

Training, Graduate Degrees, and Employment Patterns of Students Associated with Research Projects, 1972-1982

William Seaman Jr. and Donald Y. Aska



TRAINING, GRADUATE DEGREES, AND EMPLOYMENT
PATTERNS OF STUDENTS ASSOCIATED WITH RESEARCH
PROJECTS, 1972-1982

By

William Seaman, Jr.

and

Donald Y. Aska

Sea Grant College Program
University of Florida
Gainesville, Florida 32611

Project No. M/IR-6

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**TRAINING, GRADUATE DEGREES, AND
EMPLOYMENT PATTERNS OF STUDENTS
ASSOCIATED WITH RESEARCH PROJECTS, 1972-1982**

Introduction

Sea Grant relies heavily on student participation to assist in achieving project goals in marine and coastal research, extension, education and public service. Undergraduates may be hired on an hourly basis to execute specific research tasks in a laboratory, the field, or a library, whereas advanced graduate students often pursue independent research. In either situation, and for all cases in between, the student is exposed to the "sea grant ethic" of applying college-level problem-solving skills to issues of marine resource development, conservation, and productivity that are of concern statewide to significant coastal audiences in Florida.

All Sea Grant programs in the U.S. supported nearly 7,000 students in coursework or research projects from 1968 to 1982. To determine the role of Florida Sea Grant (FSG) in student development a survey of undergraduate and graduate participants in FSG projects was conducted in 1983. The data in this report demonstrate that many students have found Sea Grant support and experience valuable in pursuing their careers.

This report summarizes the participation of about 300 students in Florida Sea Grant and relates it to their career development. From serving apprenticeships at their various levels of study, Florida's developing young professionals have—in the first decade of Sea Grant funding to the State University System of Florida — assumed responsible positions of leadership in academia, agency programs, and private business, at both the state and national level.

Methods

Sea Grant Assistants

This study was conducted in 1983 as a survey of all known students who had participated in Sea Grant projects by providing some form of technical assistance. The purpose was to determine the patterns of employment and educational/career development of these students, and to ask them to evaluate their experience with Sea Grant. Based on annual and final reports of all (128) projects conducted from 1972 when Florida Sea Grant Program funding* began, to early 1983, student participants were identified. Addresses were determined from annual reports of more recent projects or through contacts on the appropriate campus, usually either the principal investigator for a project, fellow students or an alumni office.

*No data for students engaged in separately funded University of Miami Sea Grant projects from 1968 through 1977 were secured in the survey.

Initially a letter was sent to the former or current principal investigator for each project, informing them of the survey and requesting assistance in identifying and locating students who had participated in the Sea Grant project (see Appendix 1). A reply card for recording information also was mailed (Appendix 2). From all sources, then, a master file of student names was compiled. The appropriate campus administrative office also was kept informed.

Survey sheets accompanied by a letter of explanation were mailed to approximately 300 students (Appendices 3 and 4). (The distribution of student participants and the pattern of replies to the survey would not reflect proportionately the overall distribution of Sea Grant effort, because certain organizations such as non-profit, non-degree-granting private laboratories ordinarily do not involve students in their work.)

As replies were received, information about the collegiate history and employment of each person was tabulated. If no response was received, follow-up letters were sent -- to a revised address if necessary.

Other Sea Grant Collegiate Programs

Florida Sea Grant has also funded the establishment of a number of academic and technical courses and curricula at different institutions. The students in those courses were enrolled for a term and received academic credit in diverse fields such as marine economics, boat engine repairs, coastal law and policy, etc. The data reported in this paper do not include nor describe the enrollment of hundreds of students in these courses and training programs.

Rather, the intent of this report is to present a profile of students who participated in the conduct of a Sea Grant research project. Typically, such projects lasted for one to three years, with a given student involved for all or part of the time, either in a paid capacity to assist in "routine" duties, as a professionally oriented graduate assistant with some independent responsibilities, or in some cases as an unpaid undergraduate during a "special topics" course assignment. In all cases, the student reported to a faculty supervisor.

Results

Approximately 300 individuals were identified as having participated in the conduct of FSG research projects in academic years 1972-1982, based on Florida Sea Grant project records and contact with project investigators and alumni record offices. Survey forms were returned by 206 individuals. This good response rate (69%) is perhaps better than expected, considering the length of time since the earliest assistants were graduated and the job mobility of many of them.

As a check on the number of students estimated (ca. 300) at the start of this survey, a count of proposed student positions tabulated in the annual FSG

"implementation plan" determined that 450 student assistant positions were planned by faculty research leaders in this same time period. Two factors explain the difference between these figures, which actually are in good agreement based on the ratio noted in the following section. First, as expected, the number of student positions exceeds the actual number of individuals who occupy them over time. In other words, from one year to the next the same individual frequently will continue as a research assistant. This obviously is the case for a student working on a graduate degree which typically requires two or more years. Also it is noteworthy that undergraduate students may play only a minor role in certain projects, for example working for an hourly wage to sort samples, clean-up, etc. In some cases they may have worked for only a very short period during a semester and therefore the faculty member may not have identified them for this survey. Therefore, it was unlikely that all of the approximately 100 undergraduates who served in FSG research positions were identified in preparing a master list of student assistants. By contrast, identification of graduate students was easier because of the professional contacts most maintain with faculty and other colleagues after they graduate. Typically, the more students were involved with a Sea Grant project, the more responsive and useful they were to the survey.

