological Sciences Section, 52nd Annual Meeting, Florida Academy of Sciences, Tampa 1988.

12) Named one of the top 100 researchers at the University of Florida, 1990.

13) Elected Teacher of the Year, Department of Environmental Engineering Sciences, University of Florida, 1990.


15) Nominated by the University of Florida for National Professor of the Year competition sponsored by the Council for Advancement and Support of Education (CASE), 1992.


20) Recipient University of Florida Teaching Improvement Program Award. 1996.


22) United States Department of State appointment to the Board of Governors, U.S.-Israel Binational Science Foundation. Member 1997-current, Board Chair 2001-2002.


25) Faculty Productivity Award, University of Florida, 1999


32) Team Member. External valuation team for programs of School of Environment, University of South Carolina. 2003.

33) Elected to Graduate Council UF. 2003-2006


35) Appointed as a Sagamore of the Wabash by Indiana Governor Joseph E. Kernan, the highest honor given to a citizen of Indiana. 2003.


37) Selected as 2005 Medalist by the Florida Academy of Sciences


39) Chair, Board of Directors, Balkan Environmental Center, Lagadas, Greece. 2008- Present.

Olin Sewall Pettingill Lecturer, University of Michigan Biological Station, Pellston, MI. 2010.

COMMITTEES OF SCIENTIFIC SOCIETIES:

1) Elected, Executive Committee, Florida Academy of Sciences 1989

EDITORIAL BOARDS:

2001- Journal of Limnology
2002-2007 Southeastern Naturalist

SESSION CHAIRPERSON AT SCIENTIFIC MEETINGS:


CONVENOR OF SYMPOSIA:

1) J.R. Beaver and T.L. Crisman. Lake Okeechobee. Symposium held in conjunction with 53rd Annual Meeting, American Society of Limnology and Oceanography, College of William


WORKSHOP AND SHORT COURSE ORGANIZER/CO-ORGANIZER


2007. UNESCO-IHE. Third Annual Hydroinformatics Course in Florida. Organizer/Instructor two-day session in Tampa Bay area on water issues in urban and urbanizing environments.

2010. The Impending Water Crisis of Tampa Bay: Waste, Reuse and Environmental Protection. Workshop I: Potential Contaminants from Water Reuse. USF College of Public Health, USF Department of Integrative Biology (College of Arts and Sciences) and Physicians for Social Responsibility. USF, Tampa, FL.

2010. The Impending Water Crisis of Tampa Bay: Waste, Reuse and Environmental Workshop II: Engineering, Ecosystem Impacts and Financial Considerations. USF College of Public Health, USF Department of Integrative Biology (College of Arts and Sciences) and Physicians for Social Responsibility. USF, Tampa, FL.

2010. Communicating with Policymakers. A workshop for NSF funded Biosphere-Atmosphere Research and Training (BART) Program, University of Michigan Biological Station, Pellston, MI.

PUBLICATIONS

Dissertation:


Journals and Refereed Book Chapters:


Studies from the United States. Island Press.


Edited (Book Chapters, Proceedings, Miscellaneous):


Books:


Technical Reports:


Environmental Engineering Sciences, University of Florida. 269 pp.


17) Crisman, T.L., R.W. Bienert, J.A. Foran, M.A. Gunn, P.R. Scheuerman, N. Gourlie, R.A.


BOOK REVIEWS:


ORAL PRESENTATIONS

Professional Meetings:


16) Comp, G.S. and T.L. Crisman. 1979. Factors affecting the vertical migration of zooplankton in Lake Conway, Orlando, Florida. 34th annual meeting, Florida Academy of Sciences, Miami, Florida.


Management and Control, Monterey, CA. (Invited Presentation).


59) Crisman, T.L. 1988. Macroinvertebrate communities of the Oklawaha Chain of Lakes. 52nd Annual Meeting, Florida Academy of Sciences, University of Tampa, Tampa, FL.

60) Meier, H. and T.L. Crisman. 1988. Macroinvertebrate community structure in a Florida sand bottom stream. 52nd Annual Meeting, Florida Academy of Sciences, University of Tampa, Tampa, FL.


64) Crisman, T.L. and J.R. Beaver. 1988. Shad and Tilapia impact on plankton structure and community metabolism in a eutrophic subtropical Florida lake. 51st Annual Meeting, American Society of Limnology and Oceanography, University of Colorado, Boulder, CO.


81) Brock, R.J., T.L. Crisman, and J.L. Hulbert. 1990. The need to delineate the ecological role of the exotic clam Corbicula fluminea in Florida freshwater habitats. 54th Annual Meeting, Florida Academy of Sciences, Florida Institute of Technology, Melbourne, FL.


84) Crisman, T.L. and J.R. Beaver. 1990. Interactions between planktivorous, benthivorous and littoral fish and plankton in Lake Okeechobee, Florida. 53rd Annual Meeting, American Society of Limnology and Oceanography, College of William and Mary, Williamsburg, VA.

85) Beaver, J.R., T.L. Crisman, and P.V. Zimba. 1990. Spatial and temporal dynamics of littoral
and pelagic zooplankton communities in Lake Okeechobee, Florida. 53rd Annual Meeting, American Society of Limnology and Oceanography, College of William and Mary, Williamsburg, VA.


102) Fernandes, C.A. and T.L. Crisman. 1991. Evidence of algal succession due to seasonality in two Brazilian lakes. 55th Annual Meeting, Florida Academy of Sciences, St. Leo College, St. Leo, FL.

103) Nilakantan, V. and T.L. Crisman. 1991. Comparative grazing effects of Chydorus sphaericus on blue-green algae and attached bacteria. 55th Annual Meeting, Florida Academy of Sciences, St. Leo College, St. Leo, FL.


Orleans, LA.


imazapyr on macroinvertebrates in a logged pondcypress dome. 12th Annual Meeting, Florida Association of Benthologists. Gainesville, FL.

163) Stallman, C., T.L. Crisman and F.E. Esteves. 1999. Sediment Composition of Two Tropical Coastal Freshwater Ponds, Macae, RJ, Brazil. 63rd Annual Meeting, Florida Academy of Sciences, University of South Florida.


of Ecology, Quebec, Canada.


184) Crisman, T.L. 2003. How little water does a wetland need to function?: The reality of transboundary conflicts and water scarcity in the Mediterranean basin, Middle East and Africa. Ohio State University Wetlands Invitational, Ohio State University, Columbus, OH. (Invited Presentation).


in the eastern Mediterranean and Middle East. Mesopotamian Marshes and Modern Development: Practical Approaches for Sustaining Restored Ecological and Cultural Landscapes. Harvard University, Boston, MA. (Invited Presentation).


222) Bennett, D.W., B.L. Talley and T.L. Crisman. 2006. Assessing amphibian responses to forest harvest and Streamside Management Zone practices in the Dry Creek watershed, Georgia. IUFRO Sustainable Forest Management with Fast Growing Plantations.

224) Talley, B.L., D. Bennett and T.L. Crisman. 2007. Response of amphibians in the first two years following timber harvest in the Dry Creek Experimental Forest, Georgia. 14th Biennial Southern Silvicultural Research Conference. Athens, GA.

225) Griswold, M.W., R. Winn and T.L. Crisman. 2007. Resilient macroinvertebrates: the road to recovery following watershed level harvesting and thinning in Georgia streams. 14th Biennial Southern Silvicultural Research Conference. Athens, GA.


239) N. Goddard, C. Haggerty and T.L. Crisman. 2009. Responses of plant and bird community structure in cypress wetlands relative to a time gradient since isolation within the urban landscape of Tampa, Florida. Annual Meeting, Society of Wetland Scientists, Madison, WI.


242) T.L. Crisman. 2009. Florida as a model for climate change in the subtropics. West Central Florida Chapter, American Meteorological Society, St. Petersburg, FL (Invited Presentation).

243) T.L. Crisman. 2009. Ecohydrological approaches to balancing human and ecosystem needs for sustainable management of water resources. AEESP/WEF Scientist’s Luncheon, Orlando, FL (Invited Presentation).


Association, Haines City, Florida.


Universities and Institutions:


3) Crisman, T.L. 1979. Trophic-level interactions in Florida lake systems and the potential for biological control of aquatic productivity. Department of Biology, University of West Virginia, Morgantown.


8) Crisman, T.L. 1980. Use of fish to control autotrophic production in Florida lakes. Fisheries Research Institute, Shanghai, China.


26) Crisman, T.L. 1994. Biomanipulation as a lake management technique. Swiss Federal Institute for Environmental Science and Technology (ETH) and the Swiss Federal Institute for Water Resources and Water Pollution Control (EAWAG), Zurich, Switzerland.


41) Crisman, T.L. 2004. How little water do lake and wetland ecosystems need: living within the reality of increased water demand in Greece. Rosenstiel School of Marine and Atmospheric Sciences, University of Miami, Miami, FL.

42) Crisman, T.L. 2004. Restoration of Balkan wetlands within the reality of declining water resources. Louisiana Universities Marine Consortium (LUMCON), Chauvin, LA.


47) Crisman, T.L. 2006. The reality of water management: determining minimum water requirements for the structure and function of aquatic ecosystems. Department of Ocean Earth and Atmospheric Sciences, Old Dominion University, Norfolk, VA


50) Crisman, T.L. 2006. Meeting the global water challenge: an ecohydrological approach for sustainable aquatic ecosystems. The Patel Center for Global Solutions, University of South Florida, Tampa, FL.

51) Crisman, T.L. 2006. Integrating ecohydrology into ecosystem management. Department of Biology, University of South Florida, Tampa, FL.

53) Crisman, T.L. and W.R. Wise. 2006. Legal implications of the developing field of ecohydrology. Stetson University Law School, St. Petersburg, FL.


58) Crisman, T.L. 2010. Designing with nature to address the global water crisis. Olin Sewall Pettingill Lecture, University of Michigan Field Station, Pellston, MI.


**RESEARCH GRANTS**

Total: $9,121,283, Pending:

1) Heavy metals in ash pond leachate. Florida Department of Environmental Regulation. 1978. (Co-principal investigator with J. Zoltek, Jr.). $11,505.

2) A Florida eutrophication index based on zooplankton composition. 1978-79. Engineering and Industrial Experiment Station, University of Florida (Principal investigator). $12,000.


22) Biological survey of Blues Creek, Florida. 1985-1986. Florida Department of Natural Resources. (Principal investigator). $10,000.

23) Evaluation of the response of benthic invertebrates in cypress domes of the Big Cypress


37) Blue-green algal blooms in Florida Bay: controlling factors and consequences for food webs. 1995-1997 Florida Sea Grant. (Co-Principal Investigator with E.J. Phlips). $120,000.


43) Movement of Imazapyr from flatwoods forestry sites into wetlands and impacts on wetland biota. 1997-1999. NAIPAP. U.S. Forest Service. (Co-Principal Investigator with J. Michaels). $36,560

44) Florida Bay data management. 1997. Florida Department of Environmental Protection. $10,000.


49) Distance learning for wetlands and water resources management in Greece. 1997-1998. USIA. $6,760.


70) St. Lucie County Wetland Inventory and Evaluation Study. 2009-2010. St. Lucie County, Florida. M.C. Rains and T.L. Crisman. $84,655.

71) Subtropical-Tropical Cooperative Program in Management of Coastal Urban Watersheds. 2010. USF GAP Program. $10,000.


COMPLETED M.S. STUDENTS FOR WHICH I WAS CHAIRMAN


University of Florida.


19) Phillip D. Sacco. April 6, 1983. Non-thesis project. The distribution of two adjacent snail populations: A result of thermal effluent or habitat?


85) Christopher Haggerty. April 5, 2010. Annuran and tree community structure of cypress domes in Tampa, Florida relative to time since incorporation within the urban landscape.


COMPLETED Ph.D. STUDENTS FOR WHICH I WAS CHAIRMAN

1) Jeffery A. Foran. November 16, 1983. An analysis of competition on daphnid species diversity, or why are there so few species of Daphnia in the subtropics and tropics?


of the exotic clam, Corbicula fluminea, and cichlid, Oreochromis aureus.


RESEARCH ADVISOR FOR UNDERGRADUATE B.S. STUDENTS


POSTDOCTORAL RESEARCH ASSOCIATES


CURRENT GRADUATE STUDENTS FOR WHICH I AM CHAIRMAN
Ph.D.:

1) Aaron Brown. Conservation value of isolated wetlands embedded within highly agricultural landscapes.

2) Hank Custin. Exotic clams and mussel gradients along tidal rivers of the Florida west coast.

3) Nate Goddard. Interactions between regional hydrology and migratory birds in the Tampa Bay region.

4) Chris Haggerty. Amphibian populations of freshwater marshes relative to a temporal gradient of urbanization.

5) Michelle Hoffman. Microtopography as a control over the structure and function of wetland invertebrate communities.

6) Chrysoula Mitraki. Evaluation of littoral zone structure and function in lakes created on phosphate mined lands.

7) Paul Thurman. Long-term trends in vegetation responses to groundwater pumping for domestic water supply in the metropolitan area.


M.S. (Thesis):

1) Lauren van Maurik. Responses of crayfish in wetlands to excessive groundwater pumping.
Stephen M. Deban  
Curriculum vitae

Current Position

Assistant Professor, Department of Biology, University of South Florida, Aug 2005-present

Current Address and Contact Information

Department of Integrative Biology, 4202 East Fowler Avenue, SCA 110, University of South Florida, Tampa, FL 33620, USA, sdeban@usf.edu, http://debanlab.org
Office Phone: 813-974-2242. Cell Phone: 813-454-8024

Research Focus

Evolution of the physiology and biomechanics of movement in animals.

Education


Previous Positions

Research Assistant Professor, Department of Biology, University of Utah, Oct 2004 – July 2005.


Postdoctoral Researcher, Brain Research Institute, University of Bremen, Germany, Apr – Nov 1999. Gerhard Roth, mentor. Salamander feeding motor control.

**Grants and Fellowships**


NIH NRSA, 2001, not funded.

Hanse Institute for Advanced Study Fellowship, Germany, 1998
NSF Postdoctoral Fellowship, 1997, not funded

Regents Fellowship, U.C. Berkeley, 1995

Junea W. Kelly Fellowship, Dept. of Integrative Biology, U.C. Berkeley, 1994
U.C. Berkeley Vice Chancellor Research Fund Award, 1994

Sigma Xi Grant-in-Aid of Research, 1994
Kellogg Research Grant-in-Aid, Museum of Vertebrate Zoology, 1993

Regents Fellowship, U.C. Berkeley, 1991-92

**Honors**

Outstanding Graduate Student Instructor, U.C. Berkeley, 1995-96
NSF Pre-doctoral Fellowship Competition, Honorable Mention, 1991, 1992

**Scholarships and Awards**

Outstanding Senior Award, College of Arts and Sciences, Northern Arizona Univ., 1991
McDonald-Rolle Scholarship, Northern Ariz. Univ., 1990-91
Eugene & Marjory Bayless Award, Northern Ariz. Univ., 1990-91
Business Office Comptroller's Scholarship, Northern Ariz. Univ., 1989-90
Kenneth E. Derifield Memorial Scholarship, Northern Ariz. Univ., 1989-90
Peer-Reviewed Publications
†undergraduate student, *graduate student, reprints at Debanlab.org


**Published Abstracts**


**Contributed Papers**

*graduate student, †undergraduate student


5. Thermal effects on the performance, motor control, and muscle dynamics of tongue


**Symposium Presentations**


Invited Seminars


4. High power tongue projection in salamanders. **Lehigh University.** November, 2007


10. Evolutionary morphology of amphibian feeding systems. Department of Biology, **Utah State University.** February, 2003.


Service

Professional Societies:
- SICB Student Support Committee - Member 2007-2010
- SICB Division of Comparative Biomechanics - Program Officer 2010-2012

Professional Journals:
- Journal of Experimental Zoology A - Guest Associate Editor 2010
- Frontiers in Aquatic Physiology - Review Editorial Board 2009-present

Referee for journals:

Reviewer or panelist for granting agencies:
- National Science Foundation (Sept 2009, Spring, Fall 2010, Spring 2011).

Professional Memberships

International Society of Vertebrate Morphologists, Society for Integrative and Comparative Biology, American Society of Ichthyologists and Herpetologists

Teaching

University of South Florida, Department of Biology
- Physiology of Movement, Spring 2008, Fall 2009, Fall 2010.
- Comparative Approaches in Evolutionary Biology, Spring 2007.
- U.C. Berkeley, Graduate Student Instructor, Department of Integrative Biology
- Herpetology, 1994;
- Introductory Biology, 1992

Museum Curation

Gordon A. Fox - Curriculum Vitae
Department of Integrative Biology (SCA 110)
University of South Florida
4202 E. Fowler Ave.
Tampa, Florida 33620-2000
Email: gfox@usf.edu
Voice: (813) 974-7352
Fax: (813) 974-3263

Education

- Case Western Reserve University, 1970-71. History.

Experience

Professional appointments

- San Diego State University. Research Assistant Professor, 1997-9; Lecturer and Research Associate, 1994-96. Courses taught: Conservation of wildlife, Ecology and human impacts on the environment, Genetics and evolution, Plant ecology.
- University of the South. Visiting Assistant Professor, 1993-94. Courses taught: Botany; Plant Ecology; Conservation Biology; Principles of Biology. Supervised independent studies in ecology, botany, dynamical systems.

Predoctoral teaching positions

Predoctoral research positions


Funding

- NSF Grant No. DEB-0107465, 2001-2. Project title: "Dispersal and local population dynamics following large-scale wildfire." $36,952 to G. A. Fox.
- University of South Florida Research and Creative Scholarship Award 1999, $6,000.
- San Diego State University Research, Scholarship, and Creativity Award 1997 & 1998 to G. A. Fox, $3,000 each.

Professional Societies

American Association for the Advancement of Science; American Society of Naturalists; Botanical Society of America; Ecological Society of America; Ecological Society of Australia;
Sigma Xi; Society for Conservation Biology; Society for the Study of Evolution

Papers presented


Invited seminars


Invited panels and working groups

- National Evolutionary Synthesis Center (NESCen), group on "Toward a general theory of biological invasions," 2009.

Professional service

University of Queensland:
External Ph.D. examiner, 2011.

Evolutionary Ecology Research:
Editor, 2004-.

Ecological Society of America:

Reviewer for scientific journals:

Reviewer for granting agencies:


Reviewer for publishing houses:


Symposium organized:

Ecological Society of America, 2008 annual meeting, entitled "Environmental fluctuation, temporal dynamics, and ecological processes," coorganized with C. K. Kelly.

Symposium organized:


Awards and Honors

- NSF postdoctoral fellowship, awarded 1990.
- B.A. degree with honors, University of California at Berkeley, 1975.
Public service

- Faculty advisor for Adventures in Supercomputing program, Grundy County High School, TN, 1993-4.
- Faculty advisor for Scientific Sewanee (student poster session sponsored by Sigma Xi), University of the South, 1993-4.

Current graduate students and committees

- Kerry Bohl (Ph.D. student)
- Eva Chase (Ph.D. student)
- Tammy Foster (Ph.D. student), Major professor
- Jamie Gluvna (Ph.D. student), Major professor
- Bill Hentges (M.S. student)
- Monica Hamberg (M.S. student), Major professor
- Anna Hathaway (M.S. student)
- David Jennings (Ph.D. student)
- Heather Jezorek (Ph.D. student)
- Jennifer Peterson (Ph.D. student)
- Maria del Pilar Lopera Blair (Ph.D. student), Major professor
- Pauline Wanjugi (Ph.D. student)

Past students and committees

- Shannon Ansley. M.S. 2006. Major professor
- Sarah Barry. M.S. 2011. Major professor
- Gwen Gregory (Ph.D. student), Major professor
- Brad Hauch M.S. 2011.
- Anne Schmidt. MS. 2005.
Pamela Tingiris (ESP Ph.D. program)

Bibliography

Book:


Papers:


Book reviews

University of South Florida
Department of Integrative Biology, SCA 110
4202 East Fowler Ave., Tampa, Florida 33620
Telephone: (813) 974-1524
Fax: (813) 974-3263
e-mail: vharwood@cas.usf.edu

EDUCATION

1992 Ph.D. in Biomedical Sciences. Old Dominion University and Eastern Virginia Medical School.
1983 B.A. in Biology. State University of New York at Plattsburgh
1980 B.A. in French. Iowa State University

ACADEMIC POSITIONS

2010 - Professor, University of South Florida Department of Integrative Biology
2004- 2010 Associate Professor, University of South Florida Department of Biology
1998 - 2004 Assistant Professor, University of South Florida Department of Biology
1995 - 1998 Assistant Professor: University of North Florida Dept. Natural Sciences
1992 - 1995 Postdoctoral: University of Maryland Center of Marine Biotechnology

CONSULTING and INDUSTRY POSITIONS (Recent)

2010 - Microbiology Consultant: Reedy Creek Improvement District
2007 - 2010 Microbiology (MST) Consultant: Cawthron Institute, New Zealand
2004 – 2010 Microbiology (MST) Consultant: Motley-Rice, LLC

HONORS and AWARDS (Recent)

2009 Feeley Award for Excellence in Environmental Microbiology; Southeastern Branch American Society for Microbiology.
2009 USF Faculty Award for Research, Scholarly, and Creative Excellence
2005-06 President, Southeastern Branch American Society for Microbiology.
2006 Phi Kappa Phi Honor Society Scholar Award
2004 Phi Kappa Phi Honor Society Scholar Award
2003 Margaret Green Outstanding Teaching Award: Southeastern Branch American Society for Microbiology
PROFESSIONAL ORGANIZATIONS

2004- International Water Association
2004- Phi Sigma Iota Honor Society
1999 - American Water Resource Association
1995 - Council on Undergraduate Research
1989 - Sigma Xi Scientific Honor Society
1989 - American Society for Microbiology

FUNDING: AS PRINCIPLE INVESTIGATOR (since 2005)

        $38,447

        $60,000

2010-2011. Robert J. Strickland Beach Bacteria Source Assessment Phase II. Pasco
        County Stormwater. $10,200.

2009-2011 Determining the Relationship of Microbial Pollution and Associated Health
        Risks at Freshwater and Saltwater Beaches of Florida. Florida Department of
        Environmental Protection and the Water Environment Research Foundation.
        $403,000.

2007-2010. Validation and Field Testing of Microbial Source Tracking Methodologies in
        the Gulf of Mexico US Environmental Protection Agency (Gulf of Mexico
        Program). $444,000 to Harwood; $875,907 total with Co-PIs at UWF & USM

2008-2010. Assessing Sources of Indicator Bacteria and Pathogen Presence at Lake
        Carroll, a Freshwater Beach. Environmental Protection Commission of
        Hillsborough County. $101,962.

2008-2009. Lower St. Johns River Tributary Assessment. Florida Department of
        Environmental Protection. $141,637.

2007-2008. Rapid concentration and quantification of bacteria and viruses from marine
        waters. NOAA-CICEET $68,974 to Harwood; $145,893 total with Co-PI D.V.
        Lim at USF

2007-2008 Fecal BMAP Hillsborough RiverPhase II. Level 1. Florida Department of
        Environmental Protection $111,000.

        $149,250.

2007-2008. Identification of Major Sources of Bacterial Loading to Deep Creek and the
        Northern Coastal Basin. St. Johns River Water Management District. $40,000.

2007. Further Investigation of the Sources of Fecal Indicator Bacteria in Wakulla County,
        Florida. Florida Department of Health. $77,931

2006-2007. Analysis of Sources of Fecal Indicator Bacteria Causing Beach Closures in
Hillsborough County, Florida. Environmental Protection Commission of Hillsborough County. $125,000.


2004-2005. Sarasota County, FL. Siesta Key Beach Water Quality Sampling to Determine Sources of Fecal Indicator Bacteria. $14,000.

FUNDING: AS CO-PRINCIPLE INVESTIGATOR (since 2005)
(Only funds allocated to Harwood are listed.)


GRANT PROPOSALS PENDING FUNDING

A Prospective Epidemiological Study of Recreational Water Use at a Gulf of Mexico Beach Impacted by Nonpoint Source Pollution: Relationship between Fecal Indicator Bacteria Levels and Human Health. Project Role: PI. U.S. Environmental Protection Agency Gulf of Mexico Alliance. Requested
funding $883,984. 3 years.

Collaborative Research: Quantifying and Correlating Pathogens and a Poultry Feces Marker Gene in Environmental Waters. Co-PI: J. Weidhass, West Virginia University. National Science Foundation Environmental Engineering. Requested Funding to Harwood $266,676. 3 years.


Using molecular microbial source tracking and a community-municipality partnership to help achieve targeted reductions in stormwater nutrient and bacteria loadings. Project role: co-PI; PI is E.J. Schott (University of Maryland). U.S. Environmental Protection Agency STAR . Requested Funding to Harwood $103,425. 3 years.

Persistence and Correlation of Fecal Indicators and Pathogens in Coastal Waters. U.S. Environmental Protection Agency Gulf of Mexico Alliance. Co-PI; PI S. Wang, University Southern Mississippi. Requested funding to Harwood $371,552. 3 years.

REFEREED PUBLICATIONS (selected; out of 53 total)
(Student and postdocs supervised by Harwood are bolded; * denotes corresponding author)


2010. Z.R. STALEY, J.R. ROHR AND V.J. HAVWOOD. THE EFFECT OF AGROCHEMICALS ON INDICATOR BACTERIA DENSITIES IN OUTDOOR MESOCOSMS. ENVIRON MICROBIOL. 12:3150-3158


**BOOK CHAPTERS**


BOOK EDITED

PEER-REVIEWED, PUBLISHED REPORTS


NON-REFEREED PUBLICATIONS INCLUDING PROCEEDINGS AND PUBLISHED REPORTS (since 2003)


**ABSTRACTS and RESEARCH PRESENTATIONS SINCE 2007**

(Students and postdocs supervised by Harwood are bolded; *a* denotes award winner)


2008. A. Korajkic and V.J. Harwood. Pathogen Analysis and Microbial Source Tracking at Tampa Bay Beaches. Southeastern Branch meeting of the American Society for Microbiology, Nov 6-8, Jacksonville, FL.


using BOX-PCR typing. American Society for Microbiology General Meeting, June 1-5, Boston, Mass.


**INVITED SPEAKER (Since 2007)**


2012. A Darwinian Tale of Microbial Source Tracking. West Virginia University. Department of Crop & Soil Science; Dept. Civil & Environmental Engineering. January 17, Tampa, FL.


2011. Case Studies and Caveats: Microbial Source Tracking in Coastal Waters. Coastal and Estuarine Research Federation Meeting, November 6-11, Daytona Beach, FL (session co-convener).


SCIENTIFIC SERVICE
Current:

2011 - Young Faculty Mentor, West Virginia University, Dept. Civil & Environmental Engineering (J. Weidhaas)

2011-2012 Gulf of Mexico Alliance Microbial Source Tracking Workshop Steering Committee

2009 - Gulf of Mexico Alliance Pathogens Workgroup

2009 - University of New England Center for Land-Sea Interactions External Advisory Board

2006 – Editorial Board: Applied and Environmental Microbiology

Previous:

2011 Session Co-convener, Microbial Source Tracking: Fecal Pollution Sources in Coastal Waters. Coastal and Estuarine Research Federation Meeting Nov 6-11.


2009 U.S. Environmental Protection Agency Recreational Waters Research Forum (invited). Cosa Mesa, CA April 23

2009 Water Environment Research Foundation Panel on Sources of Fecal Pollution in Inland Waters (invited). Dallas TX Feb 18-20.


2007 - 2011 Florida Stormwater Association Research Advisory Council

2004-2005 President, Southeastern Branch American Society for Microbiology


2003 President-elect, Southeastern Branch American Society for Microbiology.


2001 – 2003 Pinellas County Water Technology Advisory Group
1996 - 2000 Guana, Tolomato, Matanzas Shellfish and Water Quality Task Force


Grant reviews for: Austrian Academy of Sciences, Australian Antarctic Program, South Africa Medical Research Council, U.S. Environmental Protection Agency, U.S. Department of Agriculture, National Science Foundation

SERVICE ON GRANT PANELS

2005 US Department of Agriculture Small Business Innovative Research (SBIR) panel manager
2004 US Department of Agriculture Small Business Innovative Research (SBIR)
2003 New York Sea Grant
2003 US Department of Agriculture Small Business Innovative Research (SBIR)
2002 Cooperative Institute for Coastal and Estuarine Environmental Technology (NOAA/UNH).

GRADUATE STUDENTS (completed degree)

2010 Asja Korajkic, Ph.D. Currently employed as postdoctoral research associate at U.S. Environmental Protection Agency, Cincinnati, OH.
2009 Brian Badgley, Ph.D. Currently employed as postdoctoral research associate at University of Minnesota
2009 Bina Nayak, Ph.D. Currently employed as a postdoctoral research associate at USF
2009 Shannon McQuaig, Ph.D. Currently employed as faculty member at USF St. Petersburg
2008 Katrina V. Gordon. Ph.D. Currently employed as postdoctoral research associate at USF.
2008 Phoebe Koch. Master’s degree in Microbiology. Currently employed as secondary school teacher, Hillsborough County, FL.
2006 Miriam Brownell. Master’s degree in Microbiology. Currently employed as laboratory manager at City of St. Petersburg Water
2005 Vasanta Chivukula Ph.D. in Biology. Currently employed as a faculty member at Atlanta Metropolitan Community College.
2003 Matthew Anderson. Masters degree in Microbiology. Currently employed as research associate at Algenol Biofuels, Bonita Springs, FL.


2001 John M. Pisciotta. Masters degree in Biology. Ph.D. from Johns Hopkins University, Baltimore, MD; employed as postdoctoral research associate at Penn State University.

2001 Michael Harris (co-Major Professor) Ph.D. in Chemistry. Currently research scientist at Los Alamos National Laboratories.

