ANNUAL REPORT OF THE COMMITTEE ON GRADUATE STUDIES TO THE FACULTY OF ARTS AND SCIENCES

October 28, 1991

In its annual report in each of the past two years, this Committee has focused on a major development or theme. In 1989 we described the advantages of the interdisciplinary programs added in recent years, including American Studies (Ph.D., 1988), Applied Science (Ph.D., 1990), and the projected Master of Public Policy (MPP), which, we now can report, was approved by the State Council of Higher Education in May, 1991. Last year, we treated the advantages and potential dangers of collaborating with external agencies. This year we devote the first section to "Graduate Work in a Time of Recession: Desiderata and Opportunities." It is followed by five narrative sections: II. New Program; III. Periodic Evaluations; and IV. Diversity and Minority Recruitment; V. Awards; VI. Conclusion; and a statistical report, VII. Data on Students and Degrees.

I. Graduate Work in a Time of Recession: Desiderata and Opportunities

A. The Recession and the State Budgetary Shortfall: Consequences for Graduate Education

Like their colleagues in other units of the College, faculty responsible for graduate education in the arts and sciences faced the difficult challenge during the past year of maintaining academic quality in the face of severe reductions in state appropriations for higher education. These reductions, prompted by a shortfall of approximately $1.2 billion during the 1990-92 biennium, have made life difficult for faculty at all public institutions in Virginia. Nevertheless, the past year was also an exciting one for us. We moved aggressivley to realize the benefits of our basic strategy of developing interdisciplinary programs in areas of critical importance and we extended our relationships with external research organizations. This strategy brought benefits during this past year, as faculty in a number of programs secured new funded research opportunities for our students. We discuss the new opportunities later in this report. First, we describe some of the ways that the reductions mandated by Richmond, amounting to $3,973,000 or 12% of the College's Educational and General budget, have threatened the bases of excellence for graduate education.

Libraries and laboratories are central to the conduct of education at both the master's and doctoral levels. Yet, last year we witnessed a reduction of some $350,000 in the funds for the acquisition of library materials. We are pleased to report that this cut was restored in the current academic year, although it was partially off-set by a reduction of $150,000 in library operating funds. Likewise, as a result of a reduction of some 23% in departmental budgets, the provisions for basic laboratory supplies and equipment remains inadequate. Here too there has been some restoration in the current year; increases averaging 12% have been made in departmental budgets. In December 1990 graduate stipends, along with the salaries of other state employees, were reduced by 2%. The reductions in stipends were particularly painful as they affected the most vulnerable segment of our community, graduate students. The cancellation of plans to construct a new building for undergraduate science, Tercentenary Hall, has placed added pressure on our programs in the physical and computational sciences.

Another serious consequence of the reduction of the College's budget has been an erosion in the faculty's teaching power. The budget for part-time faculty was cut by approximately 50% in 1990-91. Further, it has been necessary to adopt a policy for the current year of replacing faculty on leave with adjuncts, not full-time faculty as has been our practice. There are currently ten fewer full-time faculty than last year, and this places a heavier burden on us all. Such cuts curtail the progress of graduate education at the university, notwithstanding the strong commitment of the President and the Provost to our programs.

Still, even as we cope with these unexpected reductions, we have continued to find new ways to improve the academic quality of what we do, raising external funds in support of our efforts and creating new linkages for our programs, both internally and externally. We are enrolling more students and their quality, as measured by traditional quantitative indicators and the award of such honors as Commonwealth Fellowships, continues to improve. Further, judged by their active pursuit of scholarship--the papers that they give at conferences and the articles that they publish--our students have compiled a record that reflects expanding scholarly commitments and ambitions, rather than a declining or flat economy. This is, then, a somewhat paradoxical time. The scholarly commitments of our students, nurtured and inspired by this faculty, coupled with the opportunities for new programmatic linkages, give us cause for optimisim, even as we sound the alarm in response to the state's declining support.