Student Characteristics

Annually, the number of students participating in Florida Sea Grant projects has ranged between 17 and 64 since 1972 (Table 1). Although Florida Sea Grant effort has taken place at 15 organizations since 1972, not all of them support students, since they are research laboratories and do not offer degrees. Thus, 10 institutions of higher learning in Florida, seven public and three private, have enlisted students in Sea Grant projects (Table 2)..

Table 1. Number of student positions established for graduate, professional school, or undergraduate assistants in Florida Sea Grant projects, 1972-1982.

Student Category*	Calendar Year											
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	
Research assistant graduate students	14	32	27	51	22	25	24	27	30	32	30	
Professional school students	0	4	3	0	1	0	0	14	0	0	0	
Pre-baccalaureate students	<u>3</u>	<u>3</u>	<u>7</u>	<u>7</u>	<u>9</u>	<u>39</u>	<u>14</u>	<u>0</u>	<u>9</u>	<u>8</u>	<u>5</u>	
TOTAL	17	39	37	58	32	64	38	41	39	40	35	

*These three terms are used in the personnel listing on NOAA Form 90-4, the Federal Sea Grant budget sheet.

Table 2. Institutions where students received college degrees while participating in Florida Sea Grant research projects, 1972-1982. (A student may have earned more than one degree during the affiliation with Sea Grant. In some cases a graduate degree may not have been a result of the involvement with the Sea Grant project.)

Institutional Location of Student	Level of Study During SG Project Participation		
	Bachelor	Master	Doctorate
Florida Atlantic Univ.	9	14	0
Florida Inst. Technol.	7	11	0
Florida State Univ.	12	22	10
Nova Univ.	0	3	1
Univ. Central Florida	1	0	0
Univ. Florida	20	38	31
Univ. Miami*	5	1	1
Univ. North Florida	3	0	0
Univ. South Florida	23	16	8
Univ. West Florida	<u>13</u>	<u>19</u>	<u>0</u>
TOTAL	93	134	51

*Data are only from 1978 and after.

The 206 individuals who replied to the survey actually participated in 284 different positions since some persons were involved at two or even three degree levels. It is not uncommon, for example, for a graduate student to earn both a masters and doctoral degree at the same institution. Participation at the graduate level was nearly twice that of undergraduates; 93 individuals were involved at the bachelors degree level, 134 at the masters level, and 51 at the doctoral level (Table 2). Higher numbers of students at the older state universities reflect their historical missions in research as well as teaching. Data for the University of Miami reflect only that time (since 1978) during which that institution has participated in the State University System of Florida Sea Grant College Program.

The disciplines in which students were enrolled during their academic careers are heavily oriented to the natural sciences and engineering. A profile of all subject majors chosen by the survey respondents at all stages of their college program (Table 3) regardless of whether or not they actually were participating with a Sea Grant project at the time -- indicates that over one-half were in the biological sciences both as undergraduates and at the

Table 3. Enrollment in subject area by all students who at one or more points in their collegiate program participated in a Florida Sea Grant project from 1972 to 1982. (This includes degrees that were earned while not involved in a Sea Grant project and thus reflects the academic history of students.)

Major	Degree Level (Achieved or Expected)		
	Bachelor	Masters	Doctoral
Biological Sciences			
Agronomy	1	0	0
Biol. oceanography	81	57	14
Bio-environmental	0	6	2
Ecology	1	2	1
Fisheries and wildlife	2	6	1
Microbiology	4	2	1
Ornamental Horticulture	4	3	0
Zoology	14	3	0
Subtotal	107	79	19
Engineering			
Aerospace	1	0	0
Civil/Industrial	17	5	7
Coastal/oceanographic	4	17	4
Electrical	0	2	0
Environmental	0	0	1
Hydraulic	0	2	1
Mechanical	2	0	0
Ocean	4	4	0
Subtotal	28	30	13
Physical Sciences			
Chemistry/biochemistry	10	5	3
Geology	6	4	1
Mathematics	6	1	0
Meteorology	0	1	0
Physics	2	0	0
Subtotal	24	11	4
Behavioral & Social Sciences			
Anthropology	1	1	0
Geography	1	3	1
Political Science	8	2	0
Psychology	4	2	1
Sociology	4	3	1
Subtotal	18	11	3
Law	0	3	16
Business			
Agriculture Economics	3	7	6
Business	4	1	0
Economics	4	2	0
Management Science	0	1	1
Marketing	1	0	0
Subtotal	12	11	7
Humanities			
English	2	1	1
History	2	1	1
Literature	1	1	1
Philosophy	1	0	0
Subtotal	6	3	3
Health Related			
Medicine	0	0	5
Nursing	1	1	0
Physiology	0	0	1
Subtotal	1	1	6
Education			
Communications	0	1	0
Teaching	1	1	1
Subtotal	1	2	1
TOTAL	197	151	73

masters level. At the doctorate level the greatest number graduated with a law degree, while about one-fourth were in the biological sciences. Lowest enrollment was in the humanities, education, and health fields, probably due to reduced funding and program emphasis in this area.

