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

October 22, 1986

As is customary, this report is divided into three sections: I. Comments, II. Data on Students and Degrees, and III. Curriculum Changes.

I. COMMENTS

New Doctoral Programs

During the past year the College formally initiated a Ph.D. program in Computer Science, submitted to the State Council of Higher Education a proposal for offering the Ph.D. in American Studies to begin in 1988, and notified the State Council of its intention to submit a proposal for a Ph.D. in Applied Science, the program to commence in 1990.

On June 4, 1986 the Council of Higher Education gave final approval to the College to initiate the Ph.D. in Computer Science in the fall semester of 1986. In anticipation of this action, the Computer Science Department made two senior appointments to its faculty, began the process of acquiring state-of-the-art computing equipment, and admitted advanced graduate students. The Department now has 8 Ph.D. and 60 M.S. students. The program is off to an excellent start.

In June, 1986 the College submitted to SCHEV a formal proposal (Form I) to begin doctoral work in American Studies in fall 1988. The Council is expected to act on this proposal at its November or December meetings.

Also in June the College submitted to SCHEV a preliminary proposal (Form 2) for initiating Ph.D. work in Applied Sciences. Planning for the program was undertaken in the spring by an ad hoc committee chaired by the Dean of Graduate Studies. The group included faculty from the Departments of Computer Science, Chemistry, Physics, Psychology, Geology, and Marine Science. As currently envisaged, the program would focus on Materials and Measurement Science, especially Ultrasonics and Acoustics, Nondestructive Evaluation, Electromagnetic-Dialectric Sensing, X-ray Analysis, Reconstructive Imaging and Metals, Polymers, Composites, and Inorganic Materials. The program would be offered in association with NASA-Langley, CEBAF and other advanced technology institutions on the Virginia peninsula.

On September 18 and 19 Professor Arden Sher, of Stanford University and SRI International, visited the College as a consultant in Applied Science. A former member of the William and Mary Physics Department, Professor Sher will submit a report which will guide the College in developing its Applied Science program.

In association with CEBAF, the Physics Department will offer a doctoral program in Accelerator Physics. The program will be initiated in the 1987-88 academic year.

The College has entered into preliminary discussions with Eastern Virginia Medical School and Old Dominion University regarding possible participation by William and Mary in a program leading to the Ph.D. in biomedical sciences. Currently EVMS and ODU offer the degree jointly. Representatives of these two institutions feel that the program would be stronger with the participation of William and Mary. Professors Wiseman of Biology and Coleman of Chemistry are the William and Mary representatives on the ad hoc committee reviewing the program.

New Master's Program

A committee chaired by Professor James Livingston, Religion, is developing a proposal for a program leading to the degree of Master of Liberal Studies (M.L.S.). Other members of the committee are William Cobb, Philosophy, James Whittenburg, History, John McKnight, Physics, and Edgar Williams, Music.

Program Evaluations

Program evaluations are scheduled so that each program is evaluated about every six years. Since the last report, evaluations of the graduate programs in the Departments of Biology, Physics and American Studies have been completed. Plans are underway for an evaluation of the History program. Reports on all completed evaluations are available in the Swem Library archives and in the graduate office.

Graduate Stipends

The standard stipend has been raised to $5,000. Through special arrangements, departments in such high-demand fields as computer science and physics are able to award a larger stipend. Nevertheless, in many fields the award at William and Mary remains significantly below that offered by institutions with which we compete for able students.

II. DATA ON STUDENTS AND DEGREES

A. ADMISSIONS - Fall Semester 1986

DEPARTMENT	*NUMBER APPLICANTS	NUMBER ACCEPTED	NUMBER MATRICULATED
AMERICAN STUDIES	30	19	10
ANTHROPOLOGY	23	19	11
APPLIED SCIENCE	0	0	0
BIOLOGY	39	9	8
CHEMISTRY	18	10	4
COMPUTER SCIENCE	81	48	25
ENGLISH	35	26	12
GOVERNMENT	36	14	6
HISTORY	107	25	23
MATHEMATICS	40	36	5
PHYSICS	78	22	10
PSYCHOLOGY	26	8	8
SOCIOLOGY	15	8	5
TOTALS	528	244	127
PSY.D. PROGRAM**	267	38	9

*Number of graduate applications received in the graduate office and application fees paid or waived, for September admission only.