GRADUATE STUDENTS (current)

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Began</th>
<th>Scheduled</th>
<th>Completion</th>
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</thead>
<tbody>
<tr>
<td>Chris Staley</td>
<td>Ph.D.</td>
<td>2007</td>
<td>May 2012</td>
<td></td>
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<tr>
<td>Zachary Staley</td>
<td>Ph.D.</td>
<td>2008</td>
<td>2013</td>
<td></td>
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<tr>
<td>Pauline Wanjugi</td>
<td>Ph.D.</td>
<td>2009</td>
<td>2014</td>
<td></td>
</tr>
<tr>
<td>Eva Chase</td>
<td>Ph.D.</td>
<td>2010</td>
<td>2015</td>
<td></td>
</tr>
<tr>
<td>Kamal Aljohani</td>
<td>Masters</td>
<td>2012</td>
<td>2014</td>
<td></td>
</tr>
</tbody>
</table>
Marc J. Lajeunesse

PROFESSIONAL APPOINTMENTS

Assistant Professor. Department of Integrative Biology, University of South Florida, Tampa FL, USA (Sept. 2010 – ongoing)

EDUCATION

Ph.D. (Ecology) 2008, Cornell University, Ithaca NY, USA.
M.Sc. (w/ Distinction, Biology) 2002, Carleton University, Ottawa ON, Canada.
B.Sc. (Honours, Biology) 2000, Carleton University, Ottawa ON, Canada.

PUBLICATIONS

a) Articles


b) *Book Chapters*


Lajeunesse, M.J., Jennions, M.D. and Rosenberg, M.S. (in press) Phylogenetically-


c) Submitted Manuscripts


SOFTWARE .................................................................................................................................


GRANTS, FELLOWSHIPS & AWARDS ..................................................................................

a) Grants

$167,616 and JG: $703,207)

- National Evolutionary Synthesis Center Postdoctoral Research Grant – ’08, ’09, ’10, $5,000 US (total $15,000; declined 3rd year of funding)
- Andrew W. Mellon Student Research Grant (College of Agriculture and Life Sciences, Cornell University) – ’06, $1,200 US
- Department of Ecology and Evolutionary Biology Summer Research Grant (Cornell University) – ’06, $618 US
- NSF IGERT Small Research Grant in Biogeochemistry and Environmental Biocomplexity – ’05, $2,000 US
- Sigma XI (Cornell Chapter) Research Support Grant – ’05, $600 US
- Department of Ecology and Evolutionary Biology Summer Research Grant (Cornell University) – ’05, $500 US

b) Fellowships

- National Evolutionary Synthesis Center Postdoctoral Fellowship (Duke University, Durham NC) – ’08 to ’11, $119,000 US (declined 3rd year of funding)
- National Sciences and Engineering Research Council of Canada (NSERC) Postdoctoral Scholarship – ’08, $80,000 CND (declined)
- Kathleen & Donald Strong Hull Fellowship (University of Toronto) – ’03, $5,900 CND
- Natural Sciences and Engineering Research Council of Canada (NSERC), University of Toronto Fellowship – ’03, $2,500 CND
- Natural Sciences and Engineering Research Council of Canada (NSERC), Postgraduate Scholarship B – ’03 and ’04, $42,000 CND (declined 2nd year)
- Ontario Graduate Student Postgraduate Scholarship (OGS) – ’03, $30,000 CND (declined)

c) Awards

- American Society of Naturalists, Graduate Student Travel Award – ’07, $800 US
- School of Graduate Studies Travel Grant (Cornell University) – ’07, $600 US
- Teaching Award for “Persistent Dedication in Facilitating the Cornell University Teaching Assistant Development Workshops” (Centre for Learning and Teaching, Cornell University) – ’06, $100 US
- School of Graduate Studies Travel Grant (Cornell University) – ’06, $200 US
- University Medal for Outstanding Graduate Work, Master’s Level (given to one graduating Master’s degree among all fields; Carleton University) – ’02
- Canadian Society of Zoologists Travel Award – ’02, $200 CND
- Award for best B.Sc. Honours Thesis poster in Dept. Biology undergraduate symposia (Carleton University) – ’00, $150 CND

INVITED WORKGROUPS, COMMITTEES, & SEMINARS ..................................................

a) Workgroup member
• National Evolutionary Synthesis Center (NESCent) workgroup on “Working group to solve problems in model selection and phylogeny in mixed multi-factor meta-analysis” lead by J. Hoeksema (University of Mississippi) and J. Bever (Indiana University). Durham, NC, Jan. 2012–ongoing.


• Collaboration for Environmental Evidence (CEE), ecological methods workgroup on “Exploring new statistical approaches to data synthesis and methodological approaches to reducing bias in datasets”. 2006–2009. Currently, CEE is based at the Centre for Evidence Based Conservation (CEBC) in Bangor University, UK. See our website: http://www.environmentalevidence.org/EMGPeople.html

b) Committees and grant reviews

• Invited Grant Reviewer. NSF IGERT review committee member for Biogeochemistry and Environmental Biocomplexity research grants: reviewed proposals and allocated $40,000 US among graduate student applicants (42 applicants, 16 funded). – Mar. ’06.


• Undergraduate representative and committee member for interviewing applicants to new faculty positions (Biology Department, Carleton University). – Jan. ’00 to Mar. ’00.

c) Departmental seminars and symposia talks (indicated with *)

Lajeunesse, M.J. (March 2011) Rice University, Department of Ecology and Evolutionary Biology. Houston, TX.

Lajeunesse, M.J. (March 2010) University of South Florida, Department of Integrative Biology. Tampa, FL.


Lajeunesse, M.J. (Jan. 2006) Laurentian University, Biology Department. Sudbury,
ON
Lajeunesse, M.J. (Aug. 2002) Carleton University, Department of Biology. Ottawa, ON.

CONFERENCE PRESENTATIONS ..................................................................................


TEACHING QUALIFICATIONS ..................................................................................

a) Course Instruction

- Introductory Biology II – Biological Diversity (BSC2111), University of South Florida. Tampa, FL. (students: 120 undergraduates). Jan 10–April 29, ’11.
- An Introduction to Meta-analysis in Ecology and Evolutionary Biology: NESCent Summer Course 2009. Durham, NC. Co-Instructor with Jessica Gurrevitch (SUNY Stony Brook) and Kerrie Mengersen (University of Queensland).
(students: 15 graduate students, 5 postdocs, 4 profs). June 5–10, '09.

- *Evolutionary Biology, Writing in the Majors* (2nd year course, Cornell University). I had 12 students in 2008 and 17 in 2006 for which had the responsibility to develop the course curriculum, mentor individual student projects, and assign finals course grades. Spring '08 and Spring '06.

b) *Teaching Workshops Lead*

- *Graduate Student Professional Development Workshop* (College of Agriculture and Life Sciences, Cornell University). – Aug. '06, Jan. '07, Sept. '07, Feb. '07. Co-ordinating microteaching scenarios (filming teaching assistants during class) and analysis of teaching for new TA’s across all biology related departments.
- *Teaching Assistant Development Workshop* (Centre for Learning and Teaching, Cornell University). Workshop entitled: “Dealing with students during office hours” – Mar. '07
- *Graduate Student Development Workshop* (Centre for Learning and Teaching, Cornell University). Workshop entitled: “Managing stress and achieving balance”. – Sept. '06.
- *C++ for Biology, Programming Workshop* (University of Toronto). Taught and mentored 7 graduate students in the Departments of Zoology and Botany on C++ and individual research projects. Apr. to Aug. '04.

c) *Skill Development in Undergraduate Education*

- *Graduate Student Professional Development Workshop* (College of Agriculture and Life Sciences, Cornell University). A five day workshop on microteaching analysis and criticism. – '05.

d) *Teaching Assistantships*

- *Teaching assistant. Evolutionary Biology* (2nd year course; Fall '07 and Fall '05), Cornell University.
- *Lab demonstrator. Introductory Biology* (1st year course; Fall/Spring '03/'04),
University of Toronto.

- **Lab co-ordinator and demonstrator.** *Animal Behaviour* (3rd year course; Fall '02), Carleton University. I assisted 23 students in conceiving, designing, analysing, and writing individual research projects on behaviour.

- **Teaching assistant.** *Animal Physiology* (3rd year course; Spring '00 and Fall '01) Carleton University.

- **Teaching assistant.** *Introductory Biology* (1st year course; Spring '01), Carleton University.

**OUTREACH** ........................................................................................................................................................................

- Member of the organizational committee for *Darwin Day 2010* public open house. Co-sponsored by NESCent and the N.C. Museum of Natural Sciences. (Raleigh, NC).


- Organized a three-week outreach course on insect diversity for a first-grade class in Fall Creek Elementary as part of the *Graduate Student School Outreach Project* (GSSOP, *Cornell University*) – April to May '07.

- Presenter of plant-insect interactions display during the 3rd *Annual Insectapalooza* (*Department of Entomology* public open house, Cornell University) – Oct. '06.

- Presenter of parasitism and entomology research during the '00, '01, '02 and '03 *Queen's University Biological Station* public open house (Chaffey's Locks, ON).
Curriculum Vitae  
February 2012

David Bruce Lewis

University of South Florida  
Phone 813-974-8108  
Fax 813-974-3263

Department of Integrative Biology  
Email: davidlewis@usf.edu

4202 E. Fowler Ave, SCA 110  
Web: http://lewislab.org/

Tampa, FL 33620, USA  
Profile: http://usf.academia.edu/DavidLewis

Education

PhD  University of Wisconsin-Madison, Limnology and Marine Science, 2000

MS  University of Wisconsin-Madison, Oceanography and Limnology, 1996

BA  University of Kansas, Biology, 1994

Positions

Assistant Professor  Department of Integrative Biology, University of South Florida, 2009-present

Post-doctoral Researcher  Department of Crop and Soil Sciences, The Pennsylvania State University, 2005-2009

Post-doctoral Researcher  Global Institute of Sustainability and School of Life Sciences, Arizona State University, 2000-2005

Research Interests

Ecology of freshwater and intertidal systems; Land-water nutrient coupling; Ecohydrology; Urban ecology; Interdisciplinary social-ecological research

Service and Professional Activities

University of South Florida—department, college, and university level

- Reviewer, USF Institutional Review Board (2011-study on student learning outcomes of course redesign in introductory biology)
- Member, USF Ecological Research Area steering committee (2011-present)
- Research Affiliate, USF Office of Sustainability (2010-present)
- Member, Groundwater Geochemist Faculty Search Committee, Dept of Geology (2010)
- Member, Governance Document ad hoc committee, Dept of Integrative Biology (2010)
- Member, Course Curriculum Committee, Dept of Integrative Biology (2009-2011)
- Member, Learning Assessment Plan Committee, to assess undergraduate knowledge and skills in biology, pursuant to SACS (Southern Assoc. of Colleges and Schools) accreditation, Dept of Integrative Biology (2010-present)
- Member, Steering Committee for USF’s proposal to host the International Geosphere-Biosphere Programme’s 2012 Conference in Lake Buena Vista, Florida. (2009-2010)

Professional activities for other organizations (2009-present)
- Institutional representative (one of three from USF) to CUASHI (Consortium of Universities for the Advancement of Hydrologic Science, Inc.)
- Panelist, U.S. National Science Foundation, Ecosystem Studies (BIO-DEB) proposal review panel (2010)
- Ad hoc reviewer of proposals to the U.S. National Science Foundation, BIO-Division of Environmental Biology (2011) and GEO-Division of Earth Sciences (2011)
- Ad hoc reviewer of preliminary and full proposals to Maryland Sea Grant (2010)
- Member, Ecological Society of America

Workshop participation
- “Urbanization Interactions with Biogeochemistry and Climate.” 2nd Workshop of the Young Scientist Network, 09-10 September 2006, Mexico City. Sponsored by the U.S. National Center for Atmospheric Research and Analysis, Integration and Modeling the Earth System.
- “Land-Water Linkages.” Long-Term Ecological Research (LTER) project Coordinating Committee meeting, 18-20 April 2002, UNM Sevilleta Field Station, Socorro, NM
- “Integrating Social Science into LTER Programs: Ecosystem Function in Coupled Systems.” LTER Biocomplexity Workshop, 29 April–01 May 2002, Baltimore, MD.
Mentoring

Current graduate students
- Sharon J. Feit, M.S. candidate, Biology-Ecology and Evolution (2010-present)
- Ralph B. Perkerson, Ph.D. candidate, Biology-Ecology and Evolution (2010-present)

Undergraduate students writing full theses (honors theses, etc.)
- Jewel A. Brown, USF Honors College and Biology Major (2011-present), “Interactive effects of simulated sea-level rise and warming on microbial carbon and nitrogen cycling in mangrove and salt marsh soils.”
- TaShae Harrison, REU (Langston University) (2010), “Variability of soil organic matter along a toposquence from sand hill scrub to cypress swamp wetland habitat.”

Other advisory committee service (2009-present)
On Ph.D. and M.S. advisory committees for 9 other current and graduated students

Teaching program

Current courses at the University of South Florida

Ecosystem Ecology Graduate-level course. Emphasizes newly discovered mechanisms in nutrient cycling research, juxtaposing terrestrial and aquatic studies. Traces a proverbial “atom X” from the atmosphere through soil profiles to aquatic systems.

Landscape Ecology Graduate-level course. Introduces landscape ecology concepts and tools. Gives students a research opportunity by providing them a real set of spatially-explicit data and computing resources for its analysis.

Principles of Ecology Upper-level undergraduate course. Pairs theory with empirical examples from long-term, comparative, experimental, and modeling studies. Covers all ecological levels, the scientific method, and natural selection.

Ecology Laboratory Upper-level undergraduate course (separate from lecture). Projects on diverse topics require data collection and analysis, and papers written in IMRD format that exhibit hypothesis development and testing.

Environment Non-majors course. Emphasizes the science behind environmental change issues (climate change, biodiversity loss, pollution), with complementary focus on socio-political aspects of environmental change. Introduces the role of theory in the scientific method, and how it pertains to understanding evolution and climate change.
Principles of Biology  Non-majors course. A comprehensive introduction to living systems, including the scientific basis of biology, cell structure and function, genetic mechanisms, human anatomy and physiology, and ecological and evolutionary processes.

**Funded grants** (2009-present)


2) RAPID-Plant species effects on rapid stabilization of nitrogen in soil organic matter of mangrove ecosystems at risk from oil deposition, PI: DB Lewis. Co-PI: A Abd-Elrahman. National Science Foundation RAPID awards, Ecosystem Sciences. $159,976; 09/01/2010 – 08/30/2012.


**Bibliography**

*Peer-reviewed articles in indexed, refereed journals*


*Book chapters (underwent anonymous peer review)*


Technical reports, proceedings, and unrefereed publications


Honors and Awards

Graduate school (1994-2000, University of Wisconsin, Madison)

1) U.S. Environmental Protection Agency STAR fellow—$58,068 (1998-2000)
2) U.S. National Science Foundation graduate student fellow—$48,000 (1994-1997)
3) Univ. of Wisconsin, John Jefferson Davis research grant—$1,500 (1998)
4) Conchologists of America research grant—$450 (1997)
5) University of Wisconsin Anna Grant Birge Memorial Award—$1,400 (1996)
6) Univ. of Wisc. Alumni Research Foundation Grad Student Fellowship —$16,000 (1994)

Undergraduate period (1990-1994, University of Kansas)

7) Elected to Phi Beta Kappa national honors society (1994)
8) Elected to Omicron Delta Kappa national leadership honor society (1993)
9) Graduated with Honors, Biology Dept. (based on independent research, 1994)
10) Graduated with Honors, University-level (based on course curriculum, 1994)
11) Graduated with Distinction, University-level (based on grade point average, 1994)
12) Outstanding Student in Biology, Biology Dept—$750 (1993)
13) University Merit Scholarship—$500 (1993)
14) Outstanding Student in Japanese, Dept. of East Asian Languages & Cultures (1992)
15) University Merit Scholarship—$500 (1992)
16) University Scholar grant recipient—$250 (1992)
17) Academic All Big 8 Conference (men’s swimming)—all semesters Fall 1990-Spring 1994
Presentations

Lead or sole author

1) Gastropod community ecology and lake chemistry, lessons for diversity and species interactions. Spring 1996, University of Notre Dame Biology Department, ecology seminar series, Notre Dame, IN, USA. Invited
2) The effects of lake chemistry and crushing predator abundance on snail shell strength. 10-14 August 1996, Ecological Society of America, 81st annual meeting, Providence, RI, USA.
3) An assessment of the scale at which snail communities are structured. August 1997, Ecological Society of America, 82nd annual meeting, Albuquerque, NM, USA.
4) Hydrology, habitat, and species interactions: important factors in the conservation of communities in Wisconsin lakes and wetlands. 02 May 1998, Aldo Leopold Chapter of the Society for Conservation Biology, Madison, WI, USA. Invited
6) Snail spatial gradients and landscape position. Fall 1998, Duke University Marine Lab Mini-Symposium, Beaufort, NC, USA.
7) Hierarchy in the composition of snail assemblages: implications for lake district organization. 19 March 1999, Madison Ecology Group, annual symposium, Madison, WI, USA. Invited
8) Assessing the scale at which snail assemblages are structured. June 1999, Japan-U.S. Long-Term Ecological Research, joint graduate student conference, Tomakomai Experimental Forest, Hokkaido, Japan. Invited
9) Trading off growth for survival: responses of freshwater snails to predacious crayfish. 8-12 August 1999, Ecological Society of America, 84th annual meeting, Spokane, WA, USA.
10) Spatially heterogeneous refugia and predation risk in intertidal salt marshes. Fall 1999, Duke University Marine Lab, seminar series, Beaufort, NC, USA.
11) Predation gradients in intertidal communities: the interactive roles of habitat and elevation. 09 August 2000, Ecological Society of America, 85th annual meeting, Snowbird, UT, USA.
12) Nutrient dynamics in subsurface flowpaths of an arid watershed. 09 August 2001, Ecological Society of America, 86th annual meeting, Madison, WI, USA.
13) Material transport in storm runoff from urban catchments. 17 January 2002, annual symposium, Central Arizona-Phoenix Long-Term Ecological Research project, Tempe, AZ.
14) Effects of human modification of hydrology and nutrient balance on biogeochemical pattern and process in urban landscapes. 19 April 2002, Coordinating Committee Meeting, US Long-Term Ecological Research Network, Sevilleta, NM, USA. Invited
16) Stoichiometry and load of nutrients and metals discharged from urban catchments by storms. 21-24 May 2002, World Wide Workshop for Junior Environmental
Scientists annual meeting, CEREVE-University of Paris XII-Val de Marne, Domaine de Chérioux, Vitry sur Seine, France. Invited

17) Nutrient and metal loads exported from hydrologic catchments by storm runoff. 08 August 2002, Ecological Society of America, 87th annual meeting, Tucson, AZ, USA.

18) Ecological stoichiometry of horticulture: consequences of pruning and irrigation for plant and soil chemistry. 19 February 2003, annual symposium, Central Arizona-Phoenix Long-Term Ecological Research project, Tempe, AZ, USA.


20) Ecological stoichiometry of horticulture: consequences of pruning and water for plant nutrient use efficiency. 05 August 2003, Ecological Society of America, 88th annual meeting, Savannah, GA, USA.


22) Hierarchical regulation of ecosystem function: material export from urban catchments. 23 February 2004, annual symposium, Central Arizona-Phoenix Long-Term Ecological Research project, Tempe, AZ, USA.

23) Resistance and resilience in a fluvial ecosystem: variability compared among patch types. 03 August 2004, Ecological Society of America, 89th annual meeting, Portland, OR, USA.


25) Importance of historical and present-day land use for the lability of soil C and N. 15 July 2006, International Union of Soil Sciences, 18th World Congress of Soil Science, Philadelphia, PA, USA.

26) Response of soil carbon pools and fractions to a century of land use change. 07 August 2006, Ecological Society of America, 91st annual meeting, Memphis, TN, USA.

27) Carbon stabilization in urban and urbanizing soils: the effects historical land use. 06 September 2006, Global Carbon Project, First International Conference on Carbon Management at Urban and Regional Levels, Mexico City.


30) The long now and the very long now: the importance of legacies in ecology. 10 March 2008, Wichita State University, Department of Biological Sciences Spring 2008 seminar series, Wichita, KS, USA. Invited
31) Water, forests, and urban ecology: a way forward for sustainability science. 31 March 2008, Auburn University School of Forestry and Wildlife Sciences seminar series, Auburn, AL, USA. Invited

32) Using catchments and history to understand global environmental change. 21 October 2008, University of Maryland CES-Appalachian Laboratory seminar series, Frostburg, MD, USA. Invited

33) Land-water interactions in arid cities. 20 January 2009, University of South Florida, Department of Integrative Biology seminar series, Tampa. Invited

34) Testing a new model of the terrestrial nitrogen cycle: rapid nitrogen stabilization in soil organic matter from forests of different age and composition. 14 April 2010, Florida International University - Southeast Environmental Research Center Seminar Series, Miami. Invited

35) Ecosystem responses to global environmental change. 23 April 2010, University of South Florida, Department of Geography colloquium, Tampa. Invited

36) Urban development, social relationships, and water policy as drivers of wetland change in the Tampa Bay Region. 19 May 2010, Northern Tampa Bay Local Technical Peer Review Group Meeting, Southwest Florida Water Management District, Tampa. Invited

37) Ecosystem ecology and biogeochemical cycles: understanding environmental change. 10 June 2010, University of South Florida Research Experience for Undergraduates - Tampa Interdisciplinary Environmental Research seminar series, Tampa. Invited

38) Rapid immobilization of inorganic nitrogen in stable soil organic matter of forest ecosystems: reviving the successional N retention hypothesis. 03 August 2010, 95th Annual Meeting of the Ecological Society of America, Pittsburgh, PA, USA.

39) Ecohydrology and urbanization: understanding social drivers of change in aquatic ecosystems. 28 March 2011, University of South Florida Environmental and Water Resources Engineering seminar series, Tampa. Invited

40) Urban development, power relations, and water redistribution as drivers of wetland change in the Tampa Bay Region Socioecosystem. 04 April 2011, US Regional Assoc. of the International Assoc. for Landscape Ecology, 2011 Symposium, Portland, OR, USA. Invited

41) Urban development, power relations, and water redistribution as drivers of wetland change in the Tampa Bay Region Socioecosystem. 11 April 2011, US EPA workshop - Developing a network of urban research on climate vulnerability, Seattle. Invited

42) Urban development, power relations, and water redistribution as drivers of wetland change in the Tampa Bay Region Socioecosystem. 10 August 2011, 96th Annual Meeting of the Ecological Society of America, Austin, TX, USA.

Co-authored presentations (lead author listed)

43) Hrabik TR, et al. Variability in species richness among four taxonomic groups in north temperate lakes with varying chemical characteristics and stream connectivity. 10 August 2000, Ecological Society of America, 85th annual meeting, Snowbird, UT, USA.


48) Grimm NB, et al. Learning from cities: potential contributions of urban research to stream and watershed ecology theory. 05 June 2001, North American Benthological Society, annual meeting, LaCrosse, WI, USA.


50) Schade JD, et al. Nutrient dynamics in subsurface flowpaths of an arid watershed. 30 May 2002, North American Benthological Society, annual meeting, Pittsburgh, PA, USA.


53) Schade JD, et al. Understanding riparian ecosystem function: linking biogeochemistry and hydrology at multiple scales. December 2002, American Geophysical Union, annual fall meeting, San Francisco, CA, USA. Invited


55) Grimm NB, et al. Effects of land-use change from urbanization on nutrient dynamics in arid-land streams. 15 June 2003, Chapman Conference "Ecosystem Interactions with Land Use Change," American Geophysical Union, Sante Fe, NM, USA. Invited


57) Grimm NB, et al. A distinct urban biogeochemistry? 02 August 2004, Ecological Society of America, 89th annual meeting, Portland, OR, USA. Invited
58) Schade JD, et al. Plasticity in resource allocation and nitrogen use efficiency in riparian vegetation: implications for nitrogen retention. 03 August 2004, Ecological Society of America, 89th annual meeting, Portland, OR, USA.
61) Kaye JP and Lewis DB. Ghosts of agriculture past in the soils of Phoenix, AZ. March 2007, Cornell University seminar series in biogeochemistry, Ithaca, NY, USA. \textit{Invited}
62) Akiwumi FA, et al. Power relations and public perceptions of water redistribution as drivers of wetland change in the Tampa Bay Region Socioecosystem. 3 February 2010, University of South Florida Department of Integrative Biology special seminar, Tampa. \textit{Invited}
64) Feit SJ and Lewis DB. Hydrological and vegetative influences on soil organic carbon and nitrogen pools in isolated wetlands of West-central Florida. 12 August 2011, 96th Annual Meeting of the Ecological Society of America, Austin, TX, USA.
65) Akiwumi FA, et al. Urban development, power relations, and water redistribution as drivers of wetland change in the Tampa Bay Region Socioecosystem. 14 September 2011, University of South Florida Environmental Research Interdisciplinary Colloquium, Tampa.
Curriculum Vitae

LYNN BLOXOM (MARTY) MARTIN II

Current position
Assistant Professor
Department of Integrative Biology
University of South Florida
4202 East Fowler Avenue
Tampa FL 33620-5200

Phone: (813) 974-0157
Fax: (813) 974-3263
Email: lmartin@cas.usf.edu
Office: SCA 130
Lab: SCA 120-122
Webpage: http://lbmartin.myweb.usf.edu/Martin_lab_at_USF/Welcome.html

Education and training

1996 B.S. Biology, Virginia Commonwealth University
Supervisor: Dr. Charles Blem (emeritus)
1999 M.S. Biology, Virginia Commonwealth University
Supervisor: Dr. Charles Blem (emeritus)
2001 M.A. Ecology and Evolutionary Biology, Princeton University
Supervisor: Dr. Martin Wikelski
2004 Ph.D. Ecology and Evolutionary Biology, Princeton University
Supervisor: Dr. Martin Wikelski
2007 Post-doctoral Researcher, Psychology, Ohio State University
Supervisor: Dr. Randy J. Nelson

Honors and awards

2010 University of South Florida, University Outstanding Research Award
2009 George A. Bartholomew Young Investigator Award, Society for Integrative and Comparative Biology
2009 Elective Member, American Ornithologist’s Union
2007 Ned K. Johnson Young Investigator Award, American Ornithologists Union
2007 Young Investigator Award, Society for Behavioral Neuroendocrinology

RESEARCH (h-index: 20, as of 2/14/12) Peer-reviewed publications (*undergraduate collaborator; **graduate collaborator):

In review or revision:

71. **Liebl, AL and LB Martin. Glucocorticoid manipulation does not affect neophobia in house sparrows, *Passer domesticus.*
70. Martin, LB, **MO King, and CAC Coon. Functional consequences of immune variation in a wild bird: when more is better.
69. Martin, LB, and CAC Coon. Seasonal variation in an allergic response is independent of allergen exposure.
68. Martin, LB, **AL Liebl, LK Butler, B Faivre, T Imboma, **JR Kuhlman, KA Lee, LM Romero, G Sorci, IRK Stewart, and D Westneat. Global variation in house sparrow inflammatory responses: a physiological mechanism of range expansion
67. Martin, LB, *A Urban, **CAC Coon, and ** AL Liebl. Does immune suppression occur to free resources for other physiological processes?
65. Owen, JC, **A. Nakamura, **CAC Coon, and LB Martin. Stress hormones elevate mortality risk to West Nile virus in a wild bird.

64. Rivers, JW, LB Martin, **AL Liebl, and MG Betts. Stress hormone levels are not associated with breeding habitat quality in the Swainson’s Thrush.