For many undergraduates, the field of "marine biology" has a unique allure. Thus it is tempting for them to explore some related field of the biological sciences, such as fisheries or oceanography, as a major. The orientation of Sea Grant to living marine resources such as finfish and shellfish obviously dictates the background required in students hired to assist research projects, too.

As students progress in their academic careers other fields are increasingly explored (Figure 1). For example, whereas 54% of all undergraduates in the survey declared themselves as majors in biological sciences, at the doctoral level only 27% of all students were in this field. The proportion of students in engineering, meanwhile was fairly constant. In part, this indicates that Sea Grant is not disproportionately oriented to fisheries, since students with other academic backgrounds also are needed to assist research (in social sciences, for example). The more evenly spread enrollment and balanced array of doctoral fields listed in Table 3 reflects the restricted job market in marine biological sciences as well as the enhanced salary structure in other fields.

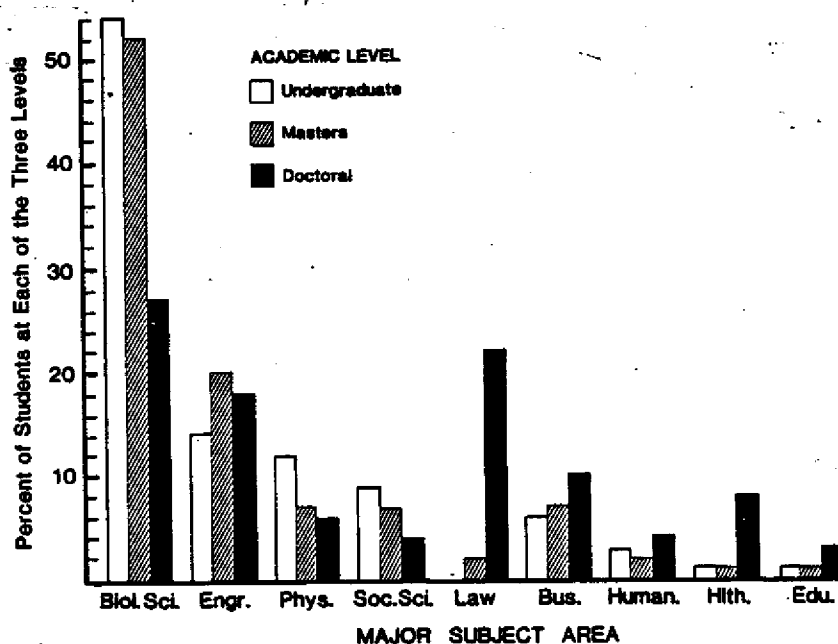


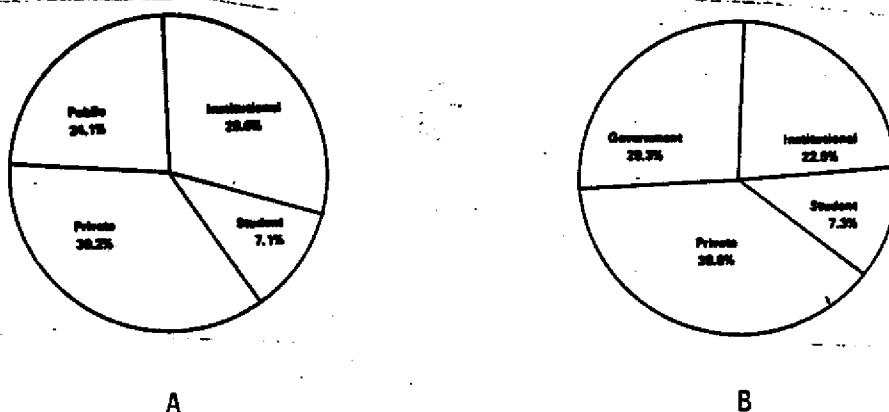
Figure 1. Enrollment in subject areas by students at three successive academic levels, both during and before or after Florida Sea Grant project participation, 1972-1982.

The educational background of the students is extremely diverse. The 206 survey respondents attended 96 different institutions of higher learning during their undergraduate and graduate programs. Thirteen Florida schools (seven public, six private) and 77 institutions elsewhere in the U.S. were represented, as well as six schools in other countries .