B. Desiderata

1. Space. The cancellation of plans to construct the new science building have exacerbated the serious space problems for our departments in the mathematical, computational, and laboratory sciences. Perhaps the best way to realize the seriousness of the problem is to note that since the 1968-69 academic year, the undergraduate population at the College has increased from 3,477 to 5,233 and the graduate student population has grown proportionately. We have added three Ph.D. programs, two in the sciences, and yet the space available for the physical sciences has actually decreased. Chemistry moved from what is now Tyler Hall to smaller accommodations in Rogers; Physics lost a quarter of its space when Geology moved into the second floor of Small Hall and a portion of the basement. The new Physics Department library has added some space for faculty and graduate student offices, but the work of both faculty and students is seriously hampered by a deficit in laboratory space. Further, there is no room within the building for growth. Even when the Religion Department leaves Rogers Hall this winter, the physical sciences will have less total space available and certainly less space per-student or per-faculty member than they had twenty years ago. In fact, the Chemistry Department has twice as many undergraduate majors and 25% more faculty than twenty years ago. Research programs are cramped and there is concern in the department that using additional space in Rogers for Applied Science might well jeopardize on-going programs.

Perhaps the shortage of space has had its most serious consequences for the Applied Science Program, which lacks a meaningful amount of space of its own. For lack of space, the program has been unable to accept externally-funded post-doctoral research associates, despite the need for increased teaching and research power and the financial advantages of these arrangements. It may be necessary to begin curtailing admissions in certain sub-specialties within the

program, especially in polymer chemistry, simply because of a lack of laboratory space on campus. The situation is complicated by new security policies at NASA-Langley, which restrict to American citizens access to the Center. In the short-run, it will be necessary to supply modular laboratory facilities for new faculty and students. What is true for William and Mary's graduate programs is true elsewhere in the Commonwealth: our most important need is for additional space, particularly in the sciences. We have communicated these needs to the College's central administration, which will seek to restore funding for Tercentenary Hall in the next legislative session.

2. Faculty Positions. As a consequence of the recession, the special appropriation from the last General Assembly of approximately $700,000 per-year in operating funds and nine new positions for the Applied Science program was withdrawn. However, the College has submitted a budget initiative to restore this funding to the State Council of Higher Education. The new positions would be allocated to two central subject areas within the program, polymeric materials and non-destructive testing, and to an area of increasing importance to many of the sciences, scientific computing. We will seek to enhance the support on campus for scientific computing as an interdisciplinary tool. Because of the power of new computing hardware and the sophistication of new programming strategies, it is now possible to simulate and model complex phenomena in ways that were not possible just a few years ago.

Many of our departments are operating at staffing levels well below even the State's guidelines. The Psychology Department, for instance, which offers the doctorate through the Virginia Consortium for Professional Psychology, a two-year pre-doctoral program, and a large undergraduate program, is staffed at 55% of guidelines. Other departments face similar enrollment pressures. In this environment we are especially concerned that if the College is unable to replace senior faculty who retire under the state's early retirement program, there will be serious consequences for all of our programs. The Committee has written to the Dean and Provost describing the potential problems of the early retirement program as they apply to graduate work. Restoration of positions that have been lost and retention of positions that are threatened is essential if this faculty is to have the teaching and research power to meet its commitments at all levels.

3. Stipends. In past years we have identified the need for competitive stipends as our highest priority, and it remains of critical importance. Essentially the budget for graduate aid has remained unchanged for 1991-92. Some additional funds, made available through a tuition increase mandated for that purpose in Richmond, were committed to Applied Science. Minimal commitments to the new Public Policy Program were met through modest additional funding. Because tuition did increase, however, our programs suffered a net decrease in graduate aid. Nevertheless, we are grateful to the Provost and the President for their efforts to maintain graduate aid at the same dollar level as the previous year, despite the College's budget shortfalls. Late in the year the Provost added several new assistantships to make up for shortfalls in the budgets of computer science and physics. The provision of adequate amounts of graduate aid remains a major concern for all our programs.