In press


60. Previtali, MA, RS Ostfeld, F Keesing, AE Jolles, R Hanselmann, and LB Martin. Relationship between pace of life and immune response in wild rodents. Oikos


2012


2011


50. Rivers, JW, LB Martin, **AL Liebl, and MG Betts. Parental alarm calls of the white-crowned sparrow fail to stimulate corticosterone production in their nest-bound offspring. Ethology 117: 374-384. (times cited: 1)


2010


2009


2008


2007


17. **Martin, LB, **ER Glasper, RJ Nelson, and AC DeVries. 2006.** Prolonged separation delays wound healing in monogamous California mice, Peromyscus californicus, but not in polygynous white-footed mice, P. leucopus. Physiology and Behavior. 87: 836-841. (times cited: 7)


2005


8. *Greenman, CG, LB Martin, and M Hau. 2005.** Reproductive state but not testosterone reduces immune function in male house sparrows (Passer domesticus), Physiological and Biochemical Zoology 78: 60-68. (times cited: 56)

7. **Lee, KA, LB Martin, and M. Wikelski. 2005.** Responding to inflammatory
challenges is less costly for a successful avian invader, the house sparrow (*Passer domesticus*), than its less invasive congener. *Oecologia* 145: 244-251. (times cited: 43)


**2004**


**2003**


**Invited book reviews**


**GRANTS**

**Fellowships**

2004 – 2001 Pew Charitable Trusts, Training Program in Biocomplexity  
2004 – 2001 US Environmental Protection Agency, Science to Achieve Results (STAR)

**Awarded**

2011 USF-CAS seed grant ($5000)  
2010 NSF, Research Coordination Network, ($493,341)  

   *Redefining and diversifying ecological immunology*  
2009 NSF, Integrative Organismal Systems ($434,059)  

   *Physiological mediation of vertebrate invasions*  
2008 NSF, Integrative Organismal Systems ($23,340)  

   *Psychoneuroimmunology meets Integrative Biology, symposium*  
Scott’s Company, *Project Blackbird* ($2,000)  
Scott’s company, *Project Blackbird II* ($10,000)  
USF New Researcher Grant ($3,120)  
2002 Program in Latin American Studies, Princeton University ($1000)
2001  Animal Behavior Society ($1000)
American Ornithologist’s Union ($900)
American Museum of Natural History (Frank Chapman grant; $1500)
Sigma Xi Society (Grant-in-Aid of Research; $1200)

Submitted
2012  NSF- Integrative Organismal Systems, pre-proposal
      Stress hormone effects on resistance, tolerance, and Competency
2011  NSF-Ecology of Infectious Disease
      Trait-based disease ecology
NSF, Integrative Organismal Systems (resubmission)
      CAREER: Stress-immune interactions in wild songbirds
NESCant Working Group
      Development of an Integrated Curriculum for Evolutionary Medicine
NSF-IOS, ROA supplement, with Sara O'Brien, Marian University
      Physiological mediation of vertebrate invasions
NESCant Catalysis Meeting
      Physiological Regulatory Networks
2010  NSF-Ecology of Infectious Disease
      The mechanistic basis of the dilution effect
Morris Animal Foundation, Established Researcher
      Captivity effects on wild animal immunity
NSF, Integrative Organismal Systems (resubmission)
      CAREER: Stress-immune interactions in wild songbirds
NIH, R01: National Institute of Environmental Health Sciences
      Do pesticides permanently reduce infectious disease resistance?
2009  NIH, Challenge grant, National Institute of Environmental Health Sciences
      Do pesticides permanently reduce infectious disease resistance?
NIH, R15: National Institute of Environmental Health Sciences
      Do pesticides permanently reduce infectious disease resistance?
NSF, Integrative Organismal Systems
      CAREER: Stress-immune interactions in wild songbirds
NSF, Research Collaborative Networks program (resubmission)
      Redefining and diversifying ecological immunology
Oregon State University (co-PI)
      How does increased temperature variability impact breeding birds and their offspring?
USF Interdisciplinary Research Grant
      Development of novel immune assays for wild birds
National Geographic Explorer’s Program (co-PI)
      Population genetics of introduced house sparrows in Brazil
2008  Beckman Young Investigator’s Program
      Urbanization and West Nile virus in house sparrows
NSF, Research Collaborative Networks program
      Redefining and diversifying ecological immunology
NSF, Integrative Organismal Systems
      The physiological basis of invasiveness in the House Sparrow
National Geographic Explorer’s Program (co-PI)
Stress endocrinology of African songbirds
American Association of Veterinarians Small Grants program

2007
National Geographic Explorer’s Program
The physiological basis of invasiveness in the House Sparrow
USF Internal: New Researcher Award
The physiological basis of invasiveness in the House Sparrow

Travel awards

2007
University of South Florida, Patel Center
Society of Behavioral Neuroendocrinology
2004
Society of Integrative and Comparative Biology
2001
Princeton Association of Graduate Alumni
2000
Ecology and Evolutionary Biology, University of Illinois
Graduate College Conference, University of Illinois
Association of Field Ornithologists
1999
Virginia Society of Ornithology

Other awards

2000
Top 5% of Teaching Assistants university-wide, University of Illinois
Inductee, Alpha Phi Alpha Honor Society
Biology Graduate Student of the Year, VCU
Best Talk in Evolution, University of Illinois Graduate Student Symposium
1997
Governor’s Fellowship, Office of Governor George Allen, Virginia

Press coverage

2011
Frontiers in Ecology and the Environment article on ecoimmunology
2010
Faculty of 1000, Biology review of article in Functional Ecology
2008
Physiological and Biochemical Zoology article (Vol. 81, pp. 366-372)
AMP, AOL, Bio-medicine.org, Biology News Net, CBS 2, Daily India, Dr.
Koop.com, EurekAlert, Florida Today, Forbes, GenNews, Grand Junction
Daily Sentinel, Health Day News, Health Central, Health Scout, Huliq,
IBNLive, Innovations Report, KAIT, KATC, KCAU, KFVS-12, KHNL, KFLY, KLKN,
KLTU, KMPL Fox 26, KNVA, KOTA, KPLC, KRDQ, KRIS, KRON4, KTV, KVBC,
KVOA, KXAN, KXLY, Labspaces.net, LEX18, Medical News Today,
MedicineNet.com, MSN.com, New Kerala, NetIndia 123, News-Medical-
Net, Phys Org, Poughkeepsie Journal, Red Orbit, Salt Institute, Scott and
White, Science Centric, Science Daily, Science Ticker, Scientist Live,
Springfield News Sun, SurfWax, The Naked Scientists, Times of India, US
News and World Report, WAAY, WALB, WALD, WAND, WANE, Washington
Post, WATE, WAVE, WECT, WHBF, WFLX, WFLY, WLIK, WKRN, WMC, WOI,
Women’s Health.gov, WRIC, WTEN News, Yahoo News
2007
Functional Ecology article (Vol. 22, pp. 68-77)
Nature Reviews Microbiology, The Post Chronicle, Spektrumdirekt, Medi-
Lexicon, Innovations Report, Medical News Today, EurekAlert, United Press
VetsCite.Org
Functional Ecology article (Vol. 20, pp. 290-300)
Thomson Essential Science Indicators “hot-paper” in Ecology

2006

Faculty of 1000, Biology review of article in General and Comparative Endocrinology (Vol. 140, pp. 126-135)
Faculty of 1000, Biology review of article in Physiological and Biochemical Zoology (Vol. 78, pp. 60-68)

2004
Spotlight on Science at the Smithsonian for article in Ecology (Vol. 85, pp. 2323-2331)

2003

Textbook highlights of research

2009

2008
Avian immunology. Davison, Kaspers, and Schat, eds. Highlight of Martin et al., 2004, Ecology

Invited seminars

2012
Bucknell University (Darwin Day speaker)
International Society for Avian Endocrinology, Gifu, Japan
University of Florida, Animal Molecular and Cellular Biology Program

2011
University of Tartu (Estonia)
University of Georgia
Oregon State University
Penn State University (CIDD)

2010
University of Edinburgh (Scotland)
Tufts University (Graduate Student invited speaker)
University of North Carolina (Graduate Student invited speaker)
Wake Forest University

2009
Archbold Biological Station, Venus, FL
George A. Bartholomew Award lecture, Society for Integrative and Comparative Biology, Boston MA
University of Kentucky, Department of Biology

2008
Cary Institute for Ecosystems Studies, Millbrook NY
University of Central Florida, Department of Biology
NSF Research Collaborative Network: Integrating the Ecology and Evolution of Invasions, Prague, Czech Republic
University of South Florida, Department of Psychology
University of Tampa, Department of Biology

2007
Auburn University, Department of Biological Sciences
Society for Behavioral Neuroendocrinology, Pacific Grove, CA
VIII Neotropical Ornithological Conference, Maturín, Venezuela
UNC Wilmington, Department of Biology and Marine Biology
Oklahoma State University, Department of Zoology
Boise State University, Department of Biology
University of South Florida, Department of Biology
University at Albany, Department of Biological Sciences
University of South Carolina, Department of Biological Sciences
2006
Kansas State University, Division of Biology
University of Buffalo, Department of Biological Sciences
North American Ornithological Congress, Veracruz, Mexico
*Constraints of the Evolutionary Diversification of the Life Histories of Temperate and Tropical Birds* symposium
College of Wooster, Department of Biology
Society of Integrative and Comparative Biology, Orlando, FL.
*Ecological Immunology: Recent Advances and Applications for Conservation and Public Health* symposium

2005
University of Montana, Division of Biological Sciences
Eastern Michigan University, Department of Biology
Ohio State University, Behavioral Neuroscience Program

2003
121st meeting of the American Ornithologist’s Union, Champaign, IL
*S. Charles Kendeigh, Symposium*

**Conference symposia organized**

2011
RCN Ecoimmunology, Edinburgh, Scotland

2010
RCN Ecoimmunology, Tampa, FL

2009
Society for Integrative and Comparative Biology, Boston, MA.
Psychoneuroimmunology Meets Integrative Biology.

2008
American Ornithologist’s Union, Young Investigator Symposium

2006
XXIV International Ornithological Congress, Hamburg, Germany.
Comparative avian immunology: from poultry to passerine (with Dennis Hasselquist)

**Professional presentations**

2012

1) Boruta, M, and **LB Martin**. 2012. Does variation in host physiology occur in urban-rural habitat types? Society for Integrative and Comparative Biology, Charleston, SC.


3) Coon, CAC and **LB Martin**. 2012. Do changes in parasite prevalence facilitate range expansion of Kenyan house sparrows (*Passer domesticus*)? Society for Integrative and Comparative Biology, Charleston, SC.

4) Ledon-Rettig, CC, H Kilvitis, AL Leibl, and **LB Martin**. 2012. Physiological correlates and experimental manipulation of epigenetic variation in adult house sparrows. Society for Integrative and Comparative Biology, Charleston, SC.

5) Liebl, AL, A Garringer, AS Sierra, D Wiley, and **LB Martin**. Variation in glucocorticoid stress response and behavior along a gradient of invasive house sparrows (*Passer domesticus*). Society for Integrative and Comparative Biology, Charleston, SC.

6) Liebl, AL, and **LB Martin**. Seasonal variation in glucocorticoid regulation in house sparrows (*Passer domesticus*). Society for Integrative and Comparative Biology, Charleston, SC.

7) **Martin, LB**, DR Ardia, and DM Hawley. A Research Coordination Network in Ecological Immunology. Society for Integrative and Comparative Biology, Charleston, SC.

8) Schrey, AW, AL Liebl, CL Richards, and **LB Martin**. The relative significance of genetic and epigenetic diversity for house sparrow colonization of Kenya. Society for Integrative and Comparative Biology, Charleston, SC.
2011


10) Coon, CAC, C Caruana, E Andreassi, S McLaughlin, AL Liebl, T Imboma, and LB Martin. Preliminary examination of parasites in invasive Kenyan house sparrow. MalariaRCN workshop, Shepherdstown, WV.


14) Martin, LB, AL Liebl, CAC Coon, CL Richards, and AW Schrey. Physiological mechanisms of range expansion in Kenyan house sparrows. Society for Integrative and Comparative Biology, Salt Lake City, UT.


16) Rohr, JR, T McMahon, LB Martin, S Johnson, and TR Raffel. Amphibian and reptile ecotoxicology: interactions among contaminants and other stressors. 32nd annual SETAC meeting, Boston, MA.

17) Rohr, JR, T McMahon, N Halstead, LB Martin, TR Raffel, JM Romansic, RK Boughton, PW Crumrine, and S Johnson. Fungicide-induced declines of freshwater biodiversity modify ecosystem functions and services. 32nd annual SETAC meeting, Boston, MA.

18) Sears, BF, JR Rohr, and LB Martin. The contribution of anti-parasite behavior to resistance and tolerance of trematode infections in larval anurans. Society for Integrative and Comparative Biology, Salt Lake City, UT.

19) Sears, BF, JR Rohr, and LB Martin. Resistance to trematode parasites carries a developmental cost in anuran tadpoles. American Society of Parasitologists, Anchorage, AK.

20) Urban, AM, CAC Coon, AL Liebl, and LB Martin. Does immune suppression occur to free resources for other physiological processes? Society for Integrative and Comparative Biology, Salt Lake City, UT.

2010


2009


2008

38) Kuhlman, JR and **LB Martin**. Acute stress effects on immunity in the house sparrow. 2008. 126th American Ornithologists Union, Portland, OR.


2007


2006


2005


2004


57) Lee, KA, LB Martin, and M Wikelski. 2004. Sex influences immune responses differently in the House Sparrow and a monomorphic congener, the Eurasian Tree Sparrow. Society of Integrative and Comparative Biology, New Orleans, LA.


2003

60) Hayden, TJ, RH Melton, B Willis, LB Martin, and T Beaty. 2003. Effects of maneuver training activities on the Red-cockaded Woodpecker population on Fort Stewart, GA. 121st Meeting of the American Ornithologists Union, Champaign, IL.


64) Pless, ML, LB Martin, and M Wikelski. 2003. Parasite load in House Sparrows from two latitudes. 121st Meeting of the American Ornithologists Union, Champaign, IL (poster).

2002 and earlier


68) Martin, LB. 2000. Woodpecker abundance and distribution in a managed hardwood forest. Combined Meeting of the Wilson Society and Association of Field Ornithologists, Galveston, TX.


TEACHING and MENTORING

2011 University of South Florida, Lectures in Contemporary Bio (BSC 4933)
    University of South Florida, Introduction to Biodiversity (BSC 2011)
    University of South Florida, The Extended Synthesis (BSC 4933)
    University of South Florida, Physiological Ecology (BSC 4933)

2010 University of South Florida, Ecoimmunology (BSC 4933)
    University of South Florida, Evolutionary Medicine (BSC 4933)

2009 University of South Florida, Immunology in Context (BSC 4933)
    University of South Florida, Introduction to Biodiversity (BSC 2011)
    University of South Florida, Evolutionary Medicine (BSC 4933)
    University of South Florida, Advanced Vertebrate Ecophysiology (2x)

2008 University of South Florida, Physiological Ecology (BSC 4933/6932)
    University of South Florida, Evolutionary Medicine (BSC 4933)

2003 Princeton University, Guest lecturer, Comparative Physiology
2002 Princeton University, Teaching Assistant, Introductory Biology
2001 Princeton University, Teaching Assistant, Tropical Ecology
1999 University of Illinois, Teaching Assistant, Introductory Biology
1997 – 1999 Virginia Commonwealth University, Teaching Assistant, Intro. Biology

Graduate advisees

Complete
Joshua Kuhlman, MS, May 2010

In progress
Martyna Boruta, PhD expected May 2016
Amber Brace, PhD expected May 2016
Courtney Coon, PhD expected May 2013
Andrea Liebl, PhD expected May 2013

Undergraduate honors theses

Ongoing Allesandra Araujo, Brittany Leigh, Desirae Wiley
2011 Alexandra Urban
2010 Laura Kidd, Jaymin Patel
2009 Sean Argo, Nerlyne Desravines, Elaine Rindfuss, Nhan Tu

Undergraduate honors thesis committee

2009 Andrea Schlunk

Undergraduate advisees

2012 Allesandra Araujo, Yuya Burkhart, Chloe Josefsen, Brittany Leigh, Cristina Ruiz Lorenzo, Sara McLaughlin, Ahn-My Nguyen, Sasha Sierra, Victoria
Simenson, Desirea Wiley

2011
Allesandra Araujo, Amber Brace, Chris Caruana, Celina Diego, Ashley Garringer, Melinda Fang, Brittany Leigh, Cristina Ruiz Lorenzo, Holly Kilvitis, Sara McLaughlin, Ahn-My Nguyen, Jennie Nwokoye, Staci Reed, Roanak Shah, Sasha Sierra, Victoria Simenson, Alex Urban, Desirea Wiley

2010

2009

2008
Ohio State: Eric Johnson, Brandon Pollak
USF: Jen Alam, Sean Argo, Said Awad, Mohammed Awad, Patrick Blackburn, Jonathan Dawson, Laura Kidd, Max Miller, Tri Nguyen, Trina Patel, Shauna Pittman, Elaine Rindfuss, Ed Thrombley, Nahn Tu

2005 – 2007
Ohio State: Mike Hamway, Chelsea Hutch, Josh Kuhlman, Eric Johnson, Brandon Pollak

2002 – 2003
Princeton: Jessica Gilliam, Chris Greenman, Peggy Han, Jason Lewittes, Monica Pless, Julia Svoboda

Graduate thesis committee membership

2011
Anna Rivara (Anthropology)
2010
Christina Kobasa
2007 – 2011
Chris Anderson, Lance Arvidson, Kerry Bohl, Jayne Gardiner, Taeghan McMahon, Nick Osman

Post-doctoral fellowship application sponsorships

2012
Roi Dor, Marie Curie Career Re-integration Grant (Israel, U Tel Aviv)
2011
Leone Brown, Life Sciences Research Foundation
2009
Cris Ledon-Rettig, NSF Minority Post-doctoral Fellowship (awarded)
Peter Pap, Marie Curie Fellowship application
2008
Jim Rivers, Smith Fellowship, Society for Conservation Biology
2008
Dustin Rubenstein, eBIRD travel grant awardee (NSF-RCN, awarded)
2007
Jim Rivers, Co-PI for NSF International Post-doctoral Fellowship

External PhD thesis examiner:

2011
University of Tartu (Estonia), Elin Sild (Peeter Horak lab)
University of Southern Mississippi, Aaron Hollbrook (Jodie Jawor lab)

SERVICE

Editorial service

2010 – 2015
Editorial Board, Functional Ecology
2010 – 2012
Editorial Board, Proceedings of the Royal Society of London, B
2009 - 2011
Guest Editor, Special Issue of Functional Ecology, Ecological Immunology
**Professional organizations**

- 2007 – 2009  Member, Psychoneuroimmunological Research Society
- 2005 – present  Member, Society of Behavioral Neuroendocrinology
- 2004 – 2006  Member, Ecological Society of America
- 2001 – present  Member, Society for Integrative and Comparative Biology
- 2001 – present  Full member, Sigma Xi Scientific Honor Society
- 2000 – present  Member, Alpha Phi Alpha Honor Society
- 1999 – present  Member, American Ornithologists Union
- 1996 – 1997  President, Graduate Organization of Biology Students, VCU

**Professional committees**

- 2011 – 2012  Student Award Committee, American Ornithologists Union
- 2009 – 2010  Chair, Awards Committee, American Ornithologists Union
- 2007 – 2009  Awards Committee, American Ornithologists Union
- 2007 – 2009  Early Professional Committee, American Ornithologists Union

**University of South Florida**

- 2011 – 2012  Graduate Council (and Curriculum subcommittee member)

**University of South Florida, College of Arts and Sciences**

- 2010-2012  Instructor Promotion Committee

**University of South Florida Integrative Biology service**

- 2011  USF-IB Seminar Committee
- 2011  USF-IB Internal Chair Search Committee
- 2010 – 2012  USF-IB Faculty Advisory Committee
- 2010 – 2011  USF-CAS Instructor Promotion Committee
- 2008 – 2010  USF-IB Graduate Student Admissions Committee
- 2008 – 2010  USF-IB Seminar Committee
- 2009  USF-IB Instructor Search Committee
- 2009  USF-IB Disease Biologist Search Committee

**Panel service**

- 2012  National Science Foundation, Animal Behavior (pre-proposals)
- 2010  National Science Foundation, Organism-Environment Interactions

**Ad hoc peer review**


Grantors: The US - Israel Bi-national Agricultural Research and Development Fund (BARD), Netherlands Organisation for Scientific Research, NSF IOS Functional and Regulatory Systems; National Environmental Research Council

Book publishers: Princeton University Press, Elsevier

Public outreach

2008 Judge, Student Presentations, Society for Integrative and Comparative Biology (2 divisions)
2006 Judge, Student Presentations, North American Ornithological Congress
Judge, Ohio Academy of Sciences, State Science Day
2005 Judge, Denman Undergraduate Research Forum, Ohio State University
Speaker, Career Day, Mansion Day School, Columbus OH
Interpreter, Brain Awareness Week, COSI Science Center, Columbus OH
2004 Contributor, National Institute of Invasive Species Science Database
Advocate, New York Bird Monitoring, Wildlife Conservation Society

CURRENT COLLABORATORS:

Dan Ardia (Franklin and Marshall) Michael Bailey (Ohio State)
Staffan Bensch (Lund University) Matt Betts (Oregon State)
Raoul Boughton (Archbold) Ryan Calsbeek (Dartmouth)
Dana Hawley (Virginia Tech) Dennis Hasselquist (Lund University)
Felecia Keesing (Bard College) Kirk Klasing (UC Davis)
Rick Ostfeld (Cary Institute) Jen Owen (Michigan State)
Robert Ricklefs (U Missouri Saint Louis) Michael Romero (Tufts University)
Jason Rohr (South Florida) Dustin Rubenstein (Columbia)
Gabriele Sorci (U Bourgogne) Lillian Stark (Florida Dept. of Health)
Brian Trainor (UC Davis) Dave Westneat (Kentucky)

Research network memberships:

Integrating the Ecology and Evolution of Invasions (Ruth Hufbauer and Mark Torchin, PIs)

HOSPnet: a network of 23 domestic and international house sparrow researchers (LB Martin, PI)
CURRICULUM VITAE

Earl D. McCoy
Department of Integrative Biology
University of South Florida
Tampa, FL 33620,
USA

813-974-5219
813-974-3263 (FAX)
edm@mail.usf.edu
http://shell.cas.usf.edu/~mccoylab/index.html

DEGREES

BACHELOR OF SCIENCE
Florida State University, 1970

MASTER OF SCIENCE
University of Miami, 1973
Major Professor: R.H. Hofstetter

DOCTOR OF PHILOSOPHY
Florida State University, 1977
Dissertation: Diversity of Terrestrial Arthropods in Northwest Florida Salt Marshes.
Major Professor: D.R. Strong

PROFESSIONAL POSITIONS

BIOLOGICAL INTERN
Merritt Island National Wildlife Refuge, 1969

TEACHING AND RESEARCH ASSISTANT
Florida State University, 1973-1977

INSTRUCTOR
Organization for Tropical Studies, 1977

MARSH ECOLOGIST
Florida Medical Entomology Laboratory, University of Florida, 1977-1978
ASSISTANT PROFESSOR
Department of Biology, University of South Florida, 1978-1983

VISITING ASSISTANT PROFESSOR
Mountain Lake Biological Station, University of Virginia, 1981-1983

ASSOCIATE PROFESSOR
Department of Biology, University of South Florida, 1983-1989

VISITING ASSOCIATE PROFESSOR
Mountain Lake Biological Station, University of Virginia, 1983-1987

PROFESSOR
Department of Biology, University of South Florida, 1989-

ASSOCIATE CHAIRMAN
Department of Biology, University of South Florida, 1992-2006

ASSOCIATE CHAIRMAN
Department of Integrative Biology, University of South Florida, 2006-

AWARDS AND HONORS

ARNOLD SCHOLARSHIP

MAYTAG FELLOWSHIP
Maytag Foundation, 1970-1973

CITATION CLASSIC
Institute for Scientific Information, 1990

FLORIDA LEGISLATURE’S TEACHING INCENTIVE AWARD
University of South Florida, 1994

PROVOST’S FACULTY EXCELLENCE AWARD
University of South Florida, 1995

FLORIDA LEGISLATURE’S PROFESSIONAL EXCELLENCE AWARD
University of South Florida, 1998

PRESIDENT’S FACULTY EXCELLENCE AWARD
University of South Florida, 2003

MERITORIOUS SERVICE AWARD
United States Fish and Wildlife Service, 2005

ASKOUNES-ASHFORD DISTINGUISHED SCHOLAR AWARD
University of South Florida, 2009

BIOGRAPHIES

AcademicKeys Who’s Who in Science Higher Education
American Men and Women of Science
Dictionary of International Biography
Directory of American Scholars
Leading Scientists of the World
Lexington Who’s Who
Men of Achievement
RESEARCH

My research interests and activities incorporate a wide variety of disciplines, including biogeography, population and community ecology, statistical ecology, conservation and restoration ecology, fire ecology, and philosophy. I am particularly interested in trying to solve theoretical and practical problems related to the environment by using the range of ideas and tools from these disciplines, and thereby arrive at reasonable solutions to environmental problems. Much of the recent and current research in my laboratory emphasizes conservation and restoration of the fragmented and severely threatened upland habitats of Florida. Field projects have focused on, among other things, the demography of the threatened sand skink and of the rare Florida scrub lizard; the habitat preference of the oak toad and of the ground skink, common species that appear to avoid reclaimed lands; movement patterns and paternity of gopher tortoise juveniles; comparative biology of common and rare frogs on lands altered by development; control of disease susceptibility, transmission, and virulence in the gopher tortoise; and analysis of the rate of decline of biodiversity in central Florida. Philosophical projects have focused on, among other things, the scientific status of applied ecology; the ways in which science and policy are interconnected; the ways in which the largely theoretical principles of ecology can be used to undergird environmental decision-making; the ethical basis of environmental decision-making; and risk analysis, mainly as it involves the importation of biological control agents.

GRANTS AND CONTRACTS

8. Studies on the relative herbivore damage accrued by Vaccinium (Ericaceae) plants growing in sun and shade (Undergraduate Research Support). 1982. UNIVERSITY OF VIRGINIA. $2,000.
9. Insect species richness along temperate altitudinal gradients. 1983. UNIVERSITY OF SOUTH FLORIDA. $5,000.
17. Distribution of gopher tortoises (Gopherus polyphemus) on selected state parks in Florida (with H.R. Mushinsky). 1990. FLORIDA PARK SERVICE. $45,000.
23. Studies of restoration of scrub habitat on abandoned orange groves and wildlife recolonization (Graduate Research Support) (with H.R.
29. Habitat requirements of key vertebrate species that are under-represented on phosphate mined lands (with H.R. Mushinsky). 1998. FLORIDA INSTITUTE OF PHOSPHATE RESEARCH. $288,000.
30. Biology of the threatened sand skink, Neoseps reynoldsi, on restored scrub habitat (Graduate Research Support) (with H.R. Mushinsky). 1999. DISNEY WILDLIFE CONSERVATION FUND. $19,000.
38. Anurans, cypress domes, and minimum flows and levels (with H.R. Mushinsky). 2004. SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT. $65,000.
40. Anuran usage of well fields in urbanized settings (with H.R. Mushinsky).
2006. SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT. $80,000.
42. Experimental restoration of Florida scrub on the Lake Wales Ridge (with E. Menges et al.). 2008. FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION. $195,000. (ACTIVE)
43. Compatibility of gopher tortoises with cows (with H.R. Mushinsky et al.). 2009. FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION. $105,000. (ACTIVE)
44. Effective monitoring of Florida Sand Skink, Plestiodon (Neoseps) reynoldsi, population trends (with H.R. Mushinsky). 2010. US FISH AND WILDLIFE SERVICE. $175,000. (ACTIVE)
45. Habitat Conservation Plan for Polk County, Florida (with D. Sumpter et al.). 2010. POLK COUNTY HCP. (ACCEPTED CONTINGENT UPON FUNDING)
___ Habitat Conservation Plan for Lake County, Florida (with D. Sumpter et al.). (IN REVIEW)
___ Habitat Conservation Plan for Lake County, Florida (with S. Kennedy et al.). (IN REVIEW)

PUBLICATIONS: JOURNAL ARTICLES

9. Rey, J.R. & E.D. McCoy. 1979. The application of island-biogeographic
theory to the pests of agricultural crops. ENVIRONMENTAL ENTOMOLOGY 8: 577-582.


44. **McCoy**, E.D. & K.S. Shrader-Frechette. 1992. Community ecology, scale,


HERPETOLOGY (IN PRESS)


___. Guzy, J.C., E.D. McCoy, A.C. Deyle, S. Gonzalez, N. Halstead & H.R. Mushinsky. Urbanization interferes with the use of amphibians as indicators of wetland health. (IN REVIEW)

___. McCoy, E.D., K. Basiotis, K.M. Connor & H.R. Mushinsky. An ecological trap that occurs even without misinterpretation of cues. (IN REVIEW)

___. McCoy, E.D., J.M. Styga, C.A. Rizkalla & H.R. Mushinsky. Fire intervals affect ectoparasite prevalence on lizards in the Florida Scrub ecosystem. (IN REVIEW)


___. Schrey, A.W., K.A. Ashton, H.R. Mushinsky & E.D. McCoy. The Peninsula Crowned Snake (Tantilla relicta relicta) follows a concordant phylogeographic pattern with other scrub reptiles on the Lake Wales Ridge in central Florida. (IN REVIEW)

___. Halstead, N., H.R. Mushinsky & E.D. McCoy. Prescribed fire as a management tool for maintaining herpetofaunal diversity in an urban “island.” (IN REVIEW)


McCoy, E.D. & H.R. Mushinsky. Using comparative demography to provide some guidelines for turtle harvesting. (IN REVIEW)

McCoy, E.D., H.R. Mushinsky & J.K. Lindzey. Possible chronic stress in the Gopher Tortoise caused by degeneration of its habitat. (IN REVIEW)


PUBLICATIONS: BOOKS AND CHAPTERS


139. McCoy, E.D. Error and logic in statistics. In: *Ecological Statistics* (Fox et al., Eds.). (VOLUME UNDER CONSIDERATION FOR PUBLICATION)


**PUBLICATIONS: TECHNICAL REPORTS**


160. Mushinsky, H.R. & E.D. McCoy. Habitat requirements of key vertebrate species that are under-represented on phosphate mined lands. FLORIDA INSTITUTE OF PHOSPHATE RESEARCH (IN PRESS)

SEMINARS

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA
ARCHBOLD BIOLOGICAL STATION
BODEGA BAY MARINE LABORATORY
FLORIDA ATLANTIC UNIVERSITY
FLORIDA STATE UNIVERSITY
FLORIDA TECHNOLOGICAL UNIVERSITY
GEORGIA SOUTHERN UNIVERSITY
MOTE MARINE LABORATORY
MOUNTAIN LAKE BIOLOGICAL STATION
SAVANNAH RIVER ECOLOGY LABORATORY
SOUTHERN ILLINOIS UNIVERSITY
STETSON UNIVERSITY
UNIVERSITY OF CALIFORNIA, DAVIS
UNIVERSITY OF COLORADO
UNIVERSITY OF FLORIDA
UNIVERSITY OF MAINE
UNIVERSITY OF MARYLAND
UNIVERSITY OF NEVADA
UNIVERSITY OF SOUTH FLORIDA
UNIVERSITY OF TAMPA
UNIVERSITY OF VIRGINIA
VILLANOVA UNIVERSITY
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

PRESENTATIONS

AMERICAN ASSOCIATION FOR LABORATORY ANIMAL SCIENCE (FLORIDA)
AMERICAN MUSEUM OF NATURAL HISTORY
   Invited Symposia: (1) Vicariance Biogeography; (2) Conservation, Restoration, and Management of Tortoises and Turtles
AMERICAN ORNITHOLOGIST'S UNION
AMERICAN SOCIETY FOR SURFACE MINING AND RECLAMATION
AMERICAN SOCIETY OF ICHTHYOLOGISTS AND HERPETOLOGISTS
   Invited Symposia: (1) North American Tortoises: Conservation and Ecology; (2) Conservation of Reptiles and Amphibians; (3) Science and Conservation: Tales from the Front; (4) Partners in Amphibian and Reptile Conservation; (5) Exotics and Extinction: Fates of Fishes, Amphibians, and Reptiles in the Americas; (6) Turtle Ecology
AMERICAN SOCIETY OF ZOOLOGISTS
ARCHBOLD BIOLOGICAL STATION
   Invited Symposium: Fiftieth Anniversary
ASSOCIATION OF PACIFIC COAST GEOGRAPHERS
BRITISH ECOLOGICAL SOCIETY
   Invited Symposium: The Tropical Rain Forest; Abstract: Tropical Rain Forest: Ecology and Management
   Published Abstract: Chadwick & Sutton, Eds. Leeds Philosophical and Literary Society, p. 102
CANADIAN AMPHIBIAN AND REPTILE CONSERVATION NETWORK
   Keynote Address: Education and Conservation in Herpetology
CONSERVATION AND BIOLOGY OF TORTOISES AND FRESHWATER TURTLES SYMPOSIUM
   Invited Session: Florida Turtles: Conservation Challenges and Opportunities
DESERT TORTOISE COUNCIL
   Invited Workshop: Desert Tortoise Health and Disease
ECOLOGICAL SOCIETY OF AMERICA
   Invited Symposium: Ecological Ethics: Building a Practical Code of Ethics
for Ecologists
Published Abstracts: Bulletin of the Ecological Society of America 57: 30;
59: 102; 60: 114; 67: S232; 71: 246; 74: S52; 76: S(2) 175; 77: S(3) 196,
293, 318, 322, 395, 431
Organized Poster Session: New Directions in an Ancient Ecosystem:
Syntheses, Mechanisms, Models, and Applications in Florida Scrub
Research

ENTOMOLOGICAL SOCIETY OF AMERICA
Invited Symposium: Risk Assessment in Biological Control

FLORIDA A&M UNIVERSITY
Invited Symposium: Nature and Management of the Inter-Tidal Marshes of
the Gulf Coast

FLORIDA ANTI-MOSQUITO ASSOCIATION

FLORIDA DEFENDERS OF THE ENVIRONMENT
Invited Symposium: Salt Marshes of the Gulf Coast of Florida

FLORIDA DEPARTMENT OF NATURAL RESOURCES

FLORIDA ENTOMOLOGICAL SOCIETY
Invited Symposia: Behavioral Ecology

FLORIDA GOVERNOR’S CONFERENCE
Invited Symposia: (1) Alternative Management of Salt Marshes; (2)
Ecosystem Management

FLORIDA HERPETOLOGY CONFERENCE
Invited Symposium: Florida Herpetology in the Twenty-First Century

FLORIDA SCRUB SYMPOSIUM

FLORIDA SEA GRANT
Invited Symposium: Bay Area Scientific Information

GEOLOGICAL SOCIETY OF AMERICA
Invited Symposium: Evolutionary Paleobiogeography

GOPHER TORTOISE COUNCIL
Invited Symposium: The Status and Conservation of Florida Turtles
Invited Workshop: Gopher Tortoise Status
Invited Workshop: Information Gaps and Research Needs for the Gopher
Tortoise
Keynote address: Science, advocacy, ethics, and the Gopher Tortoise
(Council)

HERPETOLOGISTS’ LEAGUE
Invited Symposium: Contemporary Herpetological Research: A Tribute to
Robert Jaeger as 20-Year Editor of Herpetologica

INTERNATIONAL CONFERENCE ON TURTLES AND TORTOISES
Invited Symposium: Life History and Population Dynamics

INTERNATIONAL CONGRESS OF ECOLOGY

INTERNATIONAL CONGRESS OF ENTOMOLOGY
Invited Symposium: Theoretical Aspects of Insect Biogeography

INTERNATIONAL CONGRESS OF SYSTEMATIC AND EVOLUTIONARY
BIOLOGY
INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE (TFTSG)
Invited Symposium: Florida Turtles: Conservation Challenges and Opportunities
LAKE WALES RIDGE ECOLOGICAL WORKING GROUP
NATIONAL CONFERENCE ON ECOSYSTEM RESTORATION
NORTH AMERICAN CONFERENCE ON SAVANNAS AND BARRENS
POWDERMILL OCCASIONAL FRESHWATER TURTLE CONFERENCE
SMITHSONIAN INSTITUTION
Invited Symposium: Species as Particles in Time and Space
SOCIETY FOR CONSERVATION BIOLOGY
SOCIETY FOR ECOLOGICAL RESTORATION
Invited Symposium: Success Criteria and Monitoring
SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES
Keynote Address: What should we do about the decline in biodiversity?
Keynote Address: Science, advocacy, and the race to extinction: The tortoise and the skink
Symposium: Life History and Ecology of Chelonians
US FISH AND WILDLIFE SERVICE
Invited Symposium: Florida Scrub
WESTERN SOCIETY OF NATURALISTS
Invited Symposium: Marine Biogeography and Evolution in the Southern Hemisphere
WORLD CONGRESS OF HERPETOLOGY
Invited Symposium: Conservation of Amphibians and Reptiles

TEACHING

I am interested in cultivating individual discovery through active learning. I believe that, increasingly, both undergraduate and graduate students expect to be taught rather than to learn. In science, a passive approach to gaining knowledge severely limits what a student is capable of achieving. I use a variety of classroom techniques designed to involve students in the learning process, by encouraging them to participate. My classes are open forums, where students can feel free to present ideas and ask questions at any point. My tests are essay examinations whenever feasible, with questions designed to synthesize the information learned in class. I employ computer exercises extensively, because they allow students to explore classroom topics, especially mathematical concepts, in detail and at their own speeds. I also employ field exercises extensively, because they provide experience in practical problem solving. My interest in cultivating individual discovery is reflected in my strong support of student research. I have taken more than 50 undergraduate students into my laboratory to do research, which provides them with the best opportunity available for active learning. Each student is given background reading material and an introduction to the project in which he or she is involved, is required to take notes of activities, and is required to make a presentation at the end. I have served on the committees of about a dozen honors students, guiding them
through their first real attempts at research. I have served on the Master’s or Doctoral committees, or as an outside examiner, of more than 100 graduate students at seven universities in the United States, Australia, Israel, Netherlands, and South Africa.