Employment and Evaluations

Patterns of first employment upon leaving the university and completing participation in Sea Grant projects are depicted in Figure 2. Based on 199 survey responses, the first employment for 78 students was in the private sector. Another 48 individuals went to the public sector, either at the Federal (15), state (21), or local (12) level, while 59 graduates went to academic or not-for-profit research institutions either as faculty (23), or in other positions. The remainder (14) continued their studies.

Figure 2. Employment after graduation for students with some experience in Sea Grant research projects. A. First employment after leaving college. B. Employment at time of 1983 survey.



The trend for persons whose position had changed since their first employment was to shift from the institutional to the governmental sector (Figure 2). In all likelihood, this is because graduates whose first employment was with an academic or not-for-profit research institution, but at a sub-faculty level, probably received additional job-related training that qualified them to shift to a governmental agency.

Profiles of selected individuals representative of different employment sectors are presented in Appendix 5.

The survey yielded page after page of comments about the value of the Sea Grant experience to the students' postgraduate occupations. Over one-third,

or 36%, of the respondents indicated that the experience gained directly contributed to their being able to obtain their first job. In contrast, only 16% replied that the experience did not contribute at all to their securing employment. The remainder of the group (47%) said the experience contributed partially to obtaining the job (see Table 4).

Table 4. Attitude of students concerning job-related experience provided by Sea Grant participation, 1972-1982.

Employment	Degree to Which Sea Grant Project Experience Contributed to Obtaining Job. (No. Responses)			Total
	Directly	Partially	None	
First Job	62 (36%)	80 (47%)	28 (16%)	170
Current Position	22 (23%)	60 (62%)	14 (15%)	96

Among the approximately 175 different one- or two-line statements received regarding the attainment of current jobs, in light of having had experience with Sea Grant, many indicated that "getting a foot in the door" was an immediate benefit. This implies that contacts with other professionals and exposure to job opportunities were provided.

Typical of several comments was one statement regarding the interdisciplinary philosophy of Sea Grant: "Sea Grant support provided a valuable research experience. Possibly of equal value was exposure to the proposal writing experience, program development, and information transfer functions associated with Sea Grant."

Of course, quality research is basic to the success of not only Sea Grant but also all of the many other university-level research programs in existence, and many comments reflected the point of view that "many things contributed to my education; Sea Grant being just one of them." On the other hand, another graduate stated that "the research experience and the publications gave me a competitive edge when seeking a job."

The personal lives of students also are enriched by Sea Grant, with one respondent noting that "I met my wife at Sea Grant, and she helped me reach my present career level." Several reflected on their associations with faculty, remarking, for example, that working with one professor was "...one of the best experiences of my adult life. He is truly a man for all seasons."

In summary, Florida Sea Grant has trained young people to relate their knowledge to the timely issues confronting Florida's coastal and marine interests. One student said it best:

"The Sea Grant program allowed me to interact with a variety of people in the field and really broaden my perspective — something not always possible within the confines of a single degree program at a single university. It prevented me from developing telescopic vision and enlightened me as to how science works in the field."

Analysis of Future Student Participation

Review of the academic programs and career tracks of the students who had involvement with Sea Grant research indicates that a vibrant and knowledgeable cadre of professionals is being trained to work with marine issues. Sea Grant "graduates" are working in resources management, industrial development, research, and extension of technical information. They are occupying increasingly responsible roles and with maturity will provide senior management and leadership, as well as train new generations of students and educate the public concerning coastal and marine decisions affecting their lives.

The findings of the 1983 student survey warrant continued tracking of student participation and career development. Two survey instruments are suggested for use in compilation of data: Appendix 6 as a possible means of identifying students when a project starts; Appendix 7 for use after students graduate. Student data should be entered into a computer system for reporting and analysis using available software.

Finally, during the course of the survey FSG instituted an "information kit" that is mailed to new graduate assistants at the start of a project. Along with a cover letter, a brochure entitled "Florida Sea Grant Project Information for Student Assistants," and other orientation materials are sent.



FLORIDA SEA GRANT COLLEGE

Building 803, University of Florida, Gainesville 32611
(904) 392-5870 Suncom 622-5870

March 10, 1983

TO:

FROM: Donald Y. Aska, Consultant to Sea Grant *DY*

I have been commissioned by Dr. James C. Cato, Director, Florida Sea Grant College, to conduct a survey of the career progress of students supported in part through the Sea Grant Program from 1972-1982. Because many graduates leave the area where they were students, this project is going to involve a considerable amount of initial and follow-up correspondence and telephone calls. Any and all assistance you can provide will certainly be appreciated.

By way of background, the Washington Office of Sea Grant and the Council of Sea Grant Directors have given this study a genuine priority and are urging all member Sea Grant institutions to conduct similar surveys. Information of this type, namely, how effective Sea Grant support has been, is a valuable strategy for use at congressional budget hearings. Not all congressional members and staffs are convinced that student support is justified and surveys of this type just might provide the justification for continued budget support. Also, OSG considers this aspect of any Sea Grant program a significant criterion in its recertification process. As such, we naturally want to have as complete a survey as possible so that we can demonstrate Florida Sea Grant's emphasis on marine education.