4. Library Materials, Equipment, and Operating Funds and Support. As a consequence of the budget reductions noted above, funding for the library has

fallen to 63% of state guidelines in 1990-91, from 100% in 1986-87. Books and journals that the faculty has identified as being important to our work are not being added, and this will continue to exact a price on all our programs. There is also a need for a mechanism to supply funds on a continuing basis for the repair of laboratory instruments. As noted, the cuts in base budgets have placed a particularly severe strain on such "materials intensive" departments as biology and chemistry. The deans' office developed a formula which gave special weight to the needs of these departments in the restoration of operating funds in the current year. The cuts in the College's budget have also meant that our valued support personnel, departmental secretaries, laboratory specialists, and computer systems experts, have been forced to do more with less.

5. Summary. The decision to cut the College's budget by over 12%, the cancellation of the funding initiative for the Applied Science Program, and the delay in the construction of a new building for science, have brought serious problems for our graduate programs. We have been forced to cope with shortages in research space, faculty positions, graduate aid, and library and laboratory materials. Unless additional space is available and funds for materials are provided, it will be necessary to begin restricting admissions.

C. Opportunities

Despite the difficulties listed above, funding problems that William and Mary shares with many institutions in Virginia and across the nation, we feel a sense of excitement and opportunity as we look to the future. Since 1986 we have added three new doctoral programs--computer science, American studies, and applied science--and the new master's in public policy. These programs have strengthened our educational offerings at all levels and opened exceptional opportunities, which can best be described in terms of the intellectual, research, and programmatic connections or linkages that they make possible, both within the institution and without.

1. Internal Linkages. The new interdisciplinary doctoral programs make possible new relationships between master's and doctoral education at William and Mary. In a number of fields, strong disciplinary education at the master's level followed by an interdisciplinary doctoral program makes academic sense. We are moving to implement this principle. For instance, cooperative arrangements between the master's program in English and the American studies doctoral program have been developed, and we are in the process of developing others. Several graduates of the anthropology program have enrolled as doctoral students in American studies. Similarly, graduate students from the chemistry master's program have enrolled in the Aplied Science program. A committee of faculty from the Biology Department is working with colleagues from the School of Marine Science to develop clear procedures which enable students to earn the master's in biology and follow this with the Ph.D. in marine science. The Public Policy Program, centered in this faculty, works cooperatively with the professional schools and has developed a joint program with the Law School. It enables a student to earn a law degree (J.D.) and the public policy degree (M.P.P.) within four years, as opposed to the five years that the programs would take separately. Certainly, the provision of additional courses through the new programs has strengthened all our offerings, as has the development of a larger, more diverse graduate student body. During the next few years, graduate directors and program

committees will continue to develop flexible organizational structures to enable students to take advantage of strengths in other departments and programs.

The addition of graduate programs in new fields has expanded the opportunities for undergraduates. For instance, this fall the Applied Science program has added two new courses, "Introduction to Applied Mathematics" and "Polymer Science I." At least half of the 40 students enrolled are undergraduates. The American Studies program initiated a highly succesful course for undergraduates on the 1960s, which enrolled approximately 160 students. The graduate program in public policy has made available some of its new courses to advanced undergraduates and to graduate students from the schools. Many other such examples of sharing of resources could be cited. Throughout the university graduate students and undergraduates learn together in classes, on research projects, and informally, and these connections strengthen the academic opportunities for all our students.

2. External Linkages. As we have developed new linkages within the university, so too we have been successful in strengthening old alliances and forging new ones with external agencies. American Studies has developed internships with the Valentine Museum and the Virginia Historical Society in Richmond, the Mariners' Museum in Newport News, the Yorktown Victory Center, Jamestown Settlement, and Colonial Williamsburg. In addition to providing essential funding for our students, these internships offer them valuable professional experiences. Similarly, the Physics Department has strengthened its relationship with the major effort at NASA-Langley in non-destructive testing. Two new students have elected to conduct research there. Both are supported with funds from the aging aircraft program. A graduate student in physics has elected to conduct his doctoral research at the Atmospheric Sciences Branch of NASA-Langley. His support comes from NASA's Global Climate Change program. During the past year Applied Science has strengthened its relationship with the polymeric materials branch at NASA, which is providing funds for graduate student support, faculty research, and the teaching and research of a post-doctoral fellow. Their research efforts are aimed at developing new materials to withstand the rigors of the space environment. CEBAF, which is supporting students from both Applied Science and Physics, is now developing a major new program of graduate student support. Graduate students in sociology are investigating the efficacy of various treatment strategies for alcoholism at the Peninsula Agency for Alcoholism. Public Policy students are being supported by a grant from the National Center for State Courts to develop standards for trial court performance. Graduate students from computer science are working at ICASE on programming problems for the next generation of massively parallel computers. These are only some of the new funded internships that we have developed for our graduate programs.