GRANTS AND CONTRACTS

UNIVERSITY OF SOUTH FLORIDA (INNOVATIVE TEACHING GRANT)..$4000.

47. Introductory biology course redesign and new skills course for the Department of Integrative Biology. 2011. NATIONAL CENTER FOR ACADEMIC TRANSFORMATION (with S.S. Bell). $5000

PUBLICATIONS


COURSES

UNDERGRADUATE LABORATORIES
Florida State University: Comparative Vertebrate Physiology, Entomology, General Biology, Histology, Introductory Botany, Introductory Ecology, Introductory Zoology, Transmission Genetics

UNDERGRADUATE COURSES

GRADUATE COURSES AND SEMINARS
University of Virginia, Mountain Lake Biological Station: Insect Ecology, Plant-Animal Interactions
FIELD COURSES
   National Science Foundation: Project First
   Organization for Tropical Studies: Tropical Ecology

WORKSHOPS
   Hillsborough County Secondary Schools: Ecological Methods, Conservation Methods
   University of South Florida, Bachelor of Independent Studies: Ecological Principles

POSTDOCTORAL ASSOCIATES

PHILLIP BATEMAN (PhD Open University, UK)
ERIC BRITT (PhD University of California, Irvine)
STEVEN CAMPBELL: For the Desert Tortoise Science Advisory Committee (PhD University of Maine)
ALESSANDRO CATENAZZI (PhD Florida International University)
ROBERT KLUSON (PhD University of California, Santa Cruz)
ROBIN MOORE (PhD University of Kent, UK)
CAROL RIZKALLA (PhD Purdue University)
AARON SCHREY (PhD Southern Illinois University)

PHD STUDENTS

EDWARD PROFFITT (1983)
   Dissertation: The influences of cumulative area, patch size, and frequency of disturbance on marine infaunal community structure.

SHANNON BROS (1985)
   Dissertation: The role of barnacles in regulating initial recruitment to a fouling community in Tampa Bay, Florida.

BRIAN WITZ (1994)
   Dissertation: The foraging behavior and physiological ecology of Cnemidophorus sexlineatus (Squamata: Teiidae) in a Florida sandhill habitat.

DAWN WILSON (1996)
   Dissertation: Nesting ecology of the striped mud turtle, Kinosternon baurii, in a central Florida population.

PABLO DELIS (2001)

CHERIE KELLER (2005)
   Dissertation: Assessment of resource selection using remote sensing and GIS for two vertebrates:
The gopher tortoise and the North Atlantic right whale.

BRIAN HALSTEAD (2008)
Dissertation: *Predator behavior and prey demography in patchy habitats.*

TRAVIS ROBBINS (2010)

ALICIA FOX (Candidate)
Project: Genetic parentage analysis of the Florida Sand Skink

MS STUDENTS

EUGENE SCHUPP (1981)

JOHN JUILIANNA (1984)
Thesis: *Wing polymorphism and habitat quality in a delphacid planthopper Prokelesia marginata.*

DAWN WILSON (1990)
Thesis: *Activity patterns, home range sizes, and burrow usage of juvenile gopher tortoises, Gopherus polyphemus.*

PABLO DELIS (1993)

PATRICIA HARTMANN (1993)
Thesis: *Demography of a population of the Florida scrub lizard (Sceloporus woodi) in a sand pine scrub on the Lake Wales Ridge of central Florida.*

KEVIN CONNOR (1996)
Thesis: *Homing behavior and orientation in the gopher tortoise, Gopherus polyphemus.*

ERIC SUTTON (1996)
Thesis: *A mark-recapture study of the sand skink, Neoseps reynoldsi, and a comparison of sand skink sampling methods.*

DANYEL SCHMUTZ (1997)
Thesis: *Microhabitat distribution of the Florida mouse, Podomys floridanus, on native upland sites and reclaimed mined land.*

WESLEY SHOCKLEY (1997)
Thesis: *A morphometric and skeletochronological analysis of Neoseps reynoldsi, the sand skink.*

ALEXANDRA COLLAZOS (1998)
Thesis: *Microhabitat selection in Neoseps reynoldsi, a Florida sand-swimming skink.*

CHELCY FORD (1999)
Thesis: *Indications of forest stress and mortality along the Myakka River using tree-ring analysis.*

**KAREN HILL (1999)**
Thesis: *Responses of released populations of the sand skink, Neoseps reynoldsi, to scrub habitat translocation in central Florida.*

**GEORGE NAVRATIL (1999)**
Thesis: *The effects of land management practices on the sand skink, Neoseps reynoldsi.*

**STIG RAVDAL (2000)**
Thesis: *The effects of silviculture and prescribed burning on herpetofauna in Florida sand-pine scrub.*

**KRISTIE GIANOPULOS (2001)**
Thesis: *Responses of the threatened sand skink (Neoseps reynoldsi) and other herpetofaunal species to controlled burning and clear cutting in the Florida scrub habitat.*

**KRISTEN PENNEY (2001)**
Thesis: *Factors affecting translocation success and estimates of dispersal and movement of the sand skink, Neoseps reynoldsi, on restored scrub.*

**TERRI STILSON (2001)**
Thesis: *Movement patterns and food selection in juveniles of the gopher tortoise.*

**KRISTIN CARUSO (2002)**
Thesis: *Microhabitat preferences of the oak toad (Bufo quercicus) and explanations for the species' absence on reclaimed phosphate-mined lands.*

**CAROLYN MEYER (2002)**
Thesis: *Responses of environmental variables to land management practices in Florida scrub habitat and restoration efforts in former scrub habitat.*

**KATHLEEN BARRETT (2003)**
Thesis: *Microhabitat preferences of Eumeces inexpectatus, the southeastern five-lined skink: Explanations for its rarity on reclaimed phosphate-mined lands.*

**JAMIE COLSON-MOON (2003)**
Thesis: *Reproductive characteristics, multiple paternity, and mating system in a central Florida population of the gopher tortoise, Gopherus polyphemus.*

**SHANNON GONZALEZ (2004)**
Thesis: *Biological indicators of wetland health: Comparing qualitative and quantitative measures with anuran measures.*
SUSANNAH RIEDL (2006)
Thesis: The effects of translocation on movement, reproductive activity, and body condition of resident and translocated gopher tortoises (Gopherus polyphemus) in central Florida.

NEJMA PIAGENTINI (2006)
Thesis: The science and policy that compels the wetland mitigation of phosphate-mined lands.

KATHERINE BASIOTIS (2007)
Thesis: The effects of invasive cogongrass (Imperata cylindrica) on the threatened gopher tortoise (Gopherus polyphemus).

NEAL HALSTEAD (2007)
Thesis: Long term effects of prescribed fire on reptile and amphibian communities in a Florida sandhill habitat.

IRMGARD LUKANIK (2007)
Thesis: An evaluation of movement patterns and effects of habitat patch size on the demography of the Florida mouse (Podomys floridanus).

KRISTAN ROBBINS (2007)
Thesis: Spatially-explicit habitat suitability analysis of juvenile gopher tortoises (Gopherus polyphemus).

ROBBIN CAPERS (2010)
Thesis: Foraging decisions of nocturnal mice under direct and indirect cues of predation risk.

JACQUELINE GUZY (2010)

BRADLEY HAUCH (2010)
Thesis: Using microhabitat data to determine appropriate models for estimating suitable scrub habitat for the Florida Sand Skink (Plestiodon reynoldsi)

NICHOLAS OSMAN (2010)
Thesis: Experimental translocation of the Florida Sand Skink (Plestiodon reynoldsi) into varying microhabitat types: Success of a highly adapted species across diverse environmental conditions.

SARAH SMILEY (2010)
Thesis: The distribution and population dynamics of the golden mouse (Ochrotomys nuttali) at its southern range periphery.

ANNA DEYLE (2011)

ADCOCK (Candidate)
Project: Reproduction in sirens

ANNA HATHAWAY (Candidate)
Project: Reproductive biology of relocated gopher tortoises.

WILLIAM HENTGES (Candidate)
Project: Interaction of relocated gopher tortoises with cattle.

ANTHONY HALL (Candidate)
Project: Geotaxis and burrow location in the Gopher Tortoise.

ADDITIONAL POSTDOCTORAL ASSOCIATE AND GRADUATE STUDENT PUBLICATIONS


GRADUATE STUDENT COMMITTEE MEMBERSHIP

RANDY DAY (PhD, 1982)  THOMAS BANCROFT (PhD, 1983)
BRANDT HENNINGSEN (PhD, 1984) WAYNE HOFFMAN (PhD, 1984)
STEPHEN PATTON (PhD, 1986) PAMELA BOTTS (PhD, 1992)
KEITH WALTERS (PhD, 1987) HWEY-LIAN HSIEH (PhD, 1989)
DAVID TOMASKO (PhD, 1989) REED BOWMAN (PhD, 1992)
TODD BOWDISH (PhD, 1996) ERNST PEEBLES (PhD, 1996)
CHRISTOPHER POMORY (PhD, 1997) CHERYL WILGA (PhD, 1997)
BRADLEY ROBBINS (PhD, 1998) JEFFREY STREELMAN (PhD, 1998)
KEITH TARVIN (PhD, 1998) MARIA CATTELL (PhD, 2001)
KEVIN JANZEN (PhD, 2001) EMILY SEVERANCE (PhD, 2002)
WILLIAM ELLIS (PhD, 2003) ANNE MCMILLEN-JACKSON (PhD, 2003)
MICHAEL TRINGALI (PhD, 2003) ANNA BASS (PhD, 2006)
CAITLIN CURTIS (PhD, 2009) GABE HERRICK (PhD, 2010)
ANGELA COLLINS (PhD Candidate) TAMMY FOSTER (PhD Candidate)
HEATHER JEZOREK (PhD Candidate) JUSTIN KREBS (PhD Candidate)
KEITH STOKES (PhD Candidate)

GARY PATTON (MS, 1982) JEFFERY CHURCHILL (MS, 1983)
DEREK CURRIE (MS, 1983) ANDREA FULLER (MS, 1983)
EVA JONES (MS, 1985) DAVID MILLER (MS, 1985)
WILLIAM VICKERS (MS, 1985t) LAURIE MACDONALD (MS, 1986)
SUSAN SERVICE (MS, 1986) PAMELA BOTTS (MS, 1987)
MENDI RAYMOND (MS, 1987) CHRISTOPHER SHEA (MS, 1987)
DARREN WILLIAMS (MS, 1987) MARTHA DUNHAM (MS, 1988)
MARK HOWERY (MS, 1990) BERNARD KAISER (MS, 1990)
RAYMOND LORAINE (MS, 1990) TIMOTHY MORTON (MS, 1990)
RONALD SCHAUB (MS, 1990) JOSEPHA KURDZIEL (MS, 1991)
BARBARA HOFFMAN (MS, 1992) STEPHEN MULLIN (MS, 1992)
LACEY KNOWLES (MS, 1993) KENNETH FERGUSON (MS, 1994)
DEREK JOHNSON (MS, 1994) ERIC HUDSON (MS, 1995)
DANIEL MOON (MS, 1995) JILL GOLDSTEIN (MS, 1996)
KEENEY HAYES (MS, 1996) KAREN MOODY (MS, 1996)
ROBERT BROOKS (MS, 1997) JESSICA KOELSCH (MS, 1997)
LITTLE BEN MOTTEN (MS, 1999) MARY STONE (MS, 1999)
DESIREE SASKO (MS, 2000) GADDY BERGMANN (MS, 2002)
TAMMY FOSTER (MS, 2002) MATTHEW ALEXANDER (MS, 2003)
KARA TEAGUE (MS, 2003) SHERI BARTON (MS, 2006)
NATE GODDARD (MS, 2010) CHRISTOPHER HAGGARTY (MS, 2010)
JOSHUA KUHLMAN (MS, 2010) MONICA HAMBERG (MS Candidate)
CHRISTINA KOBASA (MS Candidate) SARAH SANFORD (MS Candidate)
PROFESSIONAL SERVICE

SYMPOSIUM AND CONFERENCE ORGANIZATION

AMERICAN SOCIETY OF ICHTHYOLOGISTS AND HERPETOLOGISTS /
HERPETOLOGISTS' LEAGUE / SOCIETY FOR THE STUDY OF
AMPHIBIANS AND REPTILES CONFERENCE
AMERICAN SOCIETY OF ZOOLOGISTS CONFERENCE
FLORIDA ENTOMOLOGICAL SOCIETY SYMPOSIA (Behavioral Ecology)
   77: 1-84, 78: 1-55.
FLORIDA FIELD BIOLOGISTS CONFERENCE
NATIONAL SCIENCE FOUNDATION / CONSEJO NACIONAL DE CIENCIA Y
TECNOLOGIA CONFERENCE (North American Tortoises)
   Published Proceedings: Aguirre et al., Eds., 1995, Proceedings, North
   American Tortoise Conference.
UNIVERSITY OF SOUTH FLORIDA / SEA GRANT CONFERENCE (Habitat
Structure)
   Published Proceedings: Bell et al., Eds., 1991, Habitat Structure: The
   Physical Arrangement of Objects in Space.

PROPOSAL REVIEWING

AUSTRALIAN RESEARCH COUNCIL
CENTER FOR FIELD RESEARCH
CHARLES A. LINDBURGH FUND
CZECH SCIENCE FOUNDATION
FIELD MUSEUM OF NATURAL HISTORY OF CHICAGO
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
FLORIDA GAME AND FRESH WATERS FISH COMMISSION
ISRAEL INTER-UNIVERSITY FUND FOR ECOLOGY
NATIONAL RESEARCH COUNCIL
NATIONAL SCIENCE FOUNDATION
NETHERLANDS MINISTRY OF AGRICULTURE
ORGANIZATION FOR TROPICAL STUDIES
PARTNER UNIVERSITY FUND
SOUTH AFRICAN COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH
SWISS NATIONAL SCIENCE FOUNDATION
UNITED KINGDOM NATURAL ENVIRONMENT RESEARCH COUNCIL
UNITED STATES DEPARTMENT OF DEFENCE (ARMY)
UNITED STATES DEPARTMENT OF DEFENCE (STRATEGIC
ENVIRONMENTAL RESEARCH AND DEVELOPMENT)
MANUSCRIPT REVIEWING

ACTA OECOLOGICA
ACTA ZOOLOGICA MEXICANA
AMERICAN MIDLAND NATURALIST
AMERICAN NATURALIST
ANIMAL CONSERVATION
AUSTRALIAN JOURNAL OF ECOLOGY
AUSTRALIAN JOURNAL OF MARINE AND FRESHWATER RESEARCH
AUSTRALIAN NATIONAL HERITAGE TRUST
BIODIVERSITY AND CONSERVATION
BIOLOGICAL INVASIONS
BIOSCIENCE
BIOTROPICA
CANADIAN JOURNAL OF FISHERIES AND AQUATIC SCIENCES
CANADIAN JOURNAL OF FOREST RESEARCH
CHELONIAN CONSERVATION AND BIOLOGY
CONSERVATION BIOLOGY
COPEIA
CURRENT ZOOLOGY
ECOGRAPHY
ECOLOGICAL ENTOMOLOGY
ECOLOGY AND ECOLOGICAL MONOGRAPHS
ENDANGERED SPECIES RESEARCH
ENVIRONMENTAL ENTOMOLOGY
EUROPEAN JOURNAL OF WILDLIFE RESEARCH
EVOLUTION
FLORIDA ENTOMOLOGIST
FLORIDA SCIENTIST
FOREST ECOLOGY AND MANAGEMENT
HERPETOLOGICA
HERPETOLOGICAL MONOGRAPHS
HERPETOLOGICAL REVIEW
ISRAEL JOURNAL OF ECOLOGY AND EVOLUTION
ISRAEL JOURNAL OF ZOOLOGY
JOURNAL OF ARID ENVIRONMENTS
JOURNAL OF BIOGEOGRAPHY
JOURNAL OF COASTAL RESEARCH
JOURNAL OF HERPETOLOGY
JOURNAL OF MAMMALOGY
JOURNAL OF PARASITOLOGY
JOURNAL OF TROPICAL ECOLOGY
JOURNAL OF VEGETATION SCIENCE
JOURNAL OF WILDLIFE MANAGEMENT
LAND DEGRADATION AND DEVELOPMENT
MARINE BIOLOGY
MARINE ECOLOGY PROGRESS SERIES
NUMERACY
OEKOLOGIA
OIKOS
PALEO BIOLOGY
PLOS ONE
QUARTERLY REVIEW OF BIOLOGY
SCIENCE
SOUTHEASTERN NATURALIST
SYNTHESE
SYSTEMATIC ZOOLOGY
TRENDS IN ECOLOGY AND EVOLUTION
TROPICAL ZOOLOGY
WILDLIFE SOCIETY BULLETIN
WILDLIFE RESEARCH

BOOK REVIEWING

ACADEMIC PRESS (Pre-Publication)
CAMBRIDGE UNIVERSITY PRESS (Pre-Publication)
CHAPMAN & HALL (Pre-Publication)
COLUMBIA UNIVERSITY PRESS (Pre-Publication)
ISLAND PRESS (Pre-Publication)
PRENTICE-HALL (Pre-Publication)
SCIENCE
SYSTEMATIC ZOOLOGY
WILEY-BLACKWELL (Pre-Publication)

EDITING

CONSERVATION BIOLOGY
ECOLOGY AND ECOLOGICAL MONOGRAPHS
FLORIDA ENTOMOLOGIST

PROFESSIONAL ORGANIZATION MEMBERSHIP

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES
AMERICAN SOCIETY OF NATURALISTS
ASSOCIATION FOR TROPICAL BIOLOGY
ECOLOGICAL SOCIETY OF AMERICA
ENTOMOLOGICAL SOCIETY OF AMERICA
FLORIDA ENTOMOLOGICAL SOCIETY
FORMAL ADVISORY GROUP MEMBERSHIP

CLARK COUNTY, NEVADA (MSHCP Assessment Committee)
FLORIDA AQUARIUM (Design Committee)
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION (Gopher Tortoise Stakeholders Advisory Committee)
HIGHLANDS/POLK COUNTIES, FLORIDA (MSHCP Advisory Committee)
INTERNATIONAL UNION FOR THE CONSERVATION OF NATURE / SPECIES SURVIVAL COMMISSION (Tortoise and Freshwater Turtle Specialist Group)
LOWRY PARK ZOO (Design Committee)
MALPAI BORDERLANDS GROUP (Science Advisory Panel)
NATURE CONSERVANCY (Comprehensive Wildlife Conservation Strategy Advisory Group)
SOUTHWEST FLORIDA RESEARCH STATION (Scientific Advisory Committee)
SUSTAINABLE ECOSYSTEMS INSTITUTE (Conservation Science Panel)
UNITED STATES FISH AND WILDLIFE SERVICE (Desert Tortoise Recovery Plan Assessment Committee)
UNITED STATES FISH AND WILDLIFE SERVICE (Desert Tortoise Science Advisory Committee)
UNIVERSITY OF SOUTH FLORIDA, ENVIRONMENTAL SCIENCE AND POLICY PROGRAM (Organizational Committee)
UNIVERSITY OF SOUTH FLORIDA, WATER RESOURCES INSTITUTE (Organizational Committee)
PROFESSIONAL CONSULTATION

AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES
DEFENDERS OF WILDLIFE
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
FLORIDA INSTITUTE OF PHOSPHATE RESEARCH
FLORIDA PARK SERVICE
HILLSBOROUGH COUNTY MEDICAL EXAMINER
TAMPA MUSEUM OF SCIENCE AND INDUSTRY
NATURE CONSERVANCY
NEON DESIGN CONSORTIUM
SIERRA CLUB LEGAL DEFENSE FUND
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
UNITED STATES FISH AND WILDLIFE SERVICE
RESUME

PHILIP J. MOTTA, Ph.D.
Professor of Biology
University of South Florida
Department of Biology
4202 East Fowler Ave., Tampa, Florida 33620
http://luna.cas.usf.edu/~motta/

EDUCATION

Duke University, Durham, North Carolina. 1972-1975. B.S., cum Laude,
Distinction in Zoology.

PROFESSIONAL SOCIETIES

American Society of Ichthyologists and Herpetologists
American Society for Integrative and Comparative Biology

EMPLOYMENT & POSITIONS

08/00 Professor of Biology, University of South Florida
2000 Adjunct Scientist, Mote Marine Laboratory
08/92 Associate Professor of Biology, University of South Florida
01/88-07/92 Assistant Professor of Biology, University of South Florida
01/87-12/87 Visiting Assistant Professor of Biology, University Virgin Islands
09/87 Associate Professor of Zoology, University of Montana.
01/82-87 Assistant Professor of Zoology, University of Montana.
01-04/81 Part-time Sessional Lecturer, Biology Program, University of
British Columbia, Vancouver, B.C., Canada.

TEACHING

1988-present University of South Florida

Chordate Anatomy, Zoo 3233
Comparative Vertebrate Anatomy, Zoo 3713
Ichthyology Zoo 5456
Functional and Ecological Morphology, Bsc 5931
Physical Principles in Biology, Bsc 5931
Advances in Ichthyology, Zoo 6455
Topics in Ecology, Bsc 6932, 5932
Human Anatomy, Bsc 4933, APB 3190
Fundamentals of Zoology, Zoo 2010
Food: Personal and Global Perspectives, Bsc 2025
Biology of Sharks and Rays, Bsc 4933

1987 University of The Virgin Islands
Vertebrate Structure and Function
Evolution
Senior Science Seminar
Introductory Biology
Natural Science

Comparative Vertebrate Anatomy
Integrated Human Anatomy and Physiology (team taught)
Behavioral Ecology
Morphological Basis of Behavior
Ethological Methods
Functional Morphology
Behavioral Ecology of Predators and Prey

Jan-April, 1981 University of British Columbia
Introductory Biology

TEACHING AWARDS

1999 USF Teaching Incentive Award for outstanding teaching
1995 USF Teaching Incentive Award for outstanding teaching
1991 Outstanding Undergraduate Teaching Award, USF.
1986 University of Montana Merit salary increase for outstanding teaching

GRANTS AND AWARDS

2009 Collaborative research: Experimental studies to reveal the boundary layer control mechanism of shark skin. National Science Foundation, IOS Processes Structures and Integrity, 09/01/09 -08/31/12, $107,718.00
2009 Collaborative Research: Multi-sensory guidance of marine animal navigation and prey capture. National Science Foundation, 03/01/09-03/31/13, $141,076.00
2008 Florida Institute of Oceanography, ship-time grant in support of teaching, $8,000.00.
2007 Collaborative Research: The function and evolution of the hammerhead cephalofoil. National Science Foundation, 05/1/07-04/30/10, $227,937.00.
2007 Biomechanical analysis of feeding mechanisms in hammerhead and reef sharks. Established Researcher Award, USF Division of Sponsored Research, 01/01/07-
12/31/07; $4300.00
2007 Biomechanics and Functional Biology of Vertebrates. Faculty Grant for Undergraduate Research, USF Honors College, $5,000. (With S. Deban)
2006 Collaborative research and conservation of whale sharks in the Gulf of Mexico and Caribbean Sea. International Travel Grant, USF Division of Sponsored Research, $1000.00
2002 Florida Institute of Oceanography ship-time grant for research, $10,000.00
2001 Towed System Marine Life Attack Reduction, US Navy Naval Sea Systems Command-Texas Research Institute, $84,196.00
2001 Florida Institute of Oceanography ship-time grant in support of teaching, $10,000.00
2000 Florida Institute of Oceanography ship-time grant for research, $10,000.00
1999 Florida Institute of Oceanography ship-time grant in support of teaching, $8,000.00
1998 Feeding mechanics of sharks: functional and evolutionary implications. National Science Foundation, 11/01/98 - 07/30/00, $88,457.00
1998 A multi-disciplinary approach to coral reef ecology and evolution, with S.A. Karl. Florida Institute of Oceanography ship-time grant, $8,000.00
1997 Florida Institute of Oceanography facilities support for teaching, Keys Marine Lab.
1996 USF Research and Creative Scholarship grant, 12 months, $5,075.00
1995 Florida Institute of Oceanography facilities support for teaching, Keys Marine Lab.
1992 A functional morphological analysis of the feeding mechanisms in sharks. National Science Foundation, 04/01/92 - 09/30/94, $173,750.00
1992 Florida Institute of Oceanography ship-time grant in support of teaching, $4,000.00
1992 Department of Natural Resources contract, 01/01/92 - 12/31/92, $47,612.00
1991 South West Florida Water Management District contract, 08/22/89 - 02/22/91, $117,270.00
1991 Facilities use time at NOAA's National Undersea Research Center, Key Largo, FL, Trophic and habitat partitioning in labrid fishes in the Florida Keys.
1991 International Travel Grant, USF Division of Sponsored Research, $1000.00
1990 Florida Institute of Oceanography ship-time grant in support of teaching and research, $9,000.00
1989 Florida Institute of Oceanography facilities support for research, Keys Marine Lab, $1,730.00
1989 USF Research and Creative Scholarship Grant, $7,402.00
1989 USF President's Council Faculty Award Grant, $4,875.00
1988 Florida Institute of Oceanography ship-time grant in support of teaching and research, $10,200.00
1986 Recipient, University of Montana Research Grant, $1,470.00
1985 Montana University system MONTS-NSF Grant, $8,535.00
1983 Co-recipient (with E. Reese, University of Hawaii), Earthwatch grant, Ecology of Coral Reef Fishes, $27,000.00
1983 University of Montana Research Grant, $1,672.00
1982 University of Montana Research Grant, $1,078.00
1982 Montana University System MONTS-NSF Grant, $7,000.00
1980 Natural Sciences and Engineering Research Council of Canada Postdoctoral Fellowship, University of British Columbia, Declined due to tenure-track position.
1980 Natural Sciences and Engineering Research Council of Canada Visiting Fellowship, Department of Fisheries and Oceans, Pacific Biological Station, Nanaimo, B.C., Canada. Declined due to tenure-track position.