We plan to contact each of your students, and have an urgent need for information as to their present education/employment status and address. According to our records, you had the following students involved in your projects, as listed on the attached control cards. Please provide the current address and telephone number if you have it. Add the names of students not listed. Our records may not be complete. Extra cards are enclosed for this contingency. Please return all control cards to this office. We will then follow-up with a questionnaire to them (copy attached for your interest).

Since we hope to complete this project by June, 1983, I would appreciate your giving this request your priority attention. In many cases we will probably have no real problem in contacting the respondents but some, understandably, will give us a genuine problem. Time is a

Florida A&M University, Florida Atlantic University, Florida Institute of Technology, Florida International University, Florida State University,
University of Central Florida, University of Florida, University of Miami, University of North Florida, University of South Florida,
University of West Florida.

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Letter to Principal Investigators
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factor, so I will appreciate your help. If you do not have the addresses, could you suggest any other source(s) that I might contact?

For your convenience, a return addressed envelope is enclosed.

Thanks for any and all assistance!

DYA/mcw

Attachments: 2

cc: Campus Coordinators

APPENDIX 2. Student Information Card

Name:

Institution:

Year:

P.I.

Address suggested:

Tel.# suggested:

Obtained via:

(over)

1st questionnaire mailed

1st follow-up

2nd follow-up

Phoned:

Notes:



FLORIDA SEA GRANT COLLEGE

Building 803, University of Florida, Gainesville 32611
(904) 392-5870 Suncom 622-5870

Dear

Florida Sea Grant is currently surveying each of the students who have been involved in our various research and education programs to determine (1) their present whereabouts, (2) present occupation, and, (3) if their Sea Grant experience was of benefit to them, and how, in their post-education careers. We have always attached considerable importance to the student-trainee aspect of our grant program and hope it has contributed to your career goals.

According to our records, you were involved in the project,
under the direction of _____ while you were at _____
We obtained your mailing address from _____
and hope this communication reached you with minimum delay.

Attached is a questionnaire which we ask that you complete and return to us in the return addressed, stamped envelope. This information will be quite helpful to us in demonstrating to the Office of Sea Grant that Sea Grant support has produced top quality students in Florida. It will also be useful in helping us to be more competitive in obtaining future student support for those who follow in your footsteps. Your reply will be incorporated in the final summary in such a way that no individual's information will be identifiable.

If you have questions, please feel free to call this office, 904/392-5870. Either Dr. William Seaman, Mr. Donald Aska (who is coordinating this survey) or I will be glad to discuss the matter with you.

We hope you are doing well in your present career and that your Sea Grant experience has been helpful to you.

Sincerely,

James C. Cato
Professor and Director

Florida A&M University, Florida Atlantic University, Florida Institute of Technology, Florida International University, Florida State University,
University of Central Florida, University of Florida, University of Miami, University of North Florida, University of South Florida,
University of West Florida.

APPENDIX 4. Survey Form Sent to Students



FLORIDA SEA GRANT COLLEGE

Building 803, University of Florida, Gainesville 32611
(904) 392-5870 Suncom 622-5870

Florida Sea Grant Student Status Report

This questionnaire is an effort by Florida Sea Grant to determine location, career status and participants evaluation of Sea Grant educational efforts. The directory to be compiled will facilitate communication among Sea Grant students and the evaluation of comments will enable us to compare FSG's graduate career accomplishments with the Sea Grant programs in other states. All responses will be considered confidential and each person is urged to make a prompt and candid reply.

Full name:(please print) _____
(last) (first) (mid. init.)

Home address: _____
(street)

(city) (state) (zip)

Telephone: _____
(home) (business)

Educational progress:

Please complete the following for all degrees earned. Check box if you had Sea Grant support during that time.

	<u>Level</u>	<u>Degree</u>	<u>Year</u>	
<input type="checkbox"/>	Bachelor's	_____	_____	Institution _____ Major _____
<input type="checkbox"/>	Master's	_____	_____	Institution _____ Major _____ Major Professor _____ Thesis Title _____

Started, but did not complete degree ☐

<input type="checkbox"/>	Doctoral	_____	_____	Institution _____ Major _____ Major Professor _____ Dissertation Title _____
--------------------------	----------	-------	-------	---

Started, but did not complete degree ☐

First employment following Sea Grant sponsored research:

Position title: _____

Employer: _____

Business address: _____

(street)

(city)

(state)

(zip)

Did the experience gained in your Sea Grant project contribute directly ____, partially ____, or not at all ____ to your being able to obtain your first job? If not, why? _____

If no longer in first employment, why? _____

Current employment, if different from above:

Position title: _____

Employer: _____

Business address: _____

(street)

(city)

(state)

(zip)

Did the experience gained in your Sea Grant project contribute directly ____, partially ____, or not at all ____, to your being able to obtain your current job? If not, why? _____

General:

Would you recommend similar fields of study as yours for students beginning their university career?