As even the brief listing above demonstrates, graduate students are conducting important research on some of the basic problems facing our planet and this nation: global warming, utilizing the power of new computer architectures, aging aircraft, substance abuse and its impacts on the legal and mental health systems, racial issues in mental health treatment, developing new materials, and formulating new strategies of cultural interpretation and criticism which are sensitive to basic issues of race, class, and gender. Further, CEBAF is developing plans for two very powerful free electron lasers, which will offer

unmatched opportunities for materials science research. The initiative in global climate change at NASA-Langley is scheduled to grow as our country faces the severity of the related problems of atmospheric pollution and global warming. These areas, which pose fundamental research questions, represent both a challenge and an opportunity for William and Mary students, graduate and undergraduate alike. There is a critical need for well-trained and imaginative teachers and researchers in these fields. Our graduate programs, strengthened by their linkages with external agencies, are producing students capable of addressing these problems.

We recognize that because of the constraints on state spending we cannot simply look to Richmond to provide all of the funds needed for our graduate programs. Therefore, we seek to take maximum possible advantage of the opportunities provided by such federal research centers as NASA-Langley and CEBAF. These laboratories promise much for Virginia, but that promise will be realized only if Virginia makes an appropriate investment in its educational system, including supplying universities with the space and basic operating funds which are necessary if the universities are to enter into mutually beneficial research partnerships with federal agencies. We agree with the Commission on the University of the 21st Century's assertion that "The cost of research and the complexities of evaluating proposed research make the role of the state necessarily catalytic and supplemental, rather than the primary source of funding" (p. 10). We therefore call upon the state to supply as a catalyst the space, faculty positions, and basic educational operating funds; we will secure the primary and continuing funds for research from federal, industrial, and other non-state sources.

D. Conclusion. We have identified some of the serious problems which, because of the recession, budget shortfall, and funding decisions in Richmond threaten our programs. To address these problems, we must look to Richmond for a restoration of base funding, the construction of new space for teaching and research in the sciences, and the provision of adequate resources for our laboratories and libraries. At the same time, we recognize that because of its proximity to important research centers and the quality of its students and faculty, the College is capable of attracting external funding which makes possible the development of imaginative graduate programs directed at the most essential problems and questions that our society confronts as it enters a new century.

II. New Program

Public Policy. As reported above, the State Council approved the College's proposal to initiate a two-year program leading to the degree of Master of Public Policy. The scheduled size of the program is a class of twenty-five students per-year. Because approval was granted late in the year, the Public Policy Committee did not conduct a full-scale recruiting effort. Nevertheless, we have enrolled nineteen strong students in the program, which by action of the Board of Visitors is known as part of the Thomas Jefferson Program in Public Policy.

III. Periodic Evaluations

Because of the budget cuts, no new external evaluations of our programs were initiated. However, the Committee did complete its report on the M.A. in Government, an evaluation which had been undertaken the year before. Copies of the report may be obtained in the graduate office and the College archives.

IV. Diversity and Minority Recruitment

All of our programs are greatly enriched through a diverse student body. The graduate dean and individual programs actively recruit students from groups which traditionally have been underrepresented in graduate work. These include women in such fields as mathematics and physics and African-Americans, Hispanics, and Native-Americans. This year our efforts were greatly aided by the award of $92,000 in new funds from the Patricia Roberts Harris Program of the United States Department of Education. These funds will support students in American studies, computer science, physics, psychology, and clinical psychology. In addition, minority students receive support from two programs administered by the State Council, the Commonwealth Fellowship program, designated primarily for black Virginians, and the Graduate Dean's Fellowship, intended to support students from any state. We encourage all members of the faculty to join us in recruiting minority students for our programs.