GRADUATE THESES COMPLETED
2009  Andrey Castro. Use of molecular tools on surveys of genetic variation and population structure in three species of sharks. PhD, April 2009 (co-Chair with S. Karl).
2007  John Tyminski. Androgen receptors in the bonnethead shark (Sphyrnatiburo): cDNA cloning and tissue-specific expression in the male reproductice tract. M.S., August 2007. (co-Chair with J. Gelsleichter)
2003  Mason Dean. Feeding behavior and prey capture kinematics of the lesser electric ray Narcine brasiliensis M.S., July 2003.
2003  Michael Matott, An examination of modulation of feeding behavior in the nurse shark Ginglomostoma cirratum (Bonaterre 1788). M.S., April 2003
2002  Heather T. Porter, A comparison of feeding kinematics of three ramfeeding fishes: Florida gar (Lepisosteus platyrhincus), redfin needlefish (Strongylura notata), and great barracuda (Sphyraena barracuda). M.S., May 2002.
1983  Deborah Burgoon. Brain cooling and the rete mirabile ophthalmicum in the calliope hummingbird (*Stellula calliope*). M.S., University of Montana.

CURRENT GRADUATE STUDENTS

Samantha Mulvany, PhD candidate
Angela Barker, PhD candidate
Laura Habegger, PhD candidate
Amber Ferguson, MS candidate

SEMINARS/PRESENTATIONS [Titles not included]

2010 Motta, P. America Elasmobranch Society, Providence RI.
2009 Mulvany, S.L. and P.J. Motta. Society for Integrative and Comparative Biology, Boston, MA.
2009 Whitemack, L.B. and P.J. Motta. Society for Integrative and Comparative Biology, Boston, MA.
2009 Habegger, M.L., Motta, P.J. and D.R. Huber. Society for Integrative and Comparative Biology, Boston, MA.
2009 Mara, K.R., Motta, P.J. and J.A. Pfeifferberger. Society for Integrative and Comparative Biology, Boston, MA.
2008 Habegger, L., Huber, D, and P. Motta. American Society of Ichthyologists and Herpetologists meeting, Montreal, CA.
2007 Motta, P., Davis, R. Hueter, R., Maslanka, M. and S. Mulvany. 2007. American Society of Ichthyologists and Herpetologists meeting, St. Louis, MO
2007 Habegger, M.L. and P.J. Motta. 2007. American Society of Ichthyologists and Herpetologists meeting, St. Louis, MO
2007 Whitenack, L.B. and P.J. Motta. 2007. American Society of Ichthyologists and Herpetologists meeting, St. Louis, MO
2007 Mara, K.R., Huber, D. and P.J. Motta. 2007. American Society of Ichthyologists and Herpetologists meeting, St. Louis, MO
2007 Wilga, C.D., Motta, P.J. and C.P. Sanford. 2007. Society for Integrative and Comparative Biology, Phoenix, AZ.
2006 Motta, P.J. Ohio University, Department of Biological Sciences, Athens, OH.
2006 Motta, P.J. Department of Biology, University of Tampa, April 14, 2006.

2004  Motta, P.J. Distinguished Speaker, 29th Annual Albert L. Tester Memorial Symposium, March 11-12, 2004, Department of Zoology, University of Hawaii.


2002  Motta, P.J. Department of Biology, Texas A & M University Galveston, Invited seminar.

2002  Dean, M.N., and P.J. Motta. American Society of Ichthyologists and Herpetologists meeting, Kansas City, MO.


2001  Department of Biology, Daytona Beach Community College, Invited seminar.
2001  SeaGate Corporation annual awards retreat, Atlantis Hotel, Paradise Island, Bahamas, Invited speaker.
2000  Environmental Constraints on Feeding Biomechanics, The University of Liege, Belgium, Invited symposium speaker.
1999  Department of Biology, University of Miami, Invited seminar.
1999  Department of Zoology, University of Oklahoma, Invited seminar.
1998  Plenary address, American Society of Ichthyologists and Herpetologists meeting, University of Guelph, Guelph, Ontario, Canada.
1998  Feeding Biology of Elasmobranchs Symposium, American Society of Ichthyologists and Herpetologists meeting, University of Guelph, Guelph, Ontario, Canada. Co-organizer.
1995  Department of Biology, Louisiana State University, Baton Rouge, LA, Invited seminar.
1994  Fourth International Congress of Vertebrate Morphology, University of Chicago.
1994  Selected Topics in Elasmobranch Physiology Symposium, University of Southern California, American Society of Ichthyologists and Herpetologists. Invited Symposium Speaker.
1993  Biology of Feeding in Fishes, Amphibians, and Reptiles Symposium, University of Texas at Austin, American Society of Ichthyologists and Herpetologists. Invited Symposium Speaker.
1992  Ecomorphology of Fishes Symposium, Delivered two papers, University of Illinois, American Society of Ichthyologists and Herpetologists. Co-organizer and speaker.
1991  Department of Biology, Florida International University, Miami, Florida. Job Seminar.
1989  Department of Natural Resources, St. Petersburg, Florida. Invited Seminar.
1987  Fairleigh Dickinson University, West Indies Laboratory, St. Croix. U.S. Virgin Islands, Invited Seminar.
1987  University of South Florida, Biology Department, Tampa, Florida, Job Seminar.
1986  University of Texas, Austin, Texas, Department of Zoology. Job Seminar.
1986  University of Texas Marine Science Seminar, Port Aransas, Texas. Job Seminar.
1986  Florida International University, Miami, Florida. Biology Department, Job Seminar.
1981  Fairleigh Dickinson University, West Indies Laboratory, St. Croix, U.S. Virgin Islands. Invited Seminar.

PUBLICATIONS

BOOKS

ARTICLES IN REFEREED JOURNALS


SYMPOSIA & MEETINGS ORGANIZED

1988 The Biology of The Butterflyfishes, Organized by P. Motta, American Society of Ichthyologists and Herpetologists, University of Michigan, Ann Arbor, Michigan, June.
2005 Joint meeting of the American Society of Ichthyologists and Herpetologists, Co-Local Chair, Tampa, Florida, July 7-11, 2005.
ABSTRACTS


Lang, A, Motta, P. , Habegger, M., and R. Hueter. 2010. Experimental studies to reveal the boundary layer control mechanisms of shark skin. IMA Workshop “Natural Locomotion in Fluids and on Surfaces: Swimming, Flying, and Sliding,” June 1-5, 2010, Minneapolis,MN.
Motta, P. 2010. Simplicity and conservation of the selachian feeding bauplan. Invited symposium address, American Society of Ichthyologists and Herpetologists, Providence, RI.


Mulvany, S.L. and P.J. Motta. 2009. Feeding kinematics of the Atlantic stingray (Dasyatis sabina) and yellow stingray (Urobatis jamaicensis). Society for Integrative and Comparative Biology, Boston, MA.


Habegger, M.L., Motta, P.J. and D.R. Huber. 2009. Feeding biomechanics and bite force in bull sharks (Carcharhinus leucas) over ontogeny. Society for Integrative and Comparative Biology, Boston, MA.


Motta, P., Davis, R. Hueter, R., Maslanka, M. and S. Mulvany. 2007. Whale shark filter feeding: morphology, mechanism and consumption. American Society of Ichthyologists and Herpetologists meeting, St. Louis, MO

Habegger, M.L. and P.J. Motta. 2007. Bite force in the great barracuda (Sphyraena barracuda) during ontogeny. American Society of Ichthyologists and Herpetologists meeting, St. Louis, MO

Whitenack, L.B. and P.J. Motta. 2007. Three-dimensional finite element analysis of selachian teeth. American Society of Ichthyologists and Herpetologists meeting, St. Louis, MO


Mara, K.R and P.J. Motta. 2007. Morphometric head shape comparison among hammerhead sharks (Sphyrnidae). Society for Integrative and Comparative Biology, Phoenix, AZ.


Tyminski, J.P., Gelsleichter, J. and P.J. Motta. 2006. Bonnethead shark (Sphyrna tiburo) androgen receptor: cDNA cloning and tissue specific expression through the malereproductive cycle. American Society of Ichthyologists and Herpetologists meeting, New Orleans, LA.


Dean, M.N., and P.J. Motta. 2002. Feeding behavior and prey capture kinematics of the lesser electric ray Narcine brasiliensis, with comments on its jaw protrusion mechanism. American Society of Ichthyologists and Herpetologists meeting, Kansas City, MO.


Ichthyologists and Herpetologists meeting, Pennsylvania State University, State College, Pennsylvania


Motta, P.J. 1998. Feeding behavior and mechanics of sharks: past, present and future. Plenary address, American Society of Ichthyologists and Herpetologists meeting, University of Guelph, Guelph, Ontario, Canada.


PUBLIC MEDIA FEATURES

Whale Shark Feeding Frenzies Mystify, Enlighten Scientists. LiveScience.com, 08 March, 2011
Shark’s Speedy Skin. CBC Radio, December 4, 2010
Whale shark, the world’s largest fish, thrives on tiny crustaceans and worms. The Washington Post, November 1, 2010
Consultant to “Dangerous Encounters” with Brady Barr, National Geographic Television, 2010 “As it happens-Shark Forensics” CBC Radio Show, December 4, 2009
Barracuda Bite, Daily Planet, Discovery Channel Canada, Jan 19, 2009 Canada TV broadcast.
Sharks, Ciniflix Productions, broadcast on Animal Planet and Discovery Channel, 2009
Why a speeding shark is like a gold ball. ABC News, November 10, 2008.
Video footage provided for “Evolve”, an Optomen Production, History Channel Series.
Consultant to “Myth Busters” television show, March 2008
“Live from Georgia Aquarium” Today Show, NBC Television, February 12, 2008
World’s Biggest Fish Is a Delicate Feeder, Washington Post, September 3, 2007, A08
Killer Shark Live, Brighter Pictures, Endemol UK, October 5, 2005 live broadcast to UK
Shark, Smithsonian Magazine, August 2005
Biting Back, St. Petersburg Times, January 4, 2002
Shark Studies Featured on National Television, Inside USF, June 2-29, 2000
Reef Shark Adventure, Extreme Contact Series, Animal Planet Television, May, 2000
Sharks, Beyond Science Television Series, WUSF, April 2000
Future Shark, Shark Week Series, Discovery Television, Summer 2000 and 2001
USF COMMITTEE ACTIVITIES

Departmental: Faculty Advisory Committee (CoChair), IACUC Animal Use and Care Committee, Marine Biology Degree organizing Ad Hoc Committee, Marine Ecology Search Committee (Chair), Biology Instructor Search Committee (Chair), Graduate recruitment (Chair), Faculty Planning Committee (Chair), Graduate Admissions, Curriculum, Seminar, Vehicle Committee.

University: Faculty Development Committee (Chair), College of Arts and Sciences Advisory Committee, Diversity Committee, Tenure and Promotion Committee, Teaching Incentive Award Committee, Outstanding Undergraduate Teaching Award Committee.
CURRICULUM VITA

General Data

Name: Henry Richard Mushinsky
Position: Professor of Integrative Biology & Graduate Director
University of South Florida
Tampa, Florida 33620
Phone: Office: 813-974-5218  Home: 813-949-7005
E-mail: Mushinsk@.usf.edu
FAX: 813-974-3263
Marital status: Married (Patricia Yarnot), two children.

Education (Phi Kappa Phi)

<table>
<thead>
<tr>
<th>Institution</th>
<th>Major</th>
<th>Degree</th>
<th>Date</th>
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<tbody>
<tr>
<td>Tusculum College</td>
<td>Biology</td>
<td>B.S.</td>
<td>1967</td>
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<tr>
<td>East Tennessee State U.</td>
<td>Biology</td>
<td>M.S.</td>
<td>1969</td>
</tr>
<tr>
<td>Clemson University</td>
<td>Zoology</td>
<td>Ph.D.</td>
<td>1973</td>
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Employment

Graduate Director, Department of Integrative Biology 1998 - present
Professor, University of South Florida, 1993 - present
Associate Professor, University of South Florida, 1986 - 1993
Assistant Professor, University of South Florida, 1982 - 1986
Lecturer in Biology, University of South Florida, 1979 - 1981
Assistant Professor, Louisiana State University, 1973 - 1979

Research Areas

1. Conservation and biodiversity of vertebrates
2. Restoration ecology
3. Gopher Tortoise and Florida Sand Skink ecology and conservation
4. Use of anurans to monitor wetland health
5. Fire ecology

University Committees and Service

Two terms (6 years) on the USF Faculty Senate and the Senate Executive Committee as the Sargent at Arms
USF Presidents Council 1994-96 (selected to serve as an advisor to President Castor)
USF Faculty Senate, ad hoc committee (chair) on tenure and promotion policies (1995)
USF Research Foundation, member of the Board of Directors (1995-98)
Chair, Dean of the Graduate School-Search Committee 1996-97
Search Committee for Associate Provost and Dean of the Graduate School, 2004-05
Search Committee for Associate Provost and Dean of the Graduate School, 2005-06
USF Institutional Animal and Care Committee (IACUC) 2007-present
College of Arts and Sciences, School of Natural Sciences and Mathematics
Graduate Curriculum Committee 2009 – present; Chair 2012-13
Faculty Advisor for the Pre-Veterinarian Society 2002-present
Faculty Advisor for the Herpetological Society 2008-present

**Professional Organizations and Societies**

- Sigma Xi-The Research Society
- Ecological Society of America
- American Society of Ichthyologists and Herpetologists
  - Board of Directors, 1990-1995, 2004-09
  - Environmental Quality Committee, 1995-present
  - Meeting Management Committee 2003-present
  - President Elect -2007
  - President -2008
  - Executive Committee 2008-present
- Herpetologists’ League (1974-present)
  - Executive Council, 1993-1996
  - Associate Editor 1993-2005
  - Conservation Committee, Chair 1995-2004
  - Editorial Board Member 1998-2010
  - Vice President 2002-03
  - President HL 2004-05
- Society for the Study of Amphibians and Reptiles (1974-present)
  - Board of Directors, 1989-1992
  - Associate Editor, Journal of Herpetology, 1992-96
  - President, SSAR, 1997
- Society for Conservation Biology (1985-present)
- Chelonian Conservation and Biology
  - Editorial Board Member 2000-present
- Florida Academy of Sciences
- Gopher Tortoise Council
  - Co-chair, 1993-1995
- IUCN (The World Conservation Union) Species Survival Commission
  (invited member of the Tortoise and Freshwater Turtle Specialist group, serving since 1994)
- World Congress of Herpetology (WCH), Elected to the Executive Committee of the WCH (2002-2008)
Research Grants and Fellowships (since 1995)

1993-97 Studies on relocation of the Florida mouse to restored xeric upland habitat. IMC-AGRICO, with Earl D. McCoy as co-principal investigator, $25,600.

1993-95 Studies of resident vertebrates on mined and unmined lands in central Florida. Florida Institute for Phosphate Research, with Earl D. McCoy as co-principal investigator. Two years, $252,000.


1994-95 North American Tortoises Conservation Conference in Durango Mexico. Supported by the National Science Foundation and the Science Foundation of Mexico, $14,970.

1995-Studies of wildlife usage and restoration of upland habitats on phosphate-mined lands in central Florida - Supplement. Florida Institute for phosphate research, with Earl McCoy as co-principal Investigator. $17,646.


1995-97 "Fundamental of Natural Science for Non-Science Students-An Integrated Approach." National Science Foundation, with Len Vacher, Prith Mukherjee, and Jay Worrell as co-principal investigators. $100,000.

1997-"Ecological genetics of the threatened salt marsh snake Nerodia clarkii, Florida Nongame Wildlife Program, with Steve Karl and Kevin Jansen. $6,000.

1999-2001-"Habitat requirements of key vertebrate species that are underrepresented on phosphate mined lands." Florida Institute of Phosphate Research, with Earl McCoy as co-principal investigator. $285,000.


1999-2001-"Biology of the threatened sand skink on restored scrub habitat" Disney Conservation Award, with Earl McCoy. $20,000.

2001-2003 - Using anurans to evaluate the relative health of wetlands at Starkey Well Field. South West Florida Water Management District, With Earl McCoy. $50,000.
2002-2007 – Upper Respiratory Tract Disease and Environmentally-Threatened Gopher Tortoise. National Institutes of Health with funding from NSF. With Mary Brown (UF), Paul Klein (UF), Madan Oli (UF), and Earl McCoy. $2,200,000.


2003 – The Effects of Predation on Fragmented Prey populations. Established Researcher Grant, Sponsored Research, USF. $5,000


2006-2010 – Experimental studies of translocation of the sand skink (*Neoseps reynoldsi*). Disney Development Corporation, $119,000

2006-2010 – Ecological and genetic studies of the sand skink (*Neoseps reynoldsi*) in central and south Florida. Rinker Construction Company, $750,000

2008-2012 - Experimental restoration of Florida scrub on the Lake Wales Ridge (with Menges et.al), Florida Fish and Wildlife Conservation Commission. 195,000

2007-2010 – Anurans as indicators of the health of wetlands at well fields in central Florida. South West Florida Water Management District, With Earl McCoy. $80,000.

2009-2011 – Are tortoises compatible with cows? Florida Fish and Wildlife Conservation Commission. With Earl McCoy, $200,000

2010-2011 – Effective monitoring of the Florida Sand Skink *Plestiodon (Neoseps) reynoldsi* population trends. US Fish and Wildlife Service. With Earl McCoy, $125,000

2011-2012- Effective monitoring of the Florida Sand Skink *Plestiodon (Neoseps) reynoldsi* population trends. US Fish and Wildlife Service. With Earl McCoy, $50,000

2012-2013 – Multi-species Habitat Conservation Plan (Polk County, Florida) (with Sumpter et al.) Florida Fish and Wildlife Conservation Commission $162,000

2012-2013 – Assessing translocation success of the Florida Sand Skink (with McCoy) Disney Development Corporation. 11,000

2012-2017 USDA National Needs Graduate Program Proposal: Training the next generation of under-represented and cross-disciplinary scholars at the frontiers of agricultural sustainability and biosecurity, USDA (PI: Jason R. Rohr, Co-PIs:
Invited Seminars

Louisiana State University, 1974
Southwestern Louisiana State University, 1976
Tulane University, 1977
University of New Orleans, 1978
University of South Florida, 1979
University of Southern Mississippi, 1979
Mote Marine Laboratory, 1980
University of Tampa, 1981,
University of Central Florida, 1982
Charles University, Prague, Czechoslovakia, 1985
University of Florida, Zoology 1986
Georgia Southern University, 1987
University of West Florida, 1988
University of Tampa, 1989
Archbold Biological Station, 1989, 1991, 1992
University of South Florida, College of Architecture, 1990, 2000
University of Michigan, 1991
University of South Florida, 1992, 1997
Stetson University, 1994
New College, University of South Florida, Sarasota 1995
Savannah River Ecology Laboratory, 1995
Canadian Conservation Society, Quebec City, 1999
Powdermill Conference 1999 - Fourth Occasional Freshwater Turtle Conference
Florida Institute of Technology, 2000
University of Florida, Wildlife Ecology 2000
Powdermill Conference 2004 – Fifth Occasional Freshwater Turtle Conference
University of New Orleans, 2004
Powdermill Conference 2006 – Sixth Occasional Freshwater Turtle Conference
Villanova University, 2006
The Pennsylvania State University, 2010
Southeast Louisiana State University, 2010

Journal Referee

American Midland Naturalist, American Naturalist, Animal Behaviour,
Animal Conservation, Brimleyana, Conservation Biology, Copeia,
Ecology, Florida Scientist, Florida Field Naturalist, Herpetologica,

**Articles in Refereed Journals**


*Basidiobolus* sp. and its association with reptiles and amphibians in southern 

and W. B. Stickle. 1984 Organochlorine residue levels in water snakes along 
the Mississippi River in southern Louisiana. *BULLETIN OF ENVIRONMENTAL 
CONTAMINATION AND TOXICOLOGY* 32:460-468.

tailed snake, *Stilosoma extenuatum*, in captivity. *HERPETOLOGICAL REVIEW 
15:67-68.

community: with special attention to *Cnemidophorus sexlineatus*. 
*HERPETOLOGICA* 41:333-342.

communities. Studies in Herpetology. *PROCEEDINGS OF EUROPEAN 

Co., Toronto.

gopher tortoise, *Gopherus polyphemus*, in a sandhill habitat. *HERPETOLOGICA 
44:345-353.

*Ramphotyphlops bramina* (Brahminy blind snake). *HERPETOLOGICAL REVIEW 
18:56.

polyphemus* (Daudin) in relation to size of available habitat. Florida Game and 
Freshwater Fish Commission. *NONGAME WILDLIFE RESEARCH REPORT*. 
pp. 78.


subfuscatus* (Coleoptera: Caribidae) deter predation by *Eumeces inexpectatus* 


83. Mushinsky, H. R. 2006. Front cover photograph, JOURNAL OF HEREDITY, 97. Five year old gopher tortoise (Gopherus polyphemus) at the University of South Florida Ecological Research Area in Tampa


104. Schrey A., Heath S., Ashton K., McCoy E., and H. Mushinsky. 2011. Fire Alters Patterns of Genetic Diversity Among the Florida Sand Skink (Plestiodon reynoldsi), Florida Scrub Lizard (Sceloporus woodi), and Six-lined Racerunner (Aspidoscelis sexlineatus) in Florida Scrub Habitat. JOURNAL OF HEREDITY 102:399-408


117. Mushinsky H.R. 2013. Growth (In The Biology Of North America Tortoises (Rostal, McCoy and Mushinsky ed) JOHN HOPKINS PRESS (IN PRESS)

BEHAVIORAL ECOLOGY AND SOCIOBIOLOGY (IN PRESS)

McCoy, E.D. & H.R. Mushinsky. A fast-slow continuum of turtle life histories, and its relevance to turtle conservation. (IN REVIEW)


Schrey, A.W., K.A. Ashton, H.R. Mushinsky & E.D. McCoy. The Peninsula Crowned Snake (Tantilla relicta relicta) follows a concordant phylogeographic pattern with other scrub reptiles on the Lake Wales Ridge in central Florida. (IN REVIEW)


Schrey A., McCoy E., and H. Mushinsky. Estimating the effective population size of the Florida Sand Skink (Plestiodon reynoldsi) at Archbold Biological Station. (In preparation)


Published Abstracts


Invited Speaker at a National or International Symposium

1985 Herpetofaunal responses to periodic fire. European Society of Herpetologists, Charles University, Prague.

1986 On the trophic position of snakes, snakes or snacks? Snake ecology symposium, American Society of Ichthyologists and Herpetologists, University of British Columbia, Victoria.
1988  Fire as a disturbance agent in terrestrial systems. Symposium on Habitat Structure, University of South Florida, Chinsegut Conference Center, Brooksville, Florida.


1990  The distributions of gopher tortoises on State and Federal lands in Florida. Symposium on North American Tortoises at the American Society of Ichthyologists and Herpetologists Meeting in Charleston, South Carolina.


1993  Anuran biodiversity on an upland habitat in Florida. Second World Congress of Herpetology, Adelaide University, Australia.


1997  Setting the goals for the re-establishment of vertebrate assemblages on reclaimed phosphate mined Lands in central Florida (with McCoy and Kluson). Society for Ecological Restoration, 9th International Conference. Fort Lauderdale, Florida.


1999 Conservation, ethics, and herpetological education in the next millenium. Canadian Amphibian and Reptile Conservation Network. Quebec City, Quebec, Canada. Invited Key Note Speaker


2000 Environmental considerations for turtles relocations (with G. Kuchling). International Conference on Tortoise and Turtle Relocations, Orlando, Florida.


2012 Evaluating the status of a population of translocated Florida Sand Skinks (Plestiodon reynoldsi) (With Earl McCoy) 6th World Congress of Herpetology, Vancouver, British Canada.

Papers Presented to Professional Societies at Annual Meetings


1976  Habitat use among five sympatric species of aquatic snakes (with Hebrard). American Society of Zoologists.


1977  Responses of two sympatric species of water snakes to extracts of commonly ingested prey items (with Hartmann). Louisiana Academy of Science.


1979  Yearly variation in resource use by sympatric water snakes (with Hebrard). Florida Academy of Science.

1979  Thermal niches of ecologically similar water snakes (with Walley). Herpetologists' League/ Society for the study of Amphibians and Reptiles.


1982  Ecological studies on *Basidiobolus* sp., a fungus occurring in the digestive tract of amphibians and reptiles (with Okafor and Merner). Florida Academy of Science.
1983  On the relationship between fire and the herptile community on a sandhill in Florida.  Florida Academy of Science.


1985  Fire and the Florida sandhill herpetofaunal community.  Florida Academy of Science.


1985  On the relationship between fire periodicity, plant structure and herpetofaunal communities in Florida (with McCoy), American Society of Zoologists.


1986  Effects of Planned burning on ground-dwelling beetles in Florida sandhill (with McCoy).  Ecological Society of America.


1988  The influence of habitat structure on gopher tortoise distributions within populations (with McCoy).  Natural Areas Conference: Rare species and significant habitats.


1989  Changes in the demography of gopher tortoises, Gopherus polyphemus in response to disturbance (with McCoy).  American Society of Zoologists.


1990 Rarity of amphibians and reptiles characteristic of scrub habitat of Florida (with McCoy). Ecological Society of America.


1991 Gopher tortoise burrow width to body size relations (with Wilson and McCoy). Florida Academy of Sciences.

1991 Rarity and amphibian and reptile taxa characteristic of Florida scrub (with McCoy). American Society of Ichthyologists and Herpetologists.


1993 Anuran biodiversity on a periodically burned xeric upland habitat in central Florida (with McCoy and Delis). American Society of Ichthyologists and Herpetologists/Herpetologist's League.


1994 Designing refuges for the Florida Sand Pine Scrub Habitat (with McCoy). North American Conference on Savannas and Barrens.


1996 Establishing the differences between vertebrate assemblages of disturbed and undisturbed upland fragments in central Florida (with E.D. McCoy). Ecological Society of America.

1996 Explaining the differences between vertebrate assemblages of disturbed and undisturbed upland fragments in central Florida (with E. D. McCoy). Ecological Society of America


1999. Demography of the Florida scrub lizard, a species at risk. (With McCoy and Hartmann) Ecological Society of America, Washington State University, Spokane.

2000. Demography of the rare Florida scrub lizard in a fragmented habitat. (With McCoy and Hartmann). American Society of Ichthyologists and Herpetologists, La Paz, Mexico.


2003. A comparison of GIS and survey estimates of gopher tortoise habitat and numbers in Florida. (With E. D. McCoy) Joint Meeting of Ichthyologists and Herpetologists, Manaus, Brazil.

2003. Management strategies for the gopher tortoise in the face of exotic and endemic pathogens. (With E. D. McCoy) Joint Meeting of Ichthyologists and Herpetologists, Manaus, Brazil.

2003. Using anurans to measure wetland health on a central Florida, USA, wellfield. (With S. M. Gonzalez and E. D. McCoy) Joint Meeting of Ichthyologists and Herpetologists, Manaus, Brazil.


2003. Temporal and spatial effects of prescribed fire on reptile abundance and diversity. (With N. T. Halstead and E. D. McCoy) Joint Meeting of Ichthyologists and Herpetologists, Manaus, Brazil.


2005. Do gopher tortoises (Gopherus polyphemus) consume exotic cogon grass (Imperata cylindrica)? Results of feeding experiments, With Basiotis and McCoy). American Society of Ichthyologists and Herpetologists, Tampa, FL.


2006. Long-term effects of prescribed fire on reptile and amphibian communities in a Florida sandhill habitat (with Halstead and McCoy), American Society of Ichthyologists and Herpetologists, New Orleans, Louisiana.

2006. Analysis of juvenile Gopher Tortoise (Gopherus polyphemus) foraging paths using correlated random walk models (with Halstead, McCoy and Stilson) American Society of Ichthyologists and Herpetologists, New Orleans, Louisiana.


2007. Diet selection of the coachwhip (Masticophis flagellum) and black racer (Coluber constrictor) in Florida scrub habitat (With Halstead and McCoy. 2007 Joint Meeting of Ichthyologists and Herpetologists. St. Louis, Missouri.

2007. The influence of predators on the survival and abundance of the Florida scrub lizard (Sceloporus woodi) (With Halstead and McCoy. 2007 Joint Meeting of the Ecological Society of America and the Society for Ecological Restoration. San Jose, California.

2007. Anuran calling as an indicator of wetland health: The importance of using variation in landscape composition (with Halstead and McCoy), American Society of Ichthyologists and Herpetologists, St Louis, MO.

2007. The effects of cogongrass (Imperata cylindrica) on the threatened gopher tortoise (Gopherus polyphemus) (with Basiotis and McCoy), American Society of Ichthyologists and Herpetologists, St Louis, MO.


2008. Parentage analysis of the fossorial lizard, *Plestiodon reynoldsi*. (with Fox, Schrey and McCoy) Joint Meeting of Ichthyology and Herpetology, Montreal, Canada


2008. Comparing current to historic southern distribution in a changing landscape, the case of the golden mouse (*Ochrotomys nuttalli*) in Florida (with Smiley and McCoy). Florida Ecology and Evolution Symposium. Archbold Biological Station, Lake Placid, FL


2009 Genetic relatedness in the fossorial sand skink, *Plestiodon reynoldsi*, in the scrub of central Florida. (with Fox, Schrey and McCoy). Society for Integrative and Comparative Biology, Boston, Massachusetts


2009 Mitochondrial DNA variation in golden mice (*Ochrotomys nuttalli*) populations from fragmented and continuous landscapes (with Smiley, Schrey, and McCoy). Annual Meeting of the American Society of Mammalogists. Portland, Oregon

2009. Effects of a managed burn regime on Florida Sand Skink analyzed With microsatellite loci (with Schrey, Fox and McCoy) Annual Meeting of the American Society of Ichthyology and Herpetology. Montreal Canada

2010 Genetic analysis identifies two major barriers to gene flow within the Florida Sand Skink’s distributions (with Schrey, Godley, Ashton, and McCoy). Annual Meeting of the American Society of Ichthyology and Herpetology. Providence, Rhode Island


2011 Urbanization interferes with the use of amphibians as indicators of wetland health. (with Guzy, McCoy, Halstead, Gonzalez and Deyle) Joint Meeting of Ichthyologists and Herpetologists. Minneapolis, Minnesota.


2011. Habitat-specific adaptations in growth rates play a role in species distribution of Sceloporus lizards in Florida (with Robbins and McCoy). Meeting of the Society for Integrative and Comparative Biology, Salt Lake City, UT.