Bachelor: Yes ____ No ____

Masters: Yes ____ No ____

Doctoral: Yes ____ No ____

Please comment:

In your opinion, would you have attained your present career level without Sea Grant support and experience? Yes ____ No ____

Please comment:

Thank you for your cooperation. Please return this questionnaire in the return addressed and stamped envelope to Dr. James C. Cato, Director, Florida Sea Grant College, Bldg. 803, University of Florida, Gainesville, FL 32611; 904/392-5870.

For Doug Gregory, a fishery research biologist at the National Marine Fisheries Service (NMFS) Northwest and Alaska Fisheries Center in Seattle, Sea Grant was the catalyst which eventually resulted in taking him from Key West to Seattle and his present position.

Gregory, son of a Key West commercial shrimp fisherman, began fishing at the age of seven. Some 21 years later, his work on the reproductive dynamics of the spiny lobster, *Paralithys argus*, under Sea Grant sponsorship won for Gregory a 1978 Sea Grant Association (SGA) Student Research Award presented by SGA and the National Ocean Industries Association.

The research which took place in the lower Florida Keys under the direction of Dr. R.F. Labisky, was concerned with determining the minimum size of reproductively mature females, the season of reproduction, and the effect of fishing practices on lobster production. The results were the basis for Gregory's thesis for a Master of Science degree in Wildlife and Fisheries which he received from the University of Florida in 1980.

"The experience I gained with Sea Grant support actually set the stage for my career," Gregory says. "Student support may be the most significant aspect of Sea Grant; its effects are definitely long term and positive."

Gregory went on to the University of Washington to study for a Ph.D. in fisheries where he has a graduate student appointment with NMFS.

While he doesn't necessarily recommend that students just starting out study zoology for their B.S. degrees as he did, he does definitely recommend that undergraduate education be based in the general area of science that per-

tains to specific marine related interests such as biology, physics, or similar disciplines.

On the other hand, Michael Ziegler, regional planner with the West Florida Regional Planning Council, would recommend the study of zoology, his undergraduate major, to students just starting out. Ziegler feels that there is a demand particularly in secondary education for those trained in the technical sciences.

Ziegler, who received his B.S. from Pennsylvania State University, completed his Master of Science work in biology at the University of West Florida under the direction of Dr. T.S. Hopkins. Florida Sea Grant at that time had funded a one-year study to provide a scientific appraisal of the conditions of Choctawhatchee Bay. During this study Ziegler conducted the water sampling and analysis program and supervised other graduate students.

"The Sea Grant experience I received was directly responsible for my initial employment with the Planning Council," Ziegler says, but emphasizes that there is not a large demand for planners at the present time.

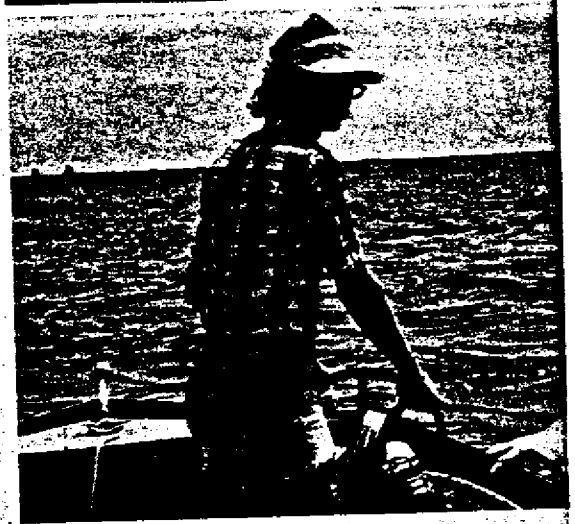
Mike Oesterling Commercial Fisheries Specialist, Marine Advisory Service, Virginia Institute of Marine Science (VIMS) would not presently recommend beginning students pursue either of the disciplines which led to his B.S. and M.S. degrees, namely biology and zoology. The reason: A tight job market.

"As more people enter the field," Oesterling points out, "the more difficult it will be to find work. Additionally, the uncertainty of funding further exacerbates the situation," he says.

Oesterling, who received his M.S. degree in zoology from the University of Florida under the direction of Dr. Frank Mauro, did his graduate work on a Sea Grant-funded project concerned with the population structure, dynamics, and movement of the blue crab. From November 1974 through December 1975, 8884 crabs were tagged and released at 13 different sites along the Florida Atlantic and Gulf coasts to determine the migratory habits of the blue crab.

As a result of his research, Oesterling prepared a report entitled, "Reproduction, Growth, and Migration of Blue Crabs along Florida's Gulf Coast" which was published as a Florida Marine Advisory Bulletin.