This year the graduate dean established a committee of minority students to work with him and the graduate directors in developing a campus climate which is supportive of their efforts. Members of the Committee will help in recruiting students from underrepresented groups for our programs and be available to encourage undergraduates and high school students to consider graduate studies in the arts and sciences.

V. Awards

In 1991 two doctoral students, Theodore Delaney from History and Valerie P. Gill from American Studies, were selected as Commonwealth Fellows by the State Council. Each has received an award of $5,000. Mr. Delaney earned the master's in history at William and Mary, and is serving as a Minority Faculty Fellow at Washington and Lee. Ms. Gill earned the master's in English at the College before joining the American Studies doctoral program.

Two doctoral students, Dan A. Chrisman, Jr., computer science, and Michael B. Glasgow, applied science, have received $5,000 awards from the Virginia Aerospace Consortium.

VII. Conclusion: Undergraduate and Graduate Linkages

We have described both the difficulties that we face and the opportunities for scholarly growth and development that we are moving rapidly to realize. In concluding, we would like to stress the essential linkage between undergraduate and graduate education. A major concern in the deans' office and throughout this faculty is to expand the research opportunities for our undergraduates. In a

world in which knowledge changes rapidly, we can best prepare our undergraduates by helping them to learn how to learn, how to ask scholarly questions and to develop research methodologies that will lead both to answers and new questions. From this perspective, graduate and undergraduate education are allied. Increasingly we see the formation of research teams involving graduate students, undergraduates, faculty, and post-doctoral students working on common problems. In the physics department, for instance, a team of undergraduates and graduate students works with a William and Mary faculty member and a distinguished associate from the University of Wuppertall in West Germany in developing new superconducting materials. We might cite other such teams in other departments, where research on questions of fundamental significance links together faculty, graduate, and undergraduate students. Despite the adverse budgetary climate, this faculty and its students, both graduate and undergraduate, are taking advantage of extraordinary opportunities in research, education, and public service.

VII. DATA ON STUDENTS AND DEGREES

A. ADMISSIONS - Fall Semester 1991

DEPARTMENT	[1]NUMBER APPLICANTS	NUMBER ACCEPTED	NUMBER MATRICULATED
AMERICAN STUDIES	122	49	21
ANTHROPOLOGY	40	17	11
APPLIED SCIENCE	18	13	9
BIOLOGY	14	9	6
CHEMISTRY	15	9	7
COMPUTER SCIENCE	190	46	25
ENGLISH	81	36	16
GOVERNMENT	82	26	11
HISTORY	140	38	17
MATHEMATICS	73	39	7
PHYSICS	211	24	12
PSYCHOLOGY	62	14	7
PUBLIC POLICY	38	33	19
SOCIOLOGY	20	12	4
TOTALS	1106	365	172
PSY.D. PROGRAM[2]	208	14	11

[1]Figures based on completed applications for September admission as reported by each graduate department.

[2]Total in Consortium.

B. AVERAGE UNDERGRADUATE GRADE POINT AVERAGE OF ENTERING STUDENTS (4.0 SCALE)

DEPARTMENT	FALL 1989	FALL 1990	FALL 1991
AMERICAN STUDIES	3.23 (14 of 15)	3.29 (22 of 26)	3.39 (20 of 21)
ANTHROPOLOGY	3.35 (7 of 8)	3.20 (11 of 13)	3.30
APPLIED SCIENCE	----	3.18 (4 of 6)	3.57 (7 of 9)
BIOLOGY	3.04	3.20	2.97
CHEMISTRY	2.73 (6 of 7)	2.78	2.90
COMPUTER SCIENCE	3.28 (12 of 13)	3.63	3.43
ENGLISH	3.32	3.38	3.43 (15 of 16)
GOVERNMENT	3.20 (6 of 8)	3.33	3.16 (10 of 11)
HISTORY	3.40 (20 of 22)	3.52 (18 of 20)	3.66
MATHEMATICS	3.08 (9 of 11)	3.33 (7 of 8)	3.38
PHYSICS	3.35 (10 of 11)	3.41 (8 of 10)	3.18 (11 of 12)
PSYCHOLOGY	3.68	3.37	3.26
PSY.D. PROGRAM	3.52	3.57	3.44
PUBLIC POLICY	----	----	3.19 (18 of 19)
SOCIOLOGY	3.25 (6 of 7)	3.16	3.74