2012. Relocating Gopher Tortoises to a Cattle Ranch. How does Reproductive Output vary Between Years and Resident and Relocated Females? (with Hathaway and McCoy), World Congress of Herpetology Vancouver, B.C. Canada.

**Participation in Graduate Student Education**

The following students have completed graduate degree work under my direction. Many of the USF students had Dr. Earl D. McCoy as Co-advisor.

**Ph.D. Students** (first one is from LSU Baton Rouge):


THOMAS MICHOT (1979)
  Dissertation: Thermal ecology of sympatric water snakes in southern Louisiana.
BRIAN WITZ (1994)
  Dissertation: The foraging behavior and physiological ecology of Cnemidophorus sexlineatus (Squamata: Teiidae) in a Florida sandhill habitat.
DAWN WILSON (1996)
  Dissertation: Nesting ecology of the striped mud turtle, Kinosternon baurii, in a central Florida population.
KEVIN JANSEN (2001)
  Ecological genetics of the salt marsh snake, Nerodia clarkii
PABLO DELIS (2001)
CHERIE KELLER (2005)
  Dissertation: Assessment of resource selection using remote sensing and GIS for two vertebrates: The gopher tortoise and the North Atlantic right whale.
BRIAN HALSTEAD (2008)
  Dissertation: Predator behavior and prey demography in patchy habitats.
TRAVIS ROBBINS (2010)
ALICIA FOX (2013, anticipated)
  Dissertation: Genetic parentage analysis of the Florida Sand Skink

**Master Degree Students** (first three are from LSU, Baton Rouge):

KRISTAN HARTMANN (1976)
JILDA GARTON (1979)
  Thesis: Toxicity and palatability of the Narrow Mouth Toad, Gastrophryne carolinensis
MARY GENE WALLEY (1979)
  Thesis: Thermal ecology of Nerodia fasciatus in a Louisiana bayou
DAVID E. MILLER (1985)
  Thesis: Prey size selection during ontogeny of the mangrove water snake, Nerodia fasciata compressicauda.
LAURIE A. MACDONALD (1986)
  Thesis: The diet of the gopher tortoise, Gopherus polyphemus, in a sandhill habitat in central Florida.
TERRY A. LINLEY (1987)
Thesis: Proximate organic composition and energy content of eggs and hatchlings of the gopher tortoise, Gopherus polyphemus

DARREN WILLIAMS (1987)
Thesis: The effects of fire on the abundance of small mammals on a sandhill habitat.

BRIAN W. WITZ (1987)
Thesis: Pygidal secretions of Pasimachus subsulcatus (Coleoptera: Carabidae) deter predation by Eumeces inexpectatus (Squamata: Scincidae).

RAYMOND K. LORAINE (1990)

BERNARD K. KAISER (1990)
Thesis: Tail loss and dominance in captive adult male Anolis sagrei.

DAWN WILSON (1990)
Thesis: Activity patterns, home range sizes, and burrow usage of juvenile gopher tortoises, Gopherus polyphemus.

STEPHEN J. MULLIN (1992)
Thesis: Predator success as a function of habitat structural complexity in the mangrove salt marsh snake, Nerodia clarkii compressicauda Baird and Girard.

PABLO DELIS (1993)

PATRICIA HARTMANN (1993)
Thesis: Demography of a population of the Florida scrub lizard (Sceloporus woodi) in a sand pine scrub on the Lake Wales Ridge of central Florida.

KEVIN CONNOR (1996)
Thesis: Homing behavior and orientation in the gopher tortoise, Gopherus polyphemus.

ERIC SUTTON (1996)
Thesis: A mark-recapture study of the sand skink, Neoseps reynoldsi, and a comparison of sand skink sampling methods.

KEENEY HAYES (1996)
Thesis: Long-term memory and trap avoidance by the six-line racerunner (Cnemidophorus sexlineatus L.)

DANYEL SCHMUTZ (1997)
Thesis: Microhabitat distribution of the Florida mouse, Podomys floridanus, on native upland sites and reclaimed mined land.

JESSICA KOELSCH (1997)
Thesis: Seasonal movement of West Indian Manatees into and out of Charlotte Harbor in response to environmental gradients.

WESLEY SHOCKLEY (1997)
Thesis: A morphometric and skeletochronological analysis of Neoseps
reynoldsi, *the sand skink.*

ALEXANDRA COLLAZOS (1998)
Thesis: *Microhabitat selection in Neoseps reynoldsi, a Florida sand-swimming skink.*

KAREN HILL (1999)
Thesis: *Responses of released populations of the sand skink, Neoseps reynoldsi, to scrub habitat translocation in central Florida.*

GEORGE NAVRATIL (1999)
Thesis: *The effects of land management practices on the sand skink, Neoseps reynoldsi.*

STIG RAVDAL (2000)
Thesis: *The effects of silviculture and prescribed burning on herpetofauna in Florida sand-pine scrub.*

KRISTIE GIANOPULOS (2001)
Thesis: *Responses of the threatened sand skink (Neoseps reynoldsi) and other herpetofaunal species to controlled burning and clear cutting in the Florida scrub habitat.*

KRISTEN PENNEY (2001)
Thesis: *Factors affecting translocation success and estimates of dispersal and movement of the sand skink, Neoseps reynoldsi, on restored scrub.*

TERRI STILSON (2001)
Thesis: *Movement patterns and food selection in juveniles of the gopher tortoise.*

KRISTIN CARUSO (2002)
Thesis: *Microhabitat preferences of the oak toad (Bufo quercicus) and explanations for the species’ absence on reclaimed phosphate-mined lands.*

CAROLYN MEYER (2002)
Thesis: *Responses of environmental variables to land management practices in Florida scrub habitat and restoration efforts in former scrub habitat.*

KATHLEEN BARRETT (2003)
Thesis: *Microhabitat preferences of Eumeces inexpectatus, the southeastern five-lined skink: Explanations for its rarity on reclaimed phosphate-mined lands.*

JAMIE COLSON-MOON (2003)
Thesis: *Reproductive characteristics, multiple paternity, and mating system in a central Florida population of the gopher tortoise, Gopherus polyphemus.*

SHANNON GONZALEZ (2004)
Thesis: *Biological indicators of wetland health: Comparing qualitative and quantitative measures with anuran measures.*

SUSANNAH RIEDL (2006)
Thesis: The effects of translocation on movements, reproductive activity, and body condition of resident and translocated gopher tortoises (*Gopherus polyphemus*) in Central Florida.

NEJMA PIAGENTINI (2006)
Thesis: The science and policy that compels the wetland mitigation of phosphate-mined lands.

SHERI BARTON (2006)

KATHERINE BASIOTIS (2007)
Thesis: The effects of invasive cogongrass (*Imperata cylindrica*) on the threatened gopher tortoise (*Gopherus polyphemus*).

NEAL HALSTEAD (2007)
Thesis: Long term effects of prescribed fire on reptile and amphibian communities in a Florida sandhill habitat.

IRMGARD LUKANIK (2007)
Thesis: An evaluation of movement patterns and effects of habitat patch size on the demography of the Florida mouse (*Podomys floridanus*).

KRISTAN ROBBINS (2007)
Thesis: Spatially-explicit habitat suitability analysis of juvenile gopher tortoises (*Gopherus polyphemus*).

ROBBIN CAPERS (2010)
Thesis: Foraging decisions of nocturnal mice under direct and indirect cues of predation risk.

JACQUELYNE GUZY (2010)

BRADLEY HAUCH (2010)
Thesis: Using microhabitat data to determine appropriate models for estimating suitable scrub habitat for the Florida Sand Skink (*Plestiodon reynoldsi*).

NICHOLAS OSMAN (2010)
Thesis: Experimental translocation of the Florida Sand Skink (*Plestiodon reynoldsi*) into varying microhabitat types: Success of a highly adapted species across diverse environmental conditions.

SARAH SMILEY (2010)
Thesis: The distribution and population dynamics of the golden mouse (*Ochrotomys nuttali*) at its southern range periphery.

ANNA DEYLE (2011)
Thesis: Population genetics of *Amphiuma means* and *Siren lacertina* in central Florida.

ZACHARY ADCOCK (2012)

ANNA HATHAWAY (2012)
Thesis: Availability and quality of vegetation affects reproduction of the Gopher Tortoise (Gopherus polyphemus) in improved pastures.

WILLIAM HENTGES (Current student)
Project: Interaction of relocated gopher tortoises with cattle.

ADAM EMERICK (Current student)
Evaluating the status of a translocated population of the Florid Sand Skink

SAMANTHA WILBER (starting in January 2013)

GRADUATE STUDENT COMMITTEES

THOMAS BANCROFT (PhD, 1983)
WAYNE HOFFMAN (PhD, 1984)
STEPHEN PATTON (PhD, 1986)
KEITH WALTERS (PhD, 1987)
REED BOWMAN (PhD, 1992)
CHERYL WILGA (PhD, 1997)
KEITH TARVIN (PhD, 1998)
MARIA CATTELL (PhD, 2001)
DANIEL MOON (PhD, 2001)
CAITLIN CURTIS (PhD, 2009)
SAMANTHA MULVANY (PhD, enrolled)
CHARLOTTE STINSON (PhD, enrolled)
CHRISTOPHER ANDERSON (PhD, enrolled)
TEGAN MCMANON (PhD, enrolled)
LARA HABEGGAR (PhD, enrolled)

EVA JONES (MS, 1985)
WILLIAM VICKERS (MS, 1987)
MENDI RAYMOND (MS, 1987)
MARTHA DUNHAM (MS, 1988)
MARK HOWERY (MS, 1990)
RONALD SCHAUB (MS, 1990)
KENNETH FERGUSON (MS, 1994)
DEREK JOHNSON (MS, 1994)
DANIEL MOON (MS, 1995)
JILL GOLDSTEIN (MS, 1996)
KAREN MOODY (MS, 1996)
ROBERT BROOKS (MS, 1997)
DESIREE SASOKO (MS, 2000)
TONIA SCHWARTZ (MS, 2003)
CRISTOS THEOPHILOUS (MS, 2003)
SONYA LECLAIR (MS, 2005)
SHANNON ANSLEY (MS 2006)
AMANDA BAKER (MS, 2006)
LANCE ARVIDSON (MS, 2008)
THERESA PIAZENZA (MS, 2008)
WILLIAM REYERSON (MS, 2008)
PUALA SNADUSKY (MS, 2010)
NICHOLAS LARGI (MS, enrolled)
I have mentored seven Post-doctoral researchers in the past 10 years.

PHILLIP BATEMAN (PhD Open University, UK)
ERIC BRITT (PhD University of California, Irvine)
ALESSANDRO CATENAZZI (PhD Florida International University)
ROBERT KLUSON (PhD University of California, Santa Cruz)
ROBIN MOORE (PhD University of Kent, UK)
CAROL RIZKALLA (PhD Purdue University)
CURRICULUM VITAE

SIDNEY K. PIERCE

I. Personal Data
   Born Holyoke, Massachusetts
   Married, two children

II. Education
   Undergraduate: University of Miami, Bachelor of Education, 1966
   Graduate: Florida State University, Doctor of Philosophy, 1970

III. Academic Activities
   A. Experience in Higher Education

   1966-68 Teaching Assistant, Florida State University
   1968-69 Research Assistant, Florida State University
   1969 (summer) NIH Trainee, Marine Ecology Program, Marine Biological Lab., Woods Hole, Massachusetts
   1969-70 Predoctoral Fellow, Florida State University (NIH)
   1970-73 Assistant Professor, Department of Zoology, University of Maryland, College Park
   1973-77 (summers) Instructor, Marine Biological Lab., Woods Hole, Massachusetts
   1973-78 Associate Professor, Department of Zoology, University of Maryland
   1986-92 Affiliate Senior Staff Scientist, Center of Marine Biotechnology, University of Maryland
   1987-89 Acting Associate Director, Agriculture Experiment Station, University of Maryland
   1987-89 Program Director, Biological Instrumentation Program, National Science Foundation
   1978-00 Professor, University of Maryland
   1979-85, 90-97, 99-00 Director of Graduate Studies, Department of Zoology, University of Maryland
   1990-97, 99-00 Associate Chairman, Department of Zoology, University of Maryland
   1997-99 Acting Chairman, Department of Biology (formerly Zoology), University of Maryland
   2000-2006 Professor and Chair, Department of Biology, University of South Florida
   2000- Professor Emeritus, Department of Biology, University of
IV. Research, Teaching, Service

A. Publications

1. Full papers in refereed journals


regulation of isolated Noetia ponderosa red blood cells: control by Ca²⁺ and

ponderosa red blood cell membranes during cell volume regulation in

mechanism of salinity tolerance in polychaetes: volume regulation by


osmoregulatory mechanisms in the bivalve mollusc, Rangia cuneata. Mar.


27. Prior, D. J. and Pierce, S. K. 1981. Adaptation and tolerance of inverte-
brate nervous systems to osmotic stress. In: Cell Volume Regulation

mediated cell volume regulation in salinity stressed molluscs. In: Cell

electrophysiological properties of Mya arenaria neurons. J. Comp.
Physiol., 144: 165-173.

Ultrastructure of the heart of the marine mussel, Geukensia demissa. J.
Morph., 170: 301-319.

31. Warren, M. K. and Pierce, S. K. 1982. Two cell volume regulatory sys-
tems in the Limulus myocardium: an interaction of ions and quaternary

32. Pierce, S. K. 1982. Invertebrate cell volume control mechanisms: a co-


intracellular choline levels may account for differences in glycine betaine synthesis between conspecific oyster populations responding to hyperosmotic stress. **J. Exp. Zool.** 278: 283-289.


70. Pierce, S. K. and James W. Warren. 2001. The taurine efflux portal used to regulate cell volume in response to hypoosmotic stress seems to be similar in many cell types-lessons to be learned from molluscan red blood cells. **Amer. Zool.** 41:710-720.


2a. Books


2b. Chapters in books


3. Abstracts (published)


Otto, J. and Pierce, S. K. 1978. Role of divalent cations during FAA ac-


taurine efflux and volume recovery of *Noetia ponderosa* (Bivalvia) RBCs during hypoosmotic stress. *Am Zool.* 38: 157A


Quit listing these in 2004.

5. Papers submitted for publication

B. Other Creative and Scholarly Activities

1. Grants and contracts

   General Research Board, "The effect of external ion concentrations on free amino acid efflux from molluscan hearts", University of Maryland, 1971 ($2,100)

   Biomedical Sciences, "The mechanism of osmotically induced amino acid regulation in a cardiac tissue", University of Maryland, 1972 ($2,250)

   National Science Foundation, "The molecular mechanism of molluscan salinity tolerance", 1972 (2 years) ($20,000)

   National Science Foundation, "Passive membrane permeability of control and anaerobiosis: the molluscan mechanism of salinity tolerance", 1975 (2 years) ($41,700)

   Biomedical Science, "The control mechanism of amino acid permeability
during cell volume regulation", University of Maryland, 1976 ($1,200)
National Institutes of Health, "Cellular water balance: the invertebrate mechanism", 1977 (3 years) ($105,000)
Biomedical Science, funds awarded to obtain an atomic absorption spectrophotometer, 1978 ($15,000)
National Institutes of Health, "Cellular water balance: the invertebrate mechanism", 1980 (renewal, 3 years) ($140,000)
National Institutes of Health, "Cellular water balance: the invertebrate mechanism", 1983 (renewal, 3 years) ($250,000)
Biomedical Science, funds awarded to obtain a liquid scintillation counter, 1985 ($20,000)
National Science Foundation, "Genetic controls of cell volume regulation", 1987 (4 years) ($275,000)
National Science Foundation, Travel award program for the 2nd International Congress of Comparative Physiology and Biochemistry, 1987 ($35,000)
National Science Foundation, Travel award program for the 3rd International Congress of Comparative Physiology and Biochemistry, 1990 ($20,000)
National Science Foundation, Funds to obtain a scanning spectrofluorimeter and fluorescent microscope, 1990 ($59,000 plus $41,000 matching from the University)
University of Maryland Agricultural Experiment Station Competitive Grants Program, "The salinity tolerance mechanism of Chesapeake Bay Oysters is less effective than that of coastal conspecifics: Implications for a dying fishery". 1990 ($27,000), 1991 ($25,000), 1992 ($25,000), 1993 ($18,000)
National Science Foundation, "The mechanism of glycine betaine mediated cellular osmoregulation". 1992 (3 years) ($275,000)
National Science Foundation, Travel award program for an International Symposium of Cell Volume Regulation at the joint meeting of APS, ASZ, SEB and CSZ in Cambridge, England, 1992 (Co-PI with Lewis Deaton) ($5000)
National Science Foundation, "Cellular and molecular interactions between symbiotic chloroplasts and molluscan cells" 1995 (PI with Mary Rumpho, Texas A&M) (3 years) ($185,000)
National Science Foundation, "The mechanism of glycine betaine mediated
cellular osmoregulation.  1997  ($180,000) (3 years)
National Science Foundation, "Role of viruses in the life cycle and
endosymbiosis of a sea slug.  2001 ($75,000)-proof of concept award
National Science Foundation, "New transmission electron microscope for the
Department of Biology. 2002  ($175,000).  (PI with C. Dawes, R. Pollenz and
F. Thomas).
National Science Foundation,Endosymbiosis and gene transfer between multi
cellular organisms 2003. ($650,000) 3 years
Private donation from an interested citizen 2008 ($60,000)
Private donation from an interested citizen 2009 ($40,000)
Private donation from an interested citizen 2009 ($80,000)
Private donation from an interested citizen 2010 ($35,000)
Private donation from an interested citizen 2011 ($68,000)
NSF preproposal pending with M. Middlebrooks

2. Special recognitions and achievements

Honors and awards
Faculty research excellence award-Division of Agriculture &
Life Sciences, University of Maryland-1985

Diatome Award for research excellence-1994-Microscopical
Society of America annual meeting

3. Invited seminars and presented papers

Volume control in the ribbed mussel Modiolus demissus (Bivalvia:
Mytilidae).  Paper presented at meetings of the American Society of
Zoology, 1969
Free amino acid efflux from mussel hearts: a demonstration of volume
regulation.  Paper presented at meetings of the American Society of
Zoology, 1970
Osmosis, volume and valves: a comparative study of molluscan salinity
tolerance.  Seminar delivered at Department of Zoology, University of
Rhode Island, 1970
The ionic basis of cellular volume regulation in molluscs.  Paper presented
at meetings of the American Society of Zoology, 1971
Volume regulation of molluscan cells: dependence of metabolism and
membrane potential.  Paper presented at the meetings of the American
Society of Zoology, 1972
Salinity tolerance in molluscs: from the marsh to the membrane. Seminar
delivered at Department of Biology, College of William and Mary,
Virginia, 1972
Osmotic regulation in molluscs: from the salt marsh to the cell membrane.
Seminar delivered at Department of Zoology, University of Maryland, College Park, Maryland, 1974

Osmotic regulation in molluscs: anaerobiosis and membrane permeability.
Seminar delivered at Department of Biology, Georgetown University, Washington, D.C., 1974

The molluscan mechanism of salinity tolerance. Seminar delivered at Department of Invertebrate Zoology, Smithsonian Institution, 1975

The physiological basis of euryhalinity in bivalve molluscs. Seminar delivered at the Chesapeake Biological Laboratory, Solomons, Maryland, 1977

Invited participant in joint USA-USSR conference on "Physiology and biochemistry of aquatic animals." Held at the Belle Baruch Institute for Marine Biology and Coastal Research, University of South Carolina, 1977

The physiological basis of euryhalinity in bivalve molluscs. Seminar delivered at Department of Biology, Wake Forest University, Winston-Salem, North Carolina, 1977

Control of cell volume in salinity-stressed molluscs. Seminar delivered at School of Biological Sciences, University of Kentucky, Lexington, Kentucky, 1979

Control of cell volume in salinity-stressed molluscs. Seminar delivered at Department of Biology, Western Maryland College, Westminster, Maryland, 1979

Control mechanisms of amino acid mediated cell volume regulation in salinity stressed molluscs. Symposium paper presented in the Cell Volume Regulation Symposium at the American Society of Zoologists meeting in Tampa, Florida, 1979

The mechanism of salinity tolerance in bivalve molluscs: from the salt marsh to the cell membrane. Seminar delivered at the Department of Zoology, University of Florida, Gainesville, Florida, 1980

The role of octopamine in the salinity tolerance of *Limulus polyphemus.* Seminar delivered at the Department of Zoology, University of Florida, Gainesville, Florida, 1980

The mechanism of cell volume regulation: solutes, membrane permeability control and membrane structure. Seminar delivered at the Department of Biology, University of North Carolina, Charlotte, North Carolina, 1981

The mechanism of cell volume regulation: solutes, membrane permeability control and membrane structure. Seminar delivered at C.V. Whitney Marine Laboratory of the University of Florida, St. Augustine, Florida, 1982

Cell volume regulation in response to osmotic stress: mechanisms, solutes and membranes. Seminar delivered at the Department of Biology,
Georgetown University, Washington, D.C., 1982
Invertebrate cell volume control mechanisms: a coordinated use of intracellular amino acids and inorganic ions as osmotic solute. Seminar delivered at the Department of Zoology, University of Maine, Orono, Maine, 1983
Mechanisms of invertebrate cell volume regulation: fast and dirty.
Workshop on "Organic Compounds as Osmotic Effectors in the Central Nervous System", American Society for Neurochemistry, Portland, Oregon, 1984
Cell volume control in response to osmotic stress: coordination of amino acid and ion permeabilities. Seminar delivered at the Division of Biology and Medicine, Brown University, 1984
The cellular basis of salinity tolerance: coordination of amino acid and ion permeabilities. Seminar delivered to the Boston University Marine Program, 1984
The patterns of organic osmolyte accumulation in Elysia chlorotica exposed to hyperosmotic stress: proline betaine and amino acids. Presented to the International Congress of Comparative Physiology of the International Union of Biological Sciences, Liege, Belgium, 1984
The interaction of ionic and organic osmolytes during cell volume regulation: some invertebrate mechanisms. Presented to the International Symposium on Cell Volume Control Processes, Switzerland, 1984
The molecular mechanism of salinity tolerance. Presented to the College of Marine Studies, University of Delaware, Lewes, DE, 1985
The Ca^{2+} sensitive component of hypoosmotic cell volume regulation may be mediated by calmodulin: Modification of an ancient model. Invited lecture presented at the satellite symposium of the IUPS Congress on Membrane Transport and Control: Comparative mechanisms, Banff, Alberta, Canada, 1986.
The effects of Ca^{2+} on cell volume regulation are initiated by the osmotic rather than the ionic portion of the hypoosmotic stress. Invited lecture presented to the symposium on membrane transport of the European Society for Comparative Biochemistry and Physiology, Copenhagen, Denmark, 1987
Ionic and organic osmolyte regulation in cell volume recovery: The role of Ca^{2+} in the process. Invited lecture presented to the symposium on Cell Volume Control Processes at the 2nd International Congress of Comparative Physiology and Biochemistry, Baton Rouge, LA, 1988
Cellular and molecular mechanisms involved in salinity tolerance of marine animals: molluscan red cells and other wonders. Presented to the Department of Biological Science, Florida Atlantic University, 1989.
Cellular and molecular mechanisms involved in salinity tolerance of marine animals: molluscan red cells and other wonders. Presented to the
Department of Biology, Clemson University, 1989.
Department of Zoology, University of Rhode Island, 1989
Department of Physiology, University of Maryland Medical School, 1990
Department of Zoology University of Georgia, 1990
State of Maryland, Department of Natural Resources meeting on zebra mussels, 1992
Virginia Institute of Marine Science, 1992
Invited to present at the NOAA Oyster Disease Conference, Milford, CT, 1993
Invited to present at the National Shellfisheries meeting, Portland, OR 1993
Invited presentation in the Cephalopod Symposium at the annual meeting of the American Malacological Union, Hilo, Hawaii, 1995
Invited presentation at the Second International Congress of Symbiosis, Woods Hole, MA 1997
Invited presentation to the first International Symposium on Cell Swelling, Slovakian Academy of Sciences, Bratislava, Slovakia, 1997
Invited presentation to the Department of Biology Faculty Colloquium Series, University of Maryland, 1999.
Invited seminar to the Department of Biology, University of South Florida, Tampa, Fl. 1999.
Invited presentation to the Symposium on Cell Volume Recovery at the meeting of the Society for Integrative and Comparative Biology, Atlanta, GA, 2000
Invited presentation in the "Monday night at Mote" lecture series at the Mote Marine Laboratory, Sarasota, FL. 2000
Invited presentation to the Department of Biology, Florida Institute of Technology, Melbourne, FL 2000.
Invited presentation to the Office of Naval Research, Washington, DC. 2001
Invited presentation to the International Symbiosis Congress, Halifax 2003
Paper presented at SICB meeting in New Orleans, 2004
Invited presentation at the C. V. Whitney Lab, St. Augustine, FL 2006
Invited presentation at the C. V. Whitney Lab, St. Augustine, FL 2007
Invited presentation to the Department of Biology, New College, Sarasota FL 2007
Invited presentation to the Florida Museum of Discovery and Science, Ft. Lauderdale, FL ,2007 in conjunction with the premier of the National Geographic IMAX movie on Prehistoric Sea Monsters.
Invited speaker at a symposium on Symbiosis at the SE American Microbiological Society Meeting at Auburn University, Auburn AL 2007
Invited presentation to the Department of Biology and Chemistry, Ave Maria University, Naples , FL, 2008
Invited speaker at the molluscan physiology section of the National Shellfisheries Association meeting, Providence, RI, 2008
Paper presented at SICB, San Antonio, TX, 2008
Invited speaker at the International Symbiosis Congress, University of Wisconsin, Madison WI, 2009.
Invited speaker to the Center of Marine Biotechnology, Univ. of Maryland Baltimore, 2011.

4. Editorships

Associate, Editorial Board of *Journal of Experimental Zoology*, 1980-1982
Editor (U.S.) of *Marine Biology*, 1981-1984
Editorial Board of *Biological Bulletin*, 1985-1989
Editorial Board of *American Zoologist*, 1987-1992
Editorial Board of *News in Physiological Science*, 1989-1992
Editorial Board of *Comparative Biochemistry and Physiology*, 1995-2003
Editorial Board of *Symbiosis*, 2011-

5. Areas of personal research


C. Instruction

1. Courses taught at the University of Maryland

   a. Undergraduate

      ZOOL 328 Comparative Physiology
      ZOOL 481 Biology of Marine and Estuarine Invertebrates

   b. Graduate

      ZOOL 621 Comparative Physiology
      ZOOL 608 Physiology Seminar
      ZOOL 608 Scientific Writing
      ZOOL 609 Special Problems in Zoology
      ZOOL 708 Special Topics
      ZOOL 799 Thesis Research
      ZOOL 899 Dissertation Research
1a. Courses taught at the University of South Florida

a. Graduate

Scientific Writing
Lectures in Biology

b. Undergraduate

ZOO 3205C Advanced Invertebrate Zoology
BSC 4990 Symbiosis.
Lectures in Biology

2. Advising and supervision of graduate student research

a. Degrees conferred:

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree and Date Completed</th>
<th>Research Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walter Schwab</td>
<td>Ph.D., 1974</td>
<td>An electrophysiological study of scyphozoan development</td>
</tr>
<tr>
<td>Dennis Murphy</td>
<td>Ph.D., 1976</td>
<td>Physiological aspects of freezing resistance in intertidal bivalves</td>
</tr>
<tr>
<td>Richard Baginski</td>
<td>Ph.D., 1976</td>
<td>High salinity acclimation in intertidal bivalves</td>
</tr>
<tr>
<td>John Watts</td>
<td>Ph.D., 1977</td>
<td>Salinity tolerance of marine bivalves: the role of divalent adenosine triphosphatase activity</td>
</tr>
<tr>
<td>Lynn Amende</td>
<td>Ph.D., 1979</td>
<td>The molecular basis of volume regulation in molluscan blood cells</td>
</tr>
<tr>
<td>Charles Costa</td>
<td>Ph.D., 1981</td>
<td>The mechanism of cell volume regulation in annelid red cell ghosts</td>
</tr>
<tr>
<td>Mary Kim Warren</td>
<td>Ph.D., 1982</td>
<td>Two volume regulatory systems</td>
</tr>
</tbody>
</table>
in the *Limulus* myocardium: an interaction of ions and quaternary ammonium compounds

W. Michael Moran  Ph.D., 1982  The role of glycine influx in cell volume regulation of the rock crab, *Cancer irroratus*

Samuel C. Edwards  Ph.D., 1984  Neurohormonal involvement of octopamine in cell volume regulation in *Limulus polyphemus*

Laurens Smith  Ph.D., 1986  The role of the cytoskeleton in cell volume regulation by invertebrate cells

Alexander Politis  Ph.D., 1988  The mechanism of cell volume recovery: Ca²⁺ influx, calmodulin activation and protein phosphorylation

Richard Quinn  Ph.D., 1988  The basis of membrane depolarization during hypoosmotic stress in neurons

Julia Dragolovich  Ph.D., 1991  The role of glycine betaine in high salinity adaptation of *Limulus*

Lisa Perrino  Ph.D., 1998  The role of enzyme kinetics in the regulation of glycine betaine synthesis in oysters: differences between Chesapeake Bay and Atlantic conspecifics

Carol Bartberger  M.S., 1973  Effects of salinity on nitrogen excretion rates of intertidal bivalves

James Otto  M.S., 1979  A physiological evaluation of the horohalinicum
Linda Beres M.S., 1980 The effects of salinity stress on the electrical properties of neurons in the euryhaline bivalve, Mya arenaria

H T Parker M.S., 1983 Acclimation of Elysia chlorotica to low salinity: effects on the electrical properties of identifiable neurons

Laura Rowland M.S., 1983 Volume regulation during low salinity acclimation in Elysia chlorotica: utilization of quaternary ammonium compounds

Susan Cooperstein M.S., 1993 (Co-advisor with T. Chen) Molecular cloning and preliminary characterization of the cDNA for the hsp-70-like gene from Crassostrea gigas

Kellie Austin M. S. 1994 (Co-advisor with K. Paynter) Characterization of chemiluminescence produced by hemocytes of the Eastern oyster, Crassostrea virginica

Rachel Biron M. S. 1995 Protein synthesis occurs in symbiotic chloroplasts in residence in the cytoplasm of molluscan cells

Jeffery Hanten M. S. 2001 Identification of plastid proteins encoded in sea slug DNA