PROF



Mike Oesterling, left, assisted by Chuck Blythe, in the 1975 tagging project. Oesterling coordinated the project of the blue crabs along Florida's Gulf and Atlantic coasts.

His first job following graduation and prior to moving to VIMS was as a Marine Extension Agent with the Florida Marine Advisory Program.

"I've learned more from my work with Sea Grant and the Marine Advisory Program than in school," Oesterling said. "At least as far as my career is concerned."

And although Brenda L. Valla, a practicing attorney in Winter Park, already had experience with flood-plain zoning and planning when she received a grant to work with the Center for Governmental Responsibility (CGR) at the University of Florida College of Law, this is not usually the case with students.

"The projects funded by Sea Grant at the CGR are 'plums' for law students because they provide a type of experience most law students do not have and can not easily get," Valla says.

Valla feels that a law student who wants to practice environmental or local government law receives a tremendous advantage in the job market if he or she has CGR experience plus a law degree. However, since the work she did was already in an area in which she had experience, the main advantage for her personally was the financial assistance she was able to obtain while a law student. Valla's work with CGR was in developing a model flood plain ordinance under direction of Drs. Richard Hamenr and Duke Woodson.



Douglas Gregory, left with major professor Dr. Ronald Labisky, accepts a Sea Grant Association Student Research award for Master's Degree students at the meeting of the Association in October 1978.

FILES



a process of pulling traps to check on tagged blue crabs in a field which revealed information about the migratory habits

Valla is associated with the law firm; Winders, Haines, Ward and Woodman, who represents the City of Winter Park. She says her experience is especially useful when reviewing proposals related to flood plain zoning ordinances.

Many postgraduate students who work on Florida Sea Grant sponsored research projects publish a thesis on their Masters or Doctoral work. Occasionally information in a thesis is used as the basis for a Florida Sea Grant Report. Such was the case with the work of Frederick W. Morris IV, a student at the University of Florida under the direction of Dr. B.A. Christensen in the College of Engineering.

Morris, who received his Ph.D. in 1978 upon completion of work on the hydrodynamic factors involved in finger canal and borrow lake flushing in Florida's coastal zone, used information from his thesis for a Florida Sea Grant Report entitled, "Residential Canals and Canal Networks: Design and Evaluation."

Following receipt of his Ph.D., Morris assumed duties as assistant professor at Florida Institute of Technology in Melbourne. When offered an opportunity to direct his own project at the South Florida Water Management District, he joined that organization as Water Resources Engineer.

Morris would recommend fields of study similar to those he followed -

industrial administration, electrical engineering, and civil engineering.

"Each field is important in itself, but the combination is somewhat unique and very useful," he says. "Administration, electrical engineering, computer engineering, and hydraulics have unlimited career potential."

Morris feels Sea Grant support was not only vital to his work but that the experience was relevant to current problems and provided an opportunity he could not have obtained in any other way.

"I think the Sea Grant Program is extremely important to the state and the country," Morris says, "and also to the students because of the resulting productive interaction between the university and some of the citizens of Florida."

At present a materials engineer with David Taylor Naval Ship R & D Center in Annapolis, MD, Barbara A. Shaw received her B.S. degree in ocean engineering from Florida Atlantic University (FAU). While a graduate student at FAU, she worked under the guidance of Dr. William H. Hartt, whose Sea Grant research involved acoustic detection of corrosion cracking in reinforced concrete. Currently, she is completing her master's degree in materials engineering at John Hopkins University.

Shaw heartily recommends similar fields of study for students beginning their university careers saying, "I really enjoy the work I do and enjoyed my work under Dr. Hartt."

Although she says she would probably have attained the same career level with or without the Sea Grant support, Shaw states, "However, I would not be working in the area of materials science and engineering - especially corrosion - which I greatly enjoy."

Peter F. Sheridan who received the B.A. and M.S. degrees at the University of Virginia in biology and marine science, does not encourage beginning university students to do the same. Sheridan says, "Little chance for growth or expansion, few jobs and low turnover rates, general lack of interest from the public and private funding sources. Best get into computers."

Nevertheless, Sheridan is now employed as a marine ecologist with the National Marine Fisheries Service in Galveston, Texas. While involved with his Ph.D. program at Florida State University, Sheridan worked under Dr. Robert Livingston on a project concerned with the potential impact of forestry operations on Apalachicola Bay. He credits the Sea Grant assistantship with making it possible for him to

attend graduate school as well as increasing his experiences in the marine science field.

In 1976, as a master's student in biology at Florida Institute of Technology (FIT), Diane Barile had the opportunity to work on a cooperative project with Dr. H.T. Odom of the University of Florida and Dr. John Morris, FIT. This research resulted in her master's thesis, "An environmental study of the Melbourne-Tillman Drainage District and an analysis of alternate land use plans for the City of Palm Bay, Florida."