C. AVERAGE GRADUATE RECORD EXAMINATION SCORES OF ENTERING STUDENTS

DEPARTMENT	FALL 1990 VERB	MATH	ANALY	ADV	FALL 1991 VERB	MATH	ANALY	ADV
AMERICAN STUDIES	648 (18 of 26)	548 (18 of 26)	594 (18 of 26)	---	638 (19 of 21)	553 (19 of 21)	626 (18 of 21)	---
ANTHROPOLOGY	544 (7 of 13)	541 (7 of 13)	597 (7 of 13)	---	607 (7 of 11)	633 (7 of 11)	657 (6 of 11)	---
APPLIED SCIENCE	481 (3 of 6)	440 (3 of 6)	566 (3 of 6)	NRD	512	762	613	---
BIOLOGY	584	592	630	578 (36%)	580 (5 of 6)	648 (5 of 6)	668 (5 of 6)	664 (62%) (5 of 6)
CHEMISTRY	NRD	NRD	NRD	NRD	---	---	---	---
COMPUTER SCIENCE	668	740	750	NRD	540	678	626	661 (68%) (9 of 25)
ENGLISH	624	553	626	508 (41%)	676 (15 of 16)	591 (15 of 16)	645 (15 of 16)	578 (68%) (13 of 16)
GOVERNMENT	551 (11 of 12)	574 (11 of 12)	597 (11 of 12)	NRD	603	573	648	---
HISTORY	742	614	651	559 (75%) (18 of 20)	638	562	643	549 (72%) (14 of 17)
MATHEMATICS	566 (6 of 8)	698 (6 of 8)	615 (6 of 8)	NRD	485 (6 of 7)	715 (6 of 7)	687 (6 of 7)	NRD
PHYSICS	522	751	665	724 (71%) (9 of 10)	543 (9 of 12)	730 (9 of 12)	631 (8 of 12)	716 (70%) (8 of 12)
PSYCHOLOGY	576	577	615	574 (62%) (9 of 13)	517	536	596	563 (58%) (4 of 7)
PSY.D.	567	557	590	623 (79%)	622	565	604	600 (70%)
PUBLIC POLICY	---	---	---	---	571 (10 of 19)	641 (10 of 19)	642 (10 of 19)	---
SOCIOLOGY	542	502	596	---	543	578	588	---

D. REGISTERED REGULAR & PROVISIONAL GRADUATE STUDENTS[1]
Fall 1989 to Fall 1991

DEPARTMENT	FALL 1989	SPRING 1990	FALL 1990	SPRING 1991	FALL 1991
AMERICAN STUDIES	33	31	43	33	42
ANTHROPOLOGY	12	16	17	16	14
APPLIED SCIENCE	0	1	6	8	16
BIOLOGY	16	18	18	18	16
CHEMISTRY	8	10	10	8	10
COMPUTER SCIENCE	56	61	57	60	68
ENGLISH	23	24	27	26	24
GOVERNMENT	11	11	19	15	20
HISTORY	55	54	59	57	52
MATHEMATICS	17	16	20	11	12
PHYSICS	48	46	47	45	52
PSYCHOLOGY	18	16	19	19	19
PUBLIC POLICY	--	--	--	--	19
SOCIOLOGY	11	10	12	11	9
A & S TOTALS	308	314	354	327	373
PSY.D. PROGRAM[2]	50	48	51	45	53

NOTE: The Computer Science department now enrolls most of the students listed previously under Applied Science. The Applied Science program now enrolls interdisciplinary students in the sciences.

[1]Totals include both full-time and part-time registration.

[2]Total in Consortium.