William Mondy M. S. 2001 The annual end of a sea slug population’s life cycle is the result of apoptosis

Elizabeth Gold M.S., 1972 (nonthesis)
Walter Schwab M.S., 1973 (nonthesis)
Lynn Amende  M.S., 1976 (nonthesis)  
Paul Hubbard  M.S., 1992 (nonthesis)  

University of South Florida  
Nicholas Curtis  Ph.D. 2007  

b. Current graduate students:  

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree Sought</th>
<th>(Date Expected)</th>
<th>Research Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Julie Schwartz</td>
<td>Ph. D.</td>
<td>2013</td>
<td></td>
</tr>
</tbody>
</table>

D. Service  

I. Memberships and officerships in professional organizations  

Tallahassee, Sopchoppy and Gulf Coast Marine Biological Association, member, Board of Directors and Honorary Advisory Council  
President of Assateague, Chincoteague and Chesapeake Bay Branch of the TS&GCMBA  
Corporation of the Marine Biological Laboratory, Woods Hole, Massachusetts  
Fellow of the American Association for the Advancement of Science  
American Physiological Society  
American Society of Zoologists  
Chairman of Nominating Committee of Division of Comparative Physiology and Biochemistry (A.S.Z.), 1978  
Principal Organizer of a Symposium on Cell Volume Regulation for the 1979 Tampa Meeting of the American Society of Zoologists  
Principal Organizer of a Symposium on Cell Volume Regulation for the 1992 International Congress of Comparative Biochemistry and Physiology held at Cambridge University, UK  
ASZ representative to three AAAS committees 1994-1997  

International Committees  

Representative of Division of Comparative Physiology and Biochemistry (A.S.Z.) to the IUPS Program Committee of the National Research Council, 1984-91  
Secretary IUPS Program Committee, 1986-91  
Board of the Comparative Physiology Section of IUBS, 1984-91  

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Travel Award Program (including fundraising) for the American portion of the IUBS Congress in Tokyo, Japan, 1990
Travel Award Program (including fundraising) for the International Congress of Comparative Biochemistry and Physiology in Cambridge, UK, 1992

2. University of Maryland  (The following list is only approximate, I gave up keeping careful track in 1980)

a. Department of Biology (formerly Zoology)

Graduate Committee, 1970-71
Colloquium Committee, 1970-71
Ecology Recruitment Committee, 1970-71
Physiology and Neurophysiology Recruitment Committee, 1970-71
Introductory Zoology Recruitment Committee, 1970-71
Program in Estuarine Zoology, 1970-72; Chairman, 1971-72
Dedication Ceremony (new building), 1970-72
Advisory Committee, 1971-72
Ecology Estuarine Zoology Recruitment Committee, Co-Chairman, 1971-72
Five-Year Review (Graduate Program), 1971-74
Physiology Recruitment Committee, 1971-74
Stockroom Committee, Chairman, 1973-74
Chairman of Darkroom Facilities, 1973-78, 1980-83
Graduate Student Application and Review Committee, 1971-78
Core Curriculum Committee, 1977-78
Chesapeake Bay Research Fund Review Committee, Chairman, 1972-
Graduate Policy Committee, Chairman, 1979-85
Physiology Recruitment Committee, Chairman, 1981-83
Advisory Committee, 1985-87
Zoology Chairman Search Committee, 1986
Physiology and Molecular Biology Search Committee, Chairman, 1987
Department 5-year Review Committee, Chairman 1989-92
Graduate Policy Committee, Chairman 1989-
Molecular Geneticist Search Committee, 1991

b. Colleges of Agriculture and Life Sciences

Division Council, 1973-74
Chemistry Department Administrative Review Committee, 1975-76
Chemistry Department Chairman Recruitment Committee, 1975-76
Division Promotions and Tenure Committee, 1979, 1981
Chemistry Department Review Committee, 1986
Cellular and Molecular Biology Graduate Program Committee, 1986-88
Agriculture and Life Science Coordinating Council, 1986-88
Division Promotions and Tenure Committee, Chairman, 1986-1987
College Coordinating Committee, 1987
APAC, Jr., 1990-92
College Promotions and Tenure Committee, Chairman, 1992

c. College Park Campus

Academic Standards Committee of the Graduate Council, 1978-81
Marine, Estuarine and Environmental Studies Faculty Committee, 1978-81
Research Committee of the Graduate Council, 1982-85
General Research Board, 1986-87
Campus Senate Committee on Research, 1987-88
Large Animal Care and Use Committee, 1987-89
Campus Appeals Committee, 1990-91
Animal Care and Use Committee, 1991-1994
Graduate Council, 1992-1995
Campus Senate, 1995-1997

3. University of South Florida (only major committees recorded-I gave up keeping track in 2006)

College of Arts and Sciences Chair’s Steering Committee, 2001- 2004
Vice President for Research Search Committee, 2002
Implementation of FAST Accounting System Committee 2002-2003
President's ad hoc Chair's Advisory Committee 2002-
Ad hoc committee to restructure the senate-2004
Ad hoc class scheduling committee-2004
Ad hoc committee on SCH calculations
Provost's advisory committee 2004
CAS Dean's search committee 2004
FAST faculty input group 2003-2004
Faculty Senate 2005-2011
Construction Manager for Minor Projects Approval
JASON R. ROHR

University of South Florida
Department of Integrative Biology
SCA 110
4202 East Fowler Ave.
Tampa, FL 33620

Telephone: (813) 974-0156
Fax: (813) 974-3263
E-mail: jasonrohr@gmail.com
Website: http://shell.cas.usf.edu/rohrlab/index.html

RESEARCH INTERESTS
Ecology, climate science, disease ecology, conservation, ecotoxicology

EDUCATION
2002 Ph.D., Ecology & Behavior - Binghamton University, Advisor: Dale Madison
1997 M.A. Teaching Biology - Binghamton University
1996 B.A. Biology & Environmental Studies (double major) - Binghamton University

RELEVANT POSITIONS HELD
2011- ASSOCIATE PROFESSOR, UNIVERSITY OF SOUTH FLORIDA
AFFILIATIONS: DEPARTMENT OF INTEGRATIVE BIOLOGY (2007-), PATEL
SCHOOL OF GLOBAL SUSTAINABILITY (2011-), OFFICE OF
SUSTAINABILITY (2011-)
• Conduct ecological and environmental research, teach parasitology
  lecture and lab and graduate-level introductory and advanced biological
  statistics

2007-2011 ASSISTANT PROFESSOR, UNIVERSITY OF SOUTH FLORIDA
AFFILIATIONS: DEPARTMENT OF INTEGRATIVE BIOLOGY (2007-), PATEL
SCHOOL OF GLOBAL SUSTAINABILITY (2011-), OFFICE OF
SUSTAINABILITY (2011-)
• Conduct ecological and environmental research, teach parasitology
  lecture and lab and graduate-level introductory and advanced biological
  statistics

2004-2007 RESEARCH ASSOCIATE, PENN STATE UNIVERSITY,
COLLABORATORS/ADVISORS: PETER HUDSON & KE CHUNG KIM
AFFILIATIONS: CENTER FOR INFECTIOUS DISEASE DYNAMICS, PENN
STATE INSTITUTES OF THE ENVIRONMENT, DEPARTMENT OF
ENTOMOLOGY, CENTER FOR BIODIVERSITY RESEARCH
• Investigated interactions among biodiversity, parasites, and
  anthropogenic change

2006 INSTRUCTOR, ECOLOGY 597B – ADVANCES IN ECOLOGY, PENN STATE
UNIVERSITY
• Co-taught a course addressing advances in ecology. My lectures
  emphasized advances in biodiversity and multivariate statistics
2006  INSTRUCTOR, ENTOMOLOGY 497E – INSECT FIELD ECOLOGY AND NATURAL HISTORY, PENN STATE UNIVERSITY
   • Co-taught an experiential field ecology course that highlighted insect dynamics, diversity, and adaptations

2005  INSTRUCTOR, ENTOMOLOGY 595E – INSECT NATURAL HISTORY, PENN STATE UNIVERSITY
   • Co-taught graduate-level field course on insect collection, identification, and biodiversity analyses

2002-2004  POST-DOCTORAL RESEARCH ASSOCIATE, UNIVERSITY OF KENTUCKY, ADVISORS: PHILIP CROWLEY AND ANDY SIH
   • Investigated the effects of pesticides on freshwater biodiversity

2001  INSTRUCTOR, BIOL. 366 - ECOLOGICAL AND BEHAVIORAL LABORATORY AND FIELD METHODS, BINGHAMTON UNIVERSITY
   • Designed and instructed a course to educate 16 undergraduates on the processes of ecological and behavioral research

1994-1995  INTERN, MONROE COUNTY ENVIRONMENTAL MANAGEMENT COUNCIL
   • Researched environmental topics and wrote numerous publications used by the Monroe County Legislature (listed below)

PEER-REVIEWED CONTRIBUTIONS TO RESEARCH
(§UNDERGRADUATE STUDENT, †GRADUATE STUDENT, ‡POSTDOC)

IN PRINT OR PRESS:


Co-authored Technical Reports:

Monroe County Environmental Management Council, 1997. The use of road deicing salt on state roads in Monroe County, Monroe County, NY
Monroe County Environmental Management Council, 1996. Preservation of environmentally sensitive areas in Monroe County, Monroe County, NY
Monroe County Environmental Management Council, 1995. Survey of waste hauler practices in Monroe County, Monroe County, NY

Submitted (pre-prints available upon request):


Raffel, T.R †, Romansic, J.M. †, Halstead, N.T., McMahon, T.A.*, Venesky, M.D. †, Rohr, J.R. Disease and thermal acclimation in a more variable and unpredictable climate. *Nature Climate Change*


Rohr, J.R., Palmer, B.D. Evidence that climatic shifts within the non-critical range can cause species declines: Interactions among moisture, temperature, and an herbicide. *Global Change Biology*

Venesky, M.D. †, Sauer, E. §, Rohr, J.R. Complex associations among diversity, density, and Batrachochytrium dendrobatidis infections in tadpoles. *Ecology Letters*


Hickey, C.W., Brasfield, S., Fritz, A., Helm, R., Johnson, P., Rohr, J.R. Environmental hazardous substances and global climate change: Implications for natural resource damage assessment, restoration, and rehabilitation. *Environmental Toxicology and Chemistry*


Crumrine, P.W., Miller, A.D. §, Rohr, J.R. Impacts of larval odonates and pesticides on the survival of Echinostoma trivolvis cercariae. *Journal of Parasitology*

McMahon, T.A.*, Bavis, R.W., Rohr, J.R. Acidic water causes abnormalities and mortality in the neotropical frog species Epipedobates tricolor (Anura: Dendrobatidae). *Amphibia Reptilia*
In Preparation:


**GRANTS AND FELLOWSHIPS**

**Awarded:**

$374,938  “EARLY CAREER: The hazards of extreme climatic events: Predicting impacts on water quality, US EPA (PI: Jason R. Rohr) TBA, received a call from the program officer that it was funded, awaiting official written documentation.

$241,000  USDA National Needs Graduate Program Proposal: Training the next generation of under-represented and cross-disciplinary scholars at the frontiers of agricultural sustainability and biosecurity, USDA (PI: Jason R. Rohr, Co-PIs: Steven Johnson, Valeria Harwood, Henry Mushinsky) 1/2012-12/2017.


$398,946  Predicting the effects of agricultural practices on waterborne human pathogens, livestock helminthes, and the health of rural water-bodies, USDA (PIs: Jason R. Rohr, Valerie Harwood) 12/2008-11/2012.


$ 1,000  The impacts of disease on Kentucky’s declining amphibians, Kentucky Academy of Science Athey Grant, 2004-2005 (PI: Jason R. Rohr, Co-PI: Tim Sesterhenn)

$ 9,600  Dissertation Fellowship for the 2001-2002 academic year

$ 2,000  Binghamton University Summer Research Grant, 2000

$ 1,350  Sum of five travel grants, 2000-2002

Pending (in review or to be resubmitted):


PRESENTATIONS

Invited Talks and Seminars (Rohr was presenter unless noted):

2011  Society for Environmental Toxicology and Chemistry Meeting, Boston, Platform Session “Fungicides: Occurrence, Environmental Fate, and Toxicity”
Society for Environmental Toxicology and Chemistry Meeting, Boston, Platform Session “Amphibian and Reptile Ecotoxicology: Interactions Among Contaminants and Other Stressors”
University of South Florida, Environmental Research Interdisciplinary Symposium Virginia Tech University, Ecology and Evolutionary Biology Seminar Series
MI H2Objective Conference: Research Shaping Michigan’s Water Future, Michigan’s University Research Corridor Symposium Series, Detroit, MI
STAR Grant Progress Review Meeting, Washington, D.C.
Society for Environmental Toxicology and Chemistry sponsored Pellston Workshop on the “Influence of Global Climate Change On the Scientific Foundation and Application of Environmental Toxicology and Chemistry”, Racine, WI
Tulane University, Department of Ecology and Evolutionary Biology
University of South Florida, College of Public Health, Global Health Seminar Series
USDA Water and Watershed & Agricultural Water Science Program Project Directors
Meeting, Washington, DC, presented by graduate student

2010
Illinois State University, School of Biological Sciences
University of Colorado, Department of Ecology and Evolutionary Biology (graduate student selection as invited speaker for the Fall semester)
Ecological Society of America National Meeting, Pittsburgh, PA, Symposium:
Towards a General Theory for How Climate Change will affect Infectious Disease (gave intro. and moderated discussion)
Ecological Society of America National Meeting, Pittsburgh, PA, Symposium:
Towards a General Theory for How Climate Change will affect Infectious Disease (postdoc gave talk)
American Society of Parasitologists National Meeting, Colorado Springs, CO, Symposium: Causes and Consequences of Helminth Infections in Amphibians
University of Florida, Gulf Coast Research and Education Center
National Synthesis Workshop: Pathogens (Bacteria, Viruses and Protozoa) in Rural and Agricultural Water and Watersheds (Ithaca, NY, postdoc presented)
Vanderbilt University, Department of Microbiology and Immunology
Belmont University, Department of Biology
USDA-NIFA Water and Watershed Annual Awardee Meeting (Hilton Head, SC; co-PI presented)

2009
Penn State University, School of Forest Resources
American Society of Agronomy – Crop Science Society of America – Soil Science Society of America Joint International Meeting (Pittsburgh, PA), USDA-CSREES-NRI Managed Ecosystems Annual Awardee Meeting
University of Central Florida, Department of Biology
Society for Conservation Biology Meeting (Flagstaff, AZ), Organized Symposium:
"Infectious Disease and Conservation in North America"
Ecological Society of America Meeting (Albuquerque, NM), Organized Oral Session:
"Climate Change Science in Conservation Planning"
US EPA National Meeting on the "Plight of Ecosystems in a Changing Climate: Impacts on Services, Interactions, and Responses" (Seattle, WA)
Archbold Biological Station (Lake Placid, FL)
Emporia State University (Emporia, KS), Department of Biological Sciences (graduate student selection as invited speaker for the Spring semester)

2008
Joint Meeting of Ichthyologists and Herpetologists (Montreal, Canada), Organized Symposium: "Biodiversity and agricultural sustainability in North America"
Southeast Partners in Amphibian and Reptile Conservation Annual Meeting (Athens, GA)

2007
Ecological Society of America Meeting (San Jose, CA), Organized Oral Session:
"Disease emergence and amphibian decline: using ecology to understand patterns and promote restoration" (co-author presented)
Smithsonian Environmental Research Center
Oklahoma State University, Department of Zoology
University of South Florida, Department of Biology
USGS- and EPA-sponsored International Meeting: Understanding agriculture’s effects on amphibians and reptiles in a changing world (St. Louis, MO).
Indiana University, School of Public and Environmental Affairs

2006
University of California at Davis, joint seminar: Wildlife, Fish and Conservation Biology Department and Environmental Science and Policy Department
International Conference on the Ecology and Evolution of Infectious Diseases (State College, PA), invited to moderate and give a 10 min. synthesis of the organized session entitled “Parasites in field systems”
Penn State University, Department of Entomology
Fordham University, Biology Department
Indiana University, joint seminar: Department of Biology and School of Public and Environmental Affairs
International Conference on Mycorrhiza, Granada, Spain, (given by collaborator)
Mid-Atlantic Mosquito Control Association Meeting, Harrisburg, PA

2005
University of California at Davis, Environmental Science and Policy Department
Duquesne University, Department of Biological Sciences
Center for Infectious Disease Dynamics, State College, PA
Pennsylvania Invertebrate Biodiversity Project Meeting, State College, PA
Penn State University, Intercollege Program in Ecology
University of Virginia, Blandy Experimental Farm
NIH-sponsored National Meeting: Atrazine and the health of humans and wildlife:
State of the science and future research needs, Iowa City, IA

2004
Penn State University, Department of Entomology

2003
Binghamton University, Department of Biological Sciences
University of California at Davis, Environmental Science and Policy Department
University of Kentucky, Department of Biology

2001
University of Kentucky, Department of Biology

Presentations at National and International Meetings
(Rohr was presenter unless noted):

2011
Society for Environmental Toxicology and Chemistry, Boston, MA (1 talk)
Ecological Society of America Meeting, Austin, TX (5 talks, 1 given by me, 3 by PhD students, and 1 by my colleague)
Declining Amphibian Populations Task Force California/Nevada Working Group Meeting, Yosemite National Park, CA (former postdoc gave talk)
Society for Integrative and Comparative Biology, Salt Lake City, UT (poster given by colleague)

2010
Entomological Society of America, San Diego, CA (talk given by grad. student)
American Society for Microbiology, San Diego, CA (talk given by grad. student)
International Symposium on Aquatic Animal Health, Tampa, FL (poster given by grad. student)
Ecological Society of America, Pittsburgh, PA (postdoc gave two posters)
American Society of Parasitologists Meeting, Colorado Springs, CO (poster given by grad. student)
American Society for Microbiology, San Diego, CA (talk given by grad. student)
2009  Ecological Society of America Meeting, Albuquerque, NM, (two talks given by my postdocs and a poster given by my grad. student)
American Ornithologist Union (a talk and a poster given by colleagues)
Society for Integrative and Comparative Biology, Boston, MA (talk given by my grad. student)

2008  Society for Environmental Toxicology and Chemistry, Tampa, FL (two talks)
Ecological Society of America meeting, Milwaukee, WI (three talks, none were presented by Rohr)
Annual USDA Managed Ecosystems Project Director meeting, Madison, WI (poster)

2007  International Meeting on Amphibian Declines & Chytridiomycosis: Translating Science into Urgent Action, Tempe, AZ (poster given by my postdoc)
Meeting of the Entomological Society of America, San Diego, CA. (two talks given by collaborators)
Annual Penn State-Cornell Mini-symposium in Chemical Ecology, State College, PA. (given by collaborator)
USGS- and EPA-sponsored International Meeting: Understanding agriculture’s effects on amphibians and reptiles in a changing world, St. Louis, MO (poster)

2006  Ecological Society of America meeting, Memphis, TN (three total, one first authored)
International Conference on the Ecology and Evolution of Infectious Diseases, State College, PA (poster)

2005  Ecological Society of America Meeting, Montreal, Canada
Entomological Society of America meeting, Ft. Lauderdale, FL (given by collaborator)

2004  Entomological Society of America meeting, Salt Lake City, UT. (given by collaborator)

2003  Society of Environmental Toxicology and Chemistry meeting, Austin, TX
Society of Environmental Toxicology and Chemistry meeting, Austin, TX
Entomological Society of America meeting, Cincinnati, OH. (given by collaborator)
Ecological Society of America meeting, Savannah, GA
Animal Behaviour Society meeting, Bloomington, IN

2001  Animal Behaviour Society meeting, Corvallis, OR
Society for the Study of Amphibians and Reptiles meeting, Indianapolis, IN

2000  Ninth International Symposium on Chemical Signals in Vertebrates, Kraków, Poland (given by PhD advisor)

ADVISING AND TRAINING

Postdoctoral Advisees:

Dr. Matthew Venesky: 2011 – Present (PhD from University of Memphis)
Dr. Thomas Raffel: 2006 – 2011 (PhD from Penn State University, presently a visiting faculty member at Dickinson College)
Dr. Krista McCoy: 2009 – 2010 (PhD from University of Florida, presently a postdoc at the University of Florida)
Dr. Mike McCoy: 2009 – 2010 (PhD from University of Florida, presently a postdoc at the University of Florida)
Dr. John Romansic: 2007 – 2009 (PhD from Oregon State University, presently working for the USGS)
Dr. Denise Piechnik: 2007 – 2009 (co-advised with Ke Chung Kim; PhD from UC Davis, presently a postdoc at Penn State University)
Dr. Jason Hoverman: 2007 (PhD from University of Pittsburgh, presently a postdoc at the University of Colorado)

**Graduate Advisees:**

David Jennings, graduated Fall 2011 (postdoc at the University of Maryland)
Jeremy Cohen (PhD candidate)
Jenise Brown (PhD candidate)
Christina (Nicole) Ortega (MS candidate)
Neal Halstead (PhD candidate)
Brittany Sears (PhD candidate, University of South Florida Presidential Fellow)
Taegan McMahon (PhD candidate)
Zach Staley (PhD candidate; co-advised with Dr. Valerie Harwood)

**Technicians:**

Monica McGarrity 2011
Kristen Parker 2011-2012
Neal Halstead 2007 – 2011 (Masters from University of South Florida)

**Undergraduate Advisees:**

Trained and supervised over 80 undergraduate research assistants

**Undergraduate Honors Theses**

Callyn Hall (2009)
Andrea Schlunk (2009)
Natassia Watson (2011) African American female
Veronique Etienne (2011) Hatian female
Staci Reed (in progress)
Joseph Simon (in progress)

**Graduate Committees:**

Loren Byrne. Penn State University. ad hoc member, PhD received in Aug. 2006, Assistant Professor at Roger Williams University, RI
Timothy Leslie. Penn State University. ad hoc member, PhD received in Dec. 2007, Lecturer at Long Island University, NY
Lance Arvidson, University of South Florida, MS received 2008
Joshua Kuhlman, University of South Florida, MS received May 2010
Anna Deyle, University of South Florida, MS candidate
Heather Jezorek, University of South Florida, PhD candidate
Keith Stokes, University of South Florida, PhD candidate
Andrea Liebl, University of South Florida, PhD candidate
Courtney Coon, University of South Florida, PhD candidate
Samantha Mulvany, University of South Florida, PhD candidate
Paul Thurman, University of South Florida, PhD candidate
Chris Staley, University of South Florida, PhD candidate
Chris Haggerty, University of South Florida, PhD candidate
Lauren Vanmaurik, University of South Florida, MS candidate
Danielle Noaker, University of South Florida, MS candidate
Martyna Boruta, University of South Florida, PhD candidate
Amber Brace, University of South Florida, PhD candidate

AWARDS/HONORS

- University of South Florida Outstanding Research Achievement Award 2009
- Featured articles in Nature (top-ranked general science journal), Trends in Ecology and Evolution (number one ranked journal in ecology), Environmental Health Perspectives (ranks 2cd among 132 environmental sciences journals), and New Phytologist
- Featured research in textbooks: Ecology 2cd edition by Cain, Bowman, and Hacker
  - Two of my papers featured on pages 6 and 7 of the text
- Binghamton University Graduate Award for Excellence in Research, 2002
- Planned and implemented a free diversity conference for students, faculty, and staff, Binghamton Univ., 2000
- Broome County Earth Star Award, Binghamton, NY, 1996

RESEARCH SKILLS/KNOWLEDGE

Proficient at both laboratory and field experimental design, and numerous statistical analyses, such as parametric, nonparametric, multivariate, and power analyses; general and generalized statistical models, null model analyses, permutation tests, information-theoretic model selection, ordination techniques, path analysis and structural equation modeling

SCHOLARLY SERVICE

- Review Editor for Ecohealth (2010-Present)
- Ad hoc referee for NSF grants (19)
- Served as chair of the Integrative Biology Seminar Committee (4 semesters, 2008-2010, member from 2011-)
- Member of University IACUC committee (2010-)
- Member if University Grievance Committee (2010-)
- Served on the University of South Florida’s Internal Grant Review Panel for Environmental Science submissions, 2008
- Reviewed manuscripts for the following journals (number in parentheses indicates number of times I have reviewed):

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- Conducted tours of Binghamton University’s Nature Preserve, 1995-2002
- Designed, built, and tracked the development of a wetland, Binghamton, NY, 1993-2002
- Planned and implemented a free ethnic, sexual and cultural diversity conference for students, faculty, and staff, Binghamton Univ., 2000
- Coordinated regional and campus activities for Earth Week, Binghamton Univ., 1996
- Director of the Environmental Awareness Module, Binghamton Univ., 1995-1996

**PROFESSIONAL AFFILIATIONS** (past and present)
Society for Environmental Toxicology and Chemistry, Society for Conservation Biology, Ecological Society of America, Animal Behavior Society, Sigma Xi, Society for the Study of Amphibians and Reptiles, National Association of Biology Teachers

**SELECTED MEDIA COVERAGE**
Research mentioned in “Downwind: Big Ag at Your Door” by Clare Howard
- [http://100r.org/2012/02/downwind/](http://100r.org/2012/02/downwind/)
- Quoted in “Frog Wars” 2012 by Dashka Slater, Mother Jones Magazine, Jan. + Feb. issue, p 44-49

McMahon et al. 2011 Environmental Health Perspectives Effects of the fungicide chlorothalonil on amphibians
- [http://news.usf.edu/article/templates/?z=134&a=3313](http://news.usf.edu/article/templates/?z=134&a=3313)
- http://www.beyondpesticides.org/dailynewsblog/?p=5197
- http://www.sciencenews.org/view/feature/id/62649/title/In_field_or_backyard,_frogs_face_thre
- http://www.tboblogs.com/index.php/life/comments/usf-biologists-show-a-common-fungicide-
- http://www.beyondpesticides.org/dailynewsblog/?p=5197
- http://www.sciencenews.org/view/feature/id/62649/title/In_field_or_backyard,_frogs_face_thre

Jennings and Rohr 2011 Biological Conservation Review of the conservation threats to carnivorous plants
- http://breakingnews24hrs.net/science/the-future-of-the-overzealous-collectors-threatened-by-
- ooglea.com/carnivorous-plants-future-threatened-by-overzealous-collectors- and-loss-of-
- blogs.smithsonianmag.com/.../back-away-from-the-carnivorous-plant/

Comment on a study examining maternal and environmental effects of mercury exposure on amphibians

Controversy and atrazine

Searching for potentially extinct amphibians
- National Geographic:

Jennings et al. 2010 Proceedings of the Royal Society of London B Carnivorous plants and spiders
- msnbc.com: http://www.msnbc.msn.com/id/38991313/ns/technology_and_science-science/
- Live Science:
  s&l=on&pic=spider-on-sundew-anderson-100903-02.jpg&cap=The+carnivorous+sundew+and+the+wol
  spider+eat+the+same+prey+in+the+wild.+Credit%3A+Christopher+V.+Anderson%2C+University+of+S
 outh+Florida.&title=
- USF: http://usfweb3.usf.edu/absolutenm/templates/?a=2313&z=113
Plants and spiders compete for the same food supply

http://www.ukwirednews.com/articles.php/58885

Rohr and McCoy 2010 Conservation Letters
enge_Who%E2%80%99s_responsible_for_accuracy%3F
University of South Florida: http://usfweb3.usf.edu/absolutenm/templates/?a=2303&z=113
http://www.panna.org/resources/panups/panup_20100514
World News: http://article.wn.com/view/2010/05/06/Conflicts_of_Interest_Affect_Conservation_Science/
http://www.openyoureyesnews.com/2010/05/07/conflicts-of-interest-affect-conservation-science/

Rohr and Raffel 2010 Proceedings of the National Academy of Sciences of the United States of America
University of South Florida: http://usfweb3.usf.edu/absolutenm/templates/?a=2255&z=113
Florida Board of Governors: http://www.flbog.org/pressroom/newsclips_detail.php?id=8482
WALO radio show in Puerto Rico (4/28/2010)
Environmental Research Web: http://environmentalresearchweb.org/cws/article/news/42483
http://www.democraticunderground.com/discuss/duboard.php?az=view_all&address=115x243049
http://www.outlookseries.com/N7/Science/3983_Thomas_Raffel_USF_El_Nino_Temperature_Variability_Amphibian_Declines_Thomas_Raffel_Jason_Rohr.htm

The herbicide atrazine and policy
“To Ban or Not to Ban: A Review of Atrazine from Both Sides of the Atlantic” Web-transmitted Partnership Call sponsored by The Collaborative on Health and the Environment, http://www.healthandenvironment.org/partnership_calls/6784

Rohr and McCoy 2010 Environmental Health Perspectives
Front page of Local and State section of the St. Petersburg Times
National Public Radio WGCU Gulf Coast Live Radio show 10/5/2009
http://usfweb3.usf.edu/absolutenm/templates/?a=1732&z=31
http://news.science360.gov/
http://www2.tbo.com/content/2009/oct/01/usf-study-says-popular-weed-killer-can-harm-amphib/news-breaking/

University of South Florida Magazine January 2009: http://shell.cas.usf.edu/rohrlab/data/usf-mag-winter-09-Rohr-amphibians.pdf

Amphibians and Climate
http://www.scientificamerican.com/article.cfm?id=frog-killing-chytrid-fungus-climate-fluctuations&SID=mail&sc=emailfriend

Rohr et al. 2008 Proceedings of the National Academy of Sciences of the United States of America
In the Journals on NPR:
University of South Florida: http://usfweb3.usf.edu/absolutemṃ/templets/?a=918&z=31
E! Science News:
http://esciencenews.com/articles/2008/11/12/global.warming.link.amphibian.declines.doubt

Rohr et al. 2008 Nature
Nature podcast (12 minutes 40 seconds in): http://www.nature.com/nature/podcast/
Science Magazine: http://sciencenow.scientificmag.org/cgi/content/full/2008/1029/2
Nation Science Foundation:
Science News: http://www.sciencenews.org/view/generic/id/38161/title/Farm_chemicals_can_indirectly_hammer_frogs_
Scientific American: http://www.sciam.com/article.cfm?id=world-without-frogs
RSC Chemistry World: http://www.rsc.org/chemistryworld/News/2008/October/29100802.asp
Biological Research Information Center:
http://bric.postech.ac.kr/iotrend/science/science_view.php?nNum=141300&nPageNum=1&nType_id=3&szSearchKey=

Rohr et al. 2006 Environmental Health Perspectives
The Scientist "Climate change and frog deaths":http://www.the-scientist.com/2008/01/1/53/1/
- ECT News Network: http://www.ectnews.com/perl/webstory/?id=2898430
KATHLEEN M. SCOTT, Ph.D.