Since that time, Barile has developed a trilogy of coastal educational materials, "Man Meets Coast," which includes a cartoon-type booklet, a coastal game and a slide-tape presentation appropriate for general audiences through high school. As a self-employed consultant as well as a faculty member at FIT, she has distinguished herself in Brevard County as a knowledgeable water resource management expert.

Last year, the East Central Florida Regional Planning Council honored Barile with their "Grand Award." She was recognized along with Epcot and the St. Johns River and Water Management District. More recently, she has been named to the Governor's Advisory Committee on the Coastal Zone.

Barile says, "The association with Florida Sea Grant formed the basis for my career as it exists today. The support both financially and professionally led me to a position based on a scientific foundation, built through skilled professional leadership and maintained through ongoing research and continued encouragement."



Diane Barile, foreground, with marine extension agent, Frank Lawler, left, and William Seaman, associate director of Sea Grant, in a 1977 visit to the Turkey Creek gauging station, near Palm Bay in the St. Johns River Water Management District.

Florida Sea Grant College

State University System of Florida

SEA GRANT STUDENT STATUS SHEET

Principal Investigator Reporting Section

Reporting date _____
Period of student status (from) _____ (to) _____
Name of student _____
Project Principal Investigator _____
Project Title and Sea Grant I.D. _____

Institution _____

Student Reporting Section

Current department/college/school _____
Major _____
Major Professor _____

Degree Information (during period of Florida Sea Grant-support)

Degree granted or sought _____
Degree completed? Yes _____ No _____
Thesis/dissertation title _____

Thesis copy sent to Sea Grant? Yes _____ No _____

Student degree history

Bachelors: Year _____ Degree _____
(B.S., B.A., etc.)
Institution _____
Any Sea Grant support? Yes _____ No _____
Name of Sea Grant program _____
(OVER)

Student degree history continued

Masters: Started, but did not complete _____
Completed: Year _____ Degree _____ (M.S., M.A., etc.)
Institution _____
Major _____
Major Professor _____
Thesis Title _____

Any Sea Grant Support? Yes _____ No _____
Name of Sea Grant Program _____

Doctoral: Started, but did not complete _____
Completed: Year _____ Degree _____
(Ph.D., M.D., J.D., etc.)
Institution _____
Major _____
Major Professor _____
Dissertation Yes _____ No _____
Any Sea Grant Support? Yes _____ No _____
Name of Sea Grant Program _____

Student Locator Information

Present home address

(number)	(street)	(apt. #)
(city)	(state)	(zip code)
(phone)		

APPENDIX 7. Survey Sheet for Use After
Students Graduate. DRAFT.

Florida Sea Grant Student Status Report

This questionnaire is an effort by Florida Sea Grant to determine location, career status and participants evaluation of Sea Grant educational efforts. The directory to be compiled will facilitate communication among Sea Grant students and the evaluation of comments will enable us to compare FSG's graduate career accomplishments with the Sea Grant programs in other states. All responses will be considered confidential and each person is urged to make a prompt and candid reply.

Full name: (please print) _____
(last) (first) (mid. init.)

Home address: _____
(street)

_____ (city) (state) (zip code)

Telephone: _____ (home) _____ (business)

Educational progress;

Please complete the following for all degrees earned. Check box if you had Sea Grant support during that time.

<u>Level</u>	<u>Degree</u>	<u>Year</u>	
Bachelor's	_____	_____	Institution _____
			Major _____
Master's	_____	_____	Institution _____
			Major _____
			Major Professor _____
			Thesis Title _____

Started, but did not complete
degree

Doctoral _____ Institution _____
Major _____
Major Professor _____
Dissertation Title _____

Started, but did not complete
degree

At which degree level did you receive Florida Sea Grant support?

Degree level _____
Year(s) (From) _____ (to) _____
Institution _____
Principal Investigator _____
Project Title _____

Did you receive support from any other Sea Grant Program during other degree
levels? Yes _____ No _____

Year _____
Institution _____
Sea Grant Program sponsor _____

First employment following Florida Sea Grant sponsored research:

Position title: _____
Employer: _____
Business address: _____

Did the experience gained in your Florida Sea Grant project contribute directly _____, partially _____, or not at all _____ to your being able to obtain your first job? If not, why? _____

If no longer in first employment, why? _____

Current employment if different from above:

Position title: _____

Employer: _____

Business address: _____

Did the experience gained in your Florida Sea Grant project contribute directly _____, partially _____, or not at all _____, to your being able to obtain your current job? If not, why? _____

General:

Would you recommend similar fields of study as yours for students beginning their university career?

Bachelor: Yes ___ No ___

Master's: Yes ___ No ___

Doctoral: Yes ___ No ___

Please comment:

In Your opinion would you have attained your present career level without Sea Grant support and experience? Yes ___ No ___

Please comment:

Thank you for your cooperation. Please return this questionnaire in the return addressed and stamped envelope to Dr. James C. Cato, Director; Florida Sea Grant College, Bldg 803 Room 4; University of Florida, Gainesville, FL 32611; 904/392-5870