E. GRADUATE DEGREES CONFERRED 1990-91

DEPARTMENT	DEGREE	AUGUST 1990	DECEMBER 1990	MAY 1991	TOTAL
AMERICAN STUDIES	M.A.	3	9	2	14
	Ph.D.	0	0	0	0
ANTHROPOLOGY	M.A.	1	2	5	8
APPLIED SCIENCE	M.S.	1	0	0	1
	Ph.D.	0	0	0	0
BIOLOGY	M.A.	3	0	1	4
CHEMISTRY	M.A.	0	3	1	4
	M.S.	0	0	0	0
COMPUTER SCIENCE	M.S.	1	7	7	15
	Ph.D.	0	0	0	0
ENGLISH	M.A.	9	5	4	18
GOVERNMENT	M.A.	3	1	5	9
HISTORY	M.A.	1	6	6	13
	Ph.D.	0	0	2	2
MATHEMATICS	M.A.	0	0	0	0
	M.S.	1	7	2	10
PHYSICS	M.A.	0	0	0	0
	M.S.	0	0	8	8
	Ph.D.	1	1	4	6
PSYCHOLOGY	M.A.	1	2	2	5
	Psy.D.	4	4	0	8
PUBLIC POLICY	M.P.P.	0	0	0	0
SOCIOLOGY	M.A.	0	4	1	5
TOTALS	M.A.	21	32	27	80
	M.S.	3	14	17	34
	Ph.D.	1	1	6	8
	Psy.D.	4	4	0	8

E. GRADUATE DEGREES CONFERRED 1990-91 (cont'd.)

TOTAL NUMBER OF DOCTORATES CONFERRED AUGUST 1990 THROUGH MAY 1991

Arts and Sciences	- 8 Ph.D., 8 Psy.D.
Education	- 24 Ed.D.
Marine Science	- 6 Ph.D.

M.A. IN EDUCATION[1]

Secondary School Teaching - 24

[1]Degree candidates for the M.A. in Education (Secondary School Teaching) take 12 hours of course work in Arts and Sciences.

F. GRADUATE DEGREES AWARDED DURING THE LAST 10 YEARS[1]

(August - June)

DEPARTMENT	PROGRAM INITIATED	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89	89-90	90-91	8/91	TOTAL SINCE AUG. 1981
AMERICAN STUDIES	1982-MA			1	4	5	2	3	4	11	14	1	45
	1988-PhD								0	0	0	0	0
ANTHRO-POLOGY	1979-MA	2	3	5	1	4	8	4	8	9	8	2	54
APPLIED SCIENCE	1970-MS	9	9	10	1	2	0	0	0	0	1	0	32
	1990-PhD										0	0	0
BIOLOGY	1963-MA	11	6	5	8	7	2	7	5	10	4	1	66
CHEMISTRY	1964-MA/MS	6	1	2	9	5	5	4	5	7	4	1	49
COMPUTER SCIENCE	1984-MS				9	10	19	10	15	19	15	0	97
	1986-PhD						0	1	0	3	0	2	6
ENGLISH	1970-MA[2]	9	6	7	9	5	8	9	10	9	18	4	94
GOVERNMENT	1966-MA	5	6	1	1	5	3	6	8	8	9	5	57
HISTORY	1955-MA	6	10	7	11	5	14	3	7	16	13	3	105
	1967-PhD	3	2	3	2	1	4	1	1	5	2	0	24
MATHEMATICS	1961-MA/MS	3	5	6	6	4	7	2	9	5	10	1	58
PHYSICS	1959-MA/MS	6	5	10	11	9	5	8	6	14	8	1	83
	1964-PhD	5	7	6	5	6	4	5	3	6	6	1	54
PSYCHOLOGY	1953-MA	5	7	2	9	5	4	6	3	11	5	1	58
	1978-PsyD		5	9	4	8	8	8	10	14	8	2	76
SOCIOLOGY	1967-MA	4	6	2	5	2	3	4	6	5	5	0	42
A&S TOTALS:	MA-MS	66	64	58	84	68	80	76	86	124	114	20	840
	PhD	8	9	9	7	7	8	7	4	14	8	3	84
	PsyD		5	9	4	8	8	8	10	14	8	2	76

[1]See Table E for M.A. in Education degrees.

[2]Earlier Program suspended in 1963.