Associate Professor
Department of Biology
University of South Florida
4202 E. Fowler Avenue, SCA 110
Tampa, Florida 33620

813/974-5173
fax: 813/974-3263
kmscott@usf.edu

Degrees

Thesis
Ph.D. Inorganic carbon use by hydrothermal vent sulfur chemoautotrophic bacteria.

Research Interests
• Physiological ecology of chemolithoautotrophs.
• Marine and freshwater biogeochemistry.

Honors
• University of South Florida (USF) Outstanding Undergraduate Teaching Award, 2007.
• USF Research Rising Star, 2005.
• Innovative Teaching Award, USF, 2004.
• Braddock Fellowship, Department of Biology, Pennsylvania State University. 1992 - 1995.

Professional Experience
• Associate Professor, University of South Florida, August 2009-present.
• Assistant Professor, University of South Florida, August 2003-present.
• Research Assistant, Harvard University, July 2000 - July 2003.
  Co-Principal Investigator: Dr. Colleen Cavanaugh.
  Co-Principal Investigator: Dr. Colleen Cavanaugh.
  Thesis Advisor: Dr. Charles Fisher.
• Undergraduate Research Fellow, Woods Hole Oceanographic Institute, Summer 1990.
  Project Advisor: Dr. Paul Dunlap.
• Undergraduate Researcher, University of Michigan, Fall 1988 - Spring 1992.
  Project Advisor: Dr. Harry Douthit.
Publications

- Mangiapia M., Scott K.M. (2012). Costs to build a cell from CO$_2$ using the Calvin-Benson-Bassham versus reductive citric acid cycles as predicted from genome-enabled metabolic maps. In prep.


**Grant Proposals Funded**

• USDA Cooperative State Research and Extension Service: US Department of Agriculture Higher Education Challenge Grants Program. 2008-2010. $73,400. “Searching the deep sea for clues to enhance agricultural carbon fixation: An undergraduate research program to isolate, characterize, and sequence novel autotrophs”.

• JGI/DOE Community Sequencing Program. 9 genome sequences. “Thiomicrospiras: Ubiquitous sulfur-oxidizing autotrophs from an undersampled lineage of Gammaproteobacteria”.


• USF New Researcher Grant. 2004-2005. $8,735. “Genes of a hydrothermal vent bacterium induced by low concentrations of carbon dioxide: Adaptations to the Proterozoic-to-Phanerozoic CO2 crisis”.

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• USF Innovative Teaching Grant. 2004. $5,000. “Making the genomic era a cornucopia for undergraduate biology education”.
• Microbial Genome Program, Department of Energy. 2003-2004. Draft-level genome sequence of *Thiomicospira crunogena* and *Thiomicospira denitrificans*. Co-written with Stefan Sievert. “Nomination of *Thiomicospira crunogena* and *Thiomicospira denitrificans* for genome sequencing by the Department of Energy”.

**Grant Proposals Pending**

• Biological Oceanography, National Science Foundation. 2013-2016. $364,417. “In vivo and in vitro carbon isotope fractionation by RubisCO from cosmopolitan bloom-forming coccolithophore *Emiliania huxleyi*”. Includes 2 months of summer support for K. Scott for all three years.
• Integrative Organismal Systems, National Science Foundation. Co-written with Peter Girguis. “IOS preliminary proposal: Collaborative Research: Environmental and internal influences on the relative activities of the Calvin-Benson-Bassham and reductive citric acid cycles”.

**Invited Presentations**

• “Role of Carbonic Anhydrase in a Chemolithoautotroph”. Summer 2010, University of Florida.
• “Isotope Discrimination by Marine RubisCO Enzymes”. Fall 2009, California Institute of Technology.
• “Genomics Curriculum Development”. Fall 2007, Department of Energy-Joint Genome Institute Undergraduate Research Program in Microbial Genome Annotation Workshop.
• “Marine Microbial Carbon Fixation”. Fall 2007, University of Southern Mississippi Bennett Symposium.
• “Adaptations for chemolithoautotrophy at deep-sea vents apparent from the genome of Thiomicrospira crunogena”. Summer 2006, Munster, Germany. International Society for Microbial Sulfur Metabolism.
• “The completed genome of Tms. crunogena: A system optimized for autotrophy at the deep-sea hydrothermal vents”. Spring 2006. ASM General Meeting.
• "Different choices for different lifestyles: Inorganic carbon uptake by chemoautotrophic bacteria from hydrothermal vents and elsewhere". Fall, 2003. University of Southern Mississippi.
• "Carbon fixation by chemoautotrophic bacteria from deep-sea hydrothermal vents and elsewhere". Spring, 2003. The University of South Florida.
• "Carbon dioxide uptake and fixation by chemoautotrophic bacteria from hydrothermal vents and elsewhere". Spring, 2002. Woods Hole Oceanographic Institution.
• "Strangers in the night, exchanging gases: What $\delta^{13}$C values tell us about gas exchange in chemoautotrophic symbioses". Winter, 2002. Clark University.
• "Stable carbon isotope values of organisms at deep-sea vents". Winter, 2000. San Francisco State University.
• "Carbon fixation by symbiotic and free-living hydrothermal vent chemoautotrophs". Fall, 1999. Harvard University.
• "Inorganic carbon use at in situ pressure by the endosymbionts of the deep sea hydrothermal vent tubeworm, Riftia pachyptila." Spring, 1996. Eberly College of Science Graduate Honors Seminar.

Symposia Chaired
Conference Presentations


Research Cruise Participation


• 1999: August 23 - September 6, Endeavor Segment, Juan de Fuca Ridge
        April 15 - May 5, Clipperton Transform Fault, East Pacific Rise

• 1998: July 29 - August 9, Endeavor Segment, Juan de Fuca Ridge

• 1997: July 9 - 18, Louisiana Slope, Gulf of Mexico
        September 6 - 27, Endeavor Segment, Juan de Fuca Ridge
• 1996: February 9 - March 27, Clipperton Transform Fault, East Pacific Rise
  October 12 - 20, Endeavor Segment, Juan de Fuca Ridge

• 1995: March 21 - April 12, Clipperton Transform Fault, East Pacific Rise
  July 8 - 20, Endeavor Segment, Juan de Fuca Ridge
  September 18 - 30, Louisiana Slope, Gulf of Mexico
  December 7 - 21, Clipperton Transform Fault, East Pacific Rise

• 1994: July 1 - 15, Endeavor Segment, Juan de Fuca Ridge
  September 25 - October 5, Louisiana Slope, Gulf of Mexico (Chief Scientist)
  November 6 - December 5, Clipperton Transform Fault, East Pacific Rise

• 1993: June 23 - July 14, Louisiana Slope, Gulf of Mexico

• 1992: March 23 - April 24, Clipperton Transform Fault, East Pacific Rise
  May 22 - 27, Alaminos Canyon, Gulf of Mexico
  August 9 - 22, Louisiana Slope, Gulf of Mexico

Professional Society Participation
• International Society for Microbial Ecology
• American Society for Limnology and Oceanography
• American Society for Microbiology
• Union of Concerned Scientists

Service to the field
• American Society for Microbiology/Joint Genome Institute Functional Genomics Institute. July 2010 and 2011. Co-chaired a 4-day workshop to assist professors from colleges and universities worldwide in the implementation of functional genomics-related curriculum innovations.

• American Society for Microbiology Spring Bioinformatics Institute. Spring 2009 – present. Co-chaired a 4-day workshop to assist professors selected from colleges and universities worldwide in the implementation of bioinformatics-related curriculum innovations.

• Department of Energy-Joint Genome Institute Undergraduate Research Program in Microbial Genome Annotation. Fall 2007 – present. Pilot faculty collaborator for curriculum development and implementation.

• University-National Oceanographic Laboratory System Deep Submergence Science Committee, member, Fall 2004-2008.

Proposal Review Participation
• NSF IOS Proposal Reviewer, Spring 2009
• NSF DEB Proposal Reviewer, Spring 2009
• NSF IOS Proposal Reviewer, Fall 2008
• NSF MIPS Proposal Reviewer, Spring 2008
• NSF Genes and Genomes Proposal Reviewer, Spring 2007
• USF Innovative Teaching Program, Spring 2006
• USF Internal Awards Program, Fall 2005
• NSF Marine Geology and Geophysics, Fall 2005
• NOAA Undersea Research Program, Fall 2005
• NSF Biological Oceanography, Spring 2005
• NSF Microbial Observatories Proposal Reviewer, Fall 2004
• NSF Systematics Proposal Reviewer, Fall 2003

Proposal Panel Review Membership
• NSF MCB Fall 2010
• DOE Biological Systems Research on the Role of Microbial Communities in Carbon Cycling, Spring 2010
• NASA Exobiology Review Panel Member, Spring 2010
• JGI/DOE Community Sequencing Program Panel Member, Spring 2007
• NASA Exobiology Review Panel Member, November 2003

Manuscript Review Participation
• Frontiers in Microbial Physiology and Metabolism, Associate Editor

Manuscript Review Participation (ad hoc)
• Plos One
• Geobiology
• Environmental Microbiology
• Limnology and Oceanography
• Deep Sea Research
• Journal of Bacteriology
• Plant Physiology
• Functional Plant Biology
• Microbiology

Courses Taught
• GLY 6739, Global Biogeochemistry, USF, Team-taught, Fall 2008 and 2009.
• BSC 5931, Topics in Microbial Ecology, USF, Fall 2007 and 2008.
• BSC 5931, Genomics, USF, Fall 2004–9.
• BSC 4937, Global Climate Change: Impacts on Marine Ecosystems, USF, Fall 2006.
• MCB 4404, Microbial Physiology and Genetics, USF, Spring 2004-10.
• MCB 4404L, Microbial Physiology and Genetics Lab, USF, Spring 2004-10.
• BSC 6907, Coral Physiology, USF, Fall 2003.
• Thesis Supervisor for Mary Mangiapia, Fall 2009-present.
• Dissertation Supervisor for Rene Weisner, PhD student, Fall 2008-present.
• Thesis Supervisor for Kristy Menning, MS student, Fall 2007-present.
• Thesis Supervisor for Ishtiaque Quasem, MS student, Fall 2007-present.
• Dissertation Supervisor for Amanda Boller, PhD student, Spring 2005-present.
• Thesis Supervisor for Phaedra Thomas, MS student, Fall 2005-Summer 2008.
• Dissertation Supervisor for Kim Dobrinski, PhD student, Fall 2004-Summer 2009.
• Committee member (non-chair) for four USF Masters and seven PhD students, Fall 2003-present.
• Mentor for twenty-one undergraduate researchers, USF, Fall 2003-present.
• Mentor for four undergraduate researchers, Harvard University, Fall 1998 – Summer 2003.
• Graduate Teaching Assistant (TA) and Guest Lecturer, Physiological Ecology, Pennsylvania State University (PSU), Spring 1998.
• TA, Cells and Molecules, PSU, Spring 1997.
• TA, Function and Development of Organisms, PSU, Fall 1996.
• Mentor for two undergraduate researchers, PSU, Spring 1996 - Spring 1998.

Thesis Completion by My Research Group

Outreach Participation
• USF Darwin Day, Winter 2012. “Convergent evolution at the bottom of the ocean: How to turn a worm into a plant”.
• Summer Project for a High School Student, Summer 2008. Mentored Grace Vaziri on a two-week project to decipher chemotaxis by Thiomicrospira crunogena.
• Science Fair Project Advisor, Fall 2004, Spring 2006. Mentored Hannah Rutherford with her 8th grade science fair project, “Got Thiomicrospira? This bacterium can sniff and swim for nutrients under pressure”.
• The Educational Cooperative Summer Institute at Dover Sherborne High School. Summer 2001. Lectured on deep sea hydrothermal vents, and presented possible laboratory exercises, to high school teachers.
• Eyes to the Future Program, Fall 1999-2001. Scientist mentor for young women in middle and high school.
• REVEL Program, Fall 1997. Trained two high school teachers to be research assistants on a research cruise to the Juan de Fuca Ridge.
Peter Stiling  
Department of Biology  
University of South Florida  
Tampa, FL 33620-5150  
Tel: (813) 974-3754  
Fax: (813) 974-3263  
Email: pstiling@cas.usf.edu

Education

B.S.  -  University of East Anglia, 1976  
Ph.D.  -  University College, Cardiff, 1979

Academic Positions

2002-Present, Professor, University of South Florida  
1996-2002, Associate Professor, University of South Florida  
1990-1996, Assistant Professor, University of South Florida  
1985-1990, Research Associate, Florida State University  
1983-1985, Lecturer, University of the West Indies, Trinidad  
1980-1983, Research Assistant, Florida State University

Awards

2008 Faculty Award for Research, Scholarly and Creative Excellence  
  Peter Stiling, Anthony M. Rossi and Maria V. Cattell. 2003. Associational plant  
2003 President’s Award for Faculty Excellence  
2000-2001, Visiting Scientist, Smithsonian Institution  
1995 Teaching Incentive Program Award

Grants in Support of Research

Received:

24. Testing the enemy release hypothesis using native and exotic cactus moths in Florida.  
   $5,000 — University of South Florida, 2008-2009  
23. Changes in biodiversity under elevated CO2  
   $348,000 — NIGEC 2004-2008  
22. Quantifying seedling success of *Conseola corallicola*, the semaphore cactus, an  
   imperiled species.  
   $38,925 — Florida Department of Agriculture 2004 - 2007
21. Are current trophic dynamics models worth their salt? The relative roles of top-down and bottom-up effects along a salinity gradient in a Florida salt marsh.  
$350,487 — NSF 2003-2006

20. Insect herbivory, attack rates by natural enemies and leaf abscission under ambient and elevated CO$_2$.  

19. The relative importance of top-down and bottom-up forces along a plant productivity/quality gradient in a Florida salt marsh: the utility of the HSS, trophodynamics, GGA and MS models.  
$210,000 — National Science Foundation. 2001-2004  
$6,000 — REU Supplement 2002  
$6,000 — REU Supplement 2003

$1,500 — Cactus and Succulent Society of America, 2000

17. The rate of spread of *Cactoblastis* moths on U.S. cacti and the degree of associated cactus mortality.  
$13,297 — United States Department of Agriculture, 2000

16. Re-establishing the semaphore cactus in the Florida Keys.  
Florida Department of Agriculture  
$28,589 — 2000-2001

15. Insect herbivory, leaf abscission and leaf decomposition under elevated CO$_2$.  
$7,167 — Research and Creative Scholarship Award, University of South Florida, 1998

14. The importance of natural enemies to herbivores in Florida coastal communities.  
$990 — College of Arts and Sciences Faculty Development Grant, University of South Florida, 1998.

Florida Department of Agriculture  
$25,977 — 1998-1999

12. The defensive role of the sulfonium compound DMSP against insects feeding on saltmarsh plants.  
$2,500 — University of Florida 1997
11. Research and restoration of *Opuntia spinosissima*.  
Florida Department of Agriculture  
$28,500 — 1996 - 1997$

10. Effects of elevated CO$_2$ on insect herbivory in a Florida scrub-oak ecosystem.  

9. Variation in herbivore population sizes: Reciprocal transplant experiments to compare the effects of host quality, host genotype, natural enemies and the formation of demes in a four-trophic level system.  
$200,000 — National Science Foundation, 1993-1996$  
$4,750 — REU supplement 1995$  
$4,250 — REU supplement 1994$

8. Protecting the endangered cactus, *Opuntia spinosissima*, from attack by the cactus eating moth *Cactoblastis cactorum*.  
$7,500 — Research and Creative Scholarship Award, University of South Florida. 1991$

7. Protecting the endangered cactus, *Opuntia spinosissima*, from attack by the cactus eating moth *Cactoblastis cactorum*.  
$5,000 — Catherine H. Beattie Fellowship for Derek Johnson, Center for Plant Conservation. 1991$

6. Protecting the endangered cactus, *Opuntia spinosissima*, from attack by the cactus eating moth *Cactoblastis cactorum*.  
$9,000 — U. S. Fish and Wildlife Service. 1991-1993$

5. Protecting the endangered cactus, *Opuntia spinosissima*, from attack by the cactus eating moth *Cactoblastis cactorum*.  
$4,000 — Katherine Ordway Stewardship Endowment, The Nature Conservancy. 1991$

4. Persistence in a salt-marsh insect community: experiments with local populations.  
(with Donald Strong)  
$299,406$  
National Science Foundation. 1990–1993  
REU supplement $4,725.00 — 1993$  
REU supplement $3,850 — 1992$

3. Transfers of leaf-miner eggs between leaves, trees, and species of oak trees: tests of the deme-formation hypothesis for a mobile insect. (with Daniel Simberloff)  
$199,994 — National Science Foundation. 1990–1993$

2. Insect herbivory in tropical rain forests.  
$6,737 — University of the West Indies. 1984$
1. Interspecific Competition between *Spartina* stem borers.
   $78,993 — National Science Foundation. 1983-1986

**Membership in Professional Societies**

Fellow of the Royal Entomological Society of London
Member of the Entomological Society of America
Member of the Florida Entomological Society
Member of the Ecological Society of America

**Scientific Papers Reviewed for:**

American Entomologist, Annals of the Entomological Society, Biological Control,
BioScience Ecological Entomology, Ecology, Environmental Entomology, Florida
(Editor 1997–2001), Oikos.

**Grants Reviewed for:**

Florida Non-Game Wildlife Program.
National Science Foundation: Animal Behavior panel; Population biology panel;
   Ecology panel (panel member October 1995, October 2001, April 2003, December
   2009)
United States Department of Agriculture
Sea Grant

**Undergraduate Students**

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
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<tbody>
<tr>
<td>Alex Collazos</td>
<td>1991</td>
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<tr>
<td>Christine Hilleary</td>
<td>1991</td>
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<tr>
<td>Beth Moses</td>
<td>1991</td>
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<tr>
<td>Kate Frey</td>
<td>1992</td>
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<td>Terri Woods</td>
<td>1992</td>
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<td>Kristin Jaegger</td>
<td>1993</td>
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<td>Ray Kraker</td>
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<tr>
<td>Leetha Menon</td>
<td>1993</td>
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<tr>
<td>Clara Moreno</td>
<td>1993</td>
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<tr>
<td>Cathleen Carter</td>
<td>1994</td>
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<tr>
<td>Kerry Hennenfent</td>
<td>1995</td>
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<td>Jody Kent</td>
<td>1995</td>
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<tr>
<td>Alicia Kerstyn</td>
<td>1996</td>
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<tr>
<td>Anne Kruppa</td>
<td>1996</td>
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<td>Kate Malloy</td>
<td>1999</td>
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<td>Callie Bales</td>
<td>2000</td>
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<tr>
<td>Angela Infante</td>
<td>2002</td>
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<td>Gwen Oberholtzer</td>
<td>2002</td>
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<td>Jeannie O’Reilly</td>
<td>2002</td>
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<tr>
<td>Deborah Tharpe</td>
<td>2002</td>
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<td>(Honors Student)</td>
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<tr>
<td>Amy Joslyn</td>
<td>2002</td>
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<td>Elena Taktikos</td>
<td>2002</td>
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<td>Lydia Overheim</td>
<td>2002</td>
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<td>Sara Giunta</td>
<td>2002</td>
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<tr>
<td>Ashley Vanderkar</td>
<td>2003</td>
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<tr>
<td>Sarah Rosenbloom</td>
<td>2003</td>
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<tr>
<td>Mextli Lermont</td>
<td>2003</td>
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<td>Kara Winston</td>
<td>2004</td>
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<td>Christina Harris</td>
<td>2004</td>
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<tr>
<td>Shalane Ponsell</td>
<td>2006</td>
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<td>Pauline Thai</td>
<td>2006</td>
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<tr>
<td>Daniel Robinson</td>
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<td>Jessical Allen</td>
<td>2007</td>
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<tr>
<td>Amanda Ditson</td>
<td>2007</td>
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<td>Hamid Hoveida</td>
<td>2007</td>
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<tr>
<td>Carl Franconi</td>
<td>2007</td>
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<td>Rachel Vistein</td>
<td>2007</td>
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<tr>
<td>Caitlyn Palmby</td>
<td>2008</td>
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<td>Dianne Harshberger</td>
<td>2008</td>
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<tr>
<td>Will Mashburn</td>
<td>2008</td>
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<tr>
<td>Leah Pope</td>
<td>2008</td>
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<tr>
<td>JoAnne Brown</td>
<td>2010</td>
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</tbody>
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Graduate Students

### Masters
- Derek Johnson 1991-1994
- Eric Hudson 1993-1995
- Daniel Moon 1995-1996
- Ben Motten 1995-1999
- Dawn Hart 1995-2000
- Laura Altfeld 2000-2003
- Maria Albarracin 2002-2005
- Amanda Baker 2002-2006
- Lance Arvidson 2007-2008
- Conrad Berganza 2010-
- Danielle Noaker 2010-

### Doctoral
- Todd Bowdish 1993-1997
- Maria Cattell 1994-2001
- Daniel Moon 1997-2001
- Mark Barrett 2000-2004
- Tatiana Cornelissen 2001-2006
- Laura Altfeld 2003-2006
- Heather Jezorek 2005-
- Kerry Bohl 2005-
- Keith Stokes 2007-
- Jennifer Maul 2009-
- Christy Foust 2010-
- Ralph Perkerson 2010-

### Additional Graduate Student Committees
- Dawn Wilson 1990-1996
- Rita Longnecker 1990-1993
- Laura Knowles 1990-1993
- Brad Robinson 1990-1994
- Keeney Hayes 1991-1996
- Tiffany Doan 1992-1997
- Dan Schmutz 1992-1997
- Eric Sutton 1993-1996
- Amy Haddock 1993-1996
- Alex Collazos 1993-1998
- Alan Brooks 1994-2002
- Stig Ravdal 1995-1999
- George Navratil 1995-2000
- Brent Burman 2001-2005
- Shannon Gonzales 2001-2005
- Keith Stokes (UNF) 2003-2007
- Neal Halstead 2004-2007
- Katie Basiotis 2005-2007
- Laura Beddinger 2005-
- Teresa Piacenza 2005-2008
- Jessica Platt (UF) 2007-2009
- Tammy Foster 2007-
- David Jennings 2007-
- Sarah Barry 2008-2011
- Jackie Guzy 2008-2010
- Michael Middlebrooks 2008-
- Jennifer Peterson 2009-
- Hank Custin 2009-2010
Amy Erickson  1995-2003  Courtney Coon    2009-
Kristin Penney  1997-2001  Chris Haggerty  2011-
Sam Jacobsen   1998-2002
Chris Anderson  1998-2001
Tammy Foster    1998-2002
Chris Cornelisen 2000-2003

Post-doctoral Associates
Dr. Anthony Rossi 1991-1997
Dr. Daniel Moon 2001 – 2003
Dr. Hong Liu 2003-2005
Dr. Rebecca Forkner 2004-2006

Invited Seminars & Symposia
- Florida Entomological Society Annual Symposium, Jupiter, Florida, July 2010.
- Smithsonian Environmental Research Center, Edgewater, Maryland, May 2010.
- University of South Florida, Tampa, Florida, Departmental Seminar, January 2010.
- University of Notre Dame, South Bend, Indiana, October 2009
- Association of Tropical Biology and Conservation, Invasive Species Symposium, Yunnan China, July 2006 (co-author)
- University of Houston, Houston, Texas, October 2004.
- Brisbane, Australia, August 2004, International Entomology Congress (two symposia).
- Beijing International Symposium on Biological Invasions, Beijing, China, June 2004 (co-author)
- University of California, Davis, California, May 2004.
- University of Georgia, Athens, Georgia, April 2004.
- USDA Biological Control of Weeds Laboratory, Fort Lauderdale, Florida, February 2004.
- Rare Plant Task Force meeting, Bok Tower Gardens, Lake Wales, Florida November 2003.
- Zacatecas, Mexico, September 2003 (IX Mexican and VII International Congress on Cactus Pear).
- University of Minnesota, Minneapolis, Minnesota, April 2003 (Invasion Biology Research Consortium Symposium).
- University of Maryland, College Park, Maryland, April 2003.
- University of Miami, Miami, Florida, April 2003.
- Entomological Society of America National Meeting, Fort Lauderdale, Florida, November 2002 (2 symposia).
- NIGEC National Meeting, Cocoa Beach, Florida, November 2002, Local Organizer
- NIGEC National Meeting, Duke University, North Carolina, November 2001,
- Cactoblastis Workshop, Clearwater, Florida, September 2000 (local organizer)
- University of California, Berkeley, California, May 1997

Other Seminars
- Entomological Society of America, Southeast Regional Meeting, Puerto Rico, March 2011 (second author, poster).
- Ecological Society of America, Albuquerque, New Mexico, August 2009 (Second Author – 2 posters)
- Ecological Society of America, Savannah, Georgia 2003.
- Entomological Society of America, Atlanta, Georgia, December 1999 (second author, and poster).
• Ecology Society of America, Baltimore, Maryland, August 1998.
• Ecological Society of America, Albuquerque, New Mexico, August 1997.
• Entomological Society of America, New Orleans, Louisiana, December 1990.
• Florida Entomological Society, Clearwater, Florida, August 1989.
• International Entomophagous Insects Workshop, Riverside, California, March 1989.
• Florida Entomological Society, Daytona Beach, Florida, August 1988.
• Entomological Society of America, Boston, Massachusetts, December 1987.
• International Auchenorrhyncha Workshop, Waageningen, Netherlands. 1978.

Scientific Publications

Journal Articles:

In review

Published:
109. Peter Stiling, Rebecca Forkner and Bert Drake. 2010. Long term exposure to elevated CO$_2$ in a Florida scrub-oak forest increases herbivore densities but has no effect on other arthropod guilds. Insect Conservation and Diversity 3: 152-156.
106. Tatiana Cornelissen and Peter Stiling. 2009. Spatial, bottom-up and top-down
91. Mark A. Barrett and Peter Stiling. 2006. Effects of key deer herbivory on forest structure in the lower Florida Keys. Biological Conservation 129: 100-108
90. Mark A. Barrett and Peter Stiling. 2006. Long-term changes in plant communities
influenced by key deer herbivory. Natural Areas Journal. 26: 235-243


87. Tatiana Cornelissen and Peter Stiling. 2006. Responses of different herbivore guilds to nutrient addition and enemy exclusion. Ecoscience 13: 66-74


75. Myra C. Hall, Peter Stiling, Daniel C Moon, Bert G. Drake, and Mark D. Hunter. 2005. Effects of elevated CO2 on foliar quality and herbivore damage in a scrub


45. Peter Stiling, Anthony M. Rossi, Bruce Hungate, Paul Dijkstra, C. Ross Hinkle, W. M. Knott III, and Bert Drake. 1999. Decreased leaf-miner abundance in elevated CO2: reduced leaf quality and increased parasitoid attack. Ecological Applications


**Text Books:**


376
Edited Proceedings:


Book Chapters:


Book Reviews:


**Gray Literature:**


**Popular articles:**


**Popular books:**


**Press coverage:**


October 11, 1999. Professor Turned Plant Protector. The Oracle, University of South Florida.

September 13, 1999. Professor Studies Ways to Save Florida Cactus. The Oracle, University of South Florida.


**Course Taught**

Principles of Ecology
Community Ecology
Environmental Science
Environmental Issues (new course developed in 1996)
Plant-Animal Interactions (new course developed in 2002)
Coastal Biology: mangrove and saltmarsh systems (co-taught in 2005)
Biology for Life (new course developed in 2006)

**University Service**

**Departmental**

Planning Committee 1996-1998 (Chair), 2003-2006
Graduate Committee 1996-1997
Plant Ecology Search 1999 (Chair)
Instructor Search Committee 1998
Faculty Advisory Committee 1998-2001 (Chair, 1999-2001), 2004-2007

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Curriculum Committee 2001-2002 (Chair)

**Division**

Ecology Search Committee, 2007 (Chair, two positions)
Spatial Ecology Search Committee, 2008 (Chair)
Faculty Advisory Committee, 2007-2010, 2010-2013 (Chair)
Graduate Committee, 2010-2013

**College**

Tenure
College of Arts and Sciences

Biology Ph.D. Programs
History of our Biology Programs

- USF has had a general biology Ph.D. program for more than 40 years producing nearly 200 graduates
- In 2006, a reorganization of Biology was initiated, and completed in 2009 the formation of two units:
  - Integrative Biology (IB) and
  - Cell, Microbiology and Molecular Biology (CMMB)
- Faculty sorted in relation to their areas of expertise and budgets were apportioned accordingly
Why separate Biology Departments?

• Aligns Biology Ph.D. Programs with trends in modern biology

• Move from a Ph.D. degree in general biology to more focused degrees in:
  – **Integrative Biology** (ecology, evolution and global change biology)
  – **Cell and Molecular Biology** (human health and disease)
Biology program differentiation

• These two programs are widely divergent from each other in scientific content.
• CMMB program is primarily biomedical in nature, focusing on the cellular and molecular basis of human diseases.
• IB programs center on the biological, ecological and evolutionary competency of organisms, with a primary focus on conservation and global change biology.
Advantages

• Allows students to focus on knowledge, skills and technology relevant to the two highly divergent areas of modern biology.
• Differentiates for employers areas of graduates expertise so improves job prospects
• No other SUS program differentiates the area of biology in this way.
• No new resources are needed; all support was reapportioned from the general biology program.
Examples of universities with a two-program approach

- UC Berkeley
- UCLA
- Kansas
- Harvard
- Chicago
- Arizona
- Princeton
- UC Davis
- Iowa State
- Yale
- Tulane
- Cornell
- Stony Brook
- Rutgers
- Ohio State
Need for graduates

• Career opportunities for life science professional graduates projected to grow 19-36% during the decade
  – median salaries $62,000-$77,000 (Bureau of Labor Statistics)

• Areas of employment:
  – Health and wellness industry
  – Environment and resource management
  – College/University teaching
Alignment with the Strategic Plan

• **Student Success**: new programs are more focused; skills and knowledge development enhances career opportunities for graduates. Both faculty and graduate students contribute to high quality undergraduate teaching and research.

• **Research and Innovation**: Strong extramural funding and well cited publications.

• **External Partnerships**: state and local agency partnerships and state and local industrial partners.