**Total in Consortium.

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

DEPARTMENT	FALL 1984	FALL 1985	FALL 1986
AMERICAN STUDIES	3.40 (13 of 14)	3.31 (8 of 12)	3.29
ANTHROPOLOGY	3.32 (10 of 11)	3.16	2.76 (9 of 11)
APPLIED SCIENCE			
BIOLOGY	3.05	3.10	2.90
CHEMISTRY	3.05	2.75	2.90
COMPUTER SCIENCE	3.10	2.90	3.16 (24 of 25)
ENGLISH	3.24	3.35	3.10 (11 of 12)
GOVERNMENT	3.34 (7 of 10)	3.74 (2 of 3)	3.19 (4 of 6)
HISTORY	3.45	3.44 (20 of 21)	3.52 (19 of 23)
MATHEMATICS	2.87 (1 of 2)	3.16	3.24
PHYSICS	3.18 (10 of 12)	3.25 (5 of 8)	2.97
PSYCHOLOGY	3.31	3.41	3.56
PSY.D. PROGRAM	3.58	3.23	3.48
SOCIOLOGY	3.01	2.77	2.98

C. AVERAGE GRADUATE RECORD EXAMINATION SCORES OF ENTERING STUDENTS

DEPARTMENT	FALL 1985 VERB	FALL 1985 MATH	FALL 1985 ADV	FALL 1986 VERB	FALL 1986 MATH	FALL 1986 ADV
AMERICAN STUDIES	683 (8 of 12)	541 (8 of 12)	500 (1 of 12)	627 (9 of 10)	563 (9 of 10)	---
ANTHROPOLOGY	590 (7 of 8)	501 (7 of 8)	---	587 (6 of 11)	482 (6 of 11)	---
APPLIED SCIENCE	---	---	---	---	---	---
BIOLOGY	560 (10 of 11)	589 (10 of 11)	662 (63%) (10 of 11)	580 (7 of 8)	601 (7 of 8)	657 (61%) (7 of 8)
CHEMISTRY	490 (1 of 8)	580 (1 of 8)	490 (9%) (1 of 8)	575 (2 of 4)	665 (2 of 4)	600 (45%) (1 of 4)
COMPUTER SCIENCE	567 (14 of 18)	644 (14 of 18)	630 (60%) (4 of 18)	540 (23 of 25)	663 (23 of 25)	653 (68%) (4 of 25)
ENGLISH	647	539	556 (60%) (9 of 10)	631 (11 of 12)	511 (11 of 12)	554 (60%) (11 of 12)
GOVERNMENT	510 (1 of 3)	580 (1 of 3)	500 (64%) (1 of 3)	570 (5 of 6)	602 (5 of 6)	560 (85%) (2 of 6)
HISTORY	620	571	518 (56%) (18 of 21)	625 (22 of 23)	579 (22 of 23)	543 (67%) (21 of 23)
MATHEMATICS	470	615	570 (23%) (1 of 2)	543 (4 of 5)	663 (4 of 5)	525 (14%) (2 of 5)
PHYSICS	605 (6 of 8)	680 (6 of 8)	568 (31%) (6 of 8)	520 (7 of 10)	740 (7 of 10)	655 (57%) (6 of 10)
PSYCHOLOGY	594	563	607 (74%) (6 of 9)	556	546	590 (67%) (6 of 8)
PSY.D. PROGRAM	646	594	658 (89%)	611	586	624 (79%)
SOCIOLOGY	515 (2 of 3)	535 (2 of 3)	---	490	452	460 (60%) (1 of 5)

D. REGISTERED REGULAR & PROVISIONAL GRADUATE STUDENTS*
Fall 1984 to Fall 1986

DEPARTMENT	FALL 1984	SPRING 1985	FALL 1985	SPRING 1986	FALL 1986
AMERICAN STUDIES	18	22	16	17	18
ANTHROPOLOGY	15	15	13	12	14
APPLIED SCIENCE	1	3	1	1	1
BIOLOGY	21	20	20	19	23
CHEMISTRY	5	3	9	10	9
COMPUTER SCIENCE	48	47	56	53	67
ENGLISH	16	16	21	16	16
GOVERNMENT	15	12	5	7	9
HISTORY	41	38	46	43	51
MATHEMATICS	13	11	11	9	12
PHYSICS	42	43	38	36	41
PSYCHOLOGY	15	15	16	15	14
SOCIOLOGY	8	8	7	8	8
A & S TOTALS	258	253	259	246	283
PSY.D. PROGRAM**	36	50	57	53	59

*Totals include both full-time and part-time registration.

**Total in Consortium.

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.

E. GRADUATE DEGREES CONFERRED 1985-86

DEPARTMENT	DEGREE	AUGUST 1985	DECEMBER 1985	MAY 1986	TOTAL
AMERICAN STUDIES	M.A.	0	3	2	5
ANTHROPOLOGY	M.A.	1	1	2	4
APPLIED SCIENCE	M.S.	2	0	0	2
BIOLOGY	M.A.	4	1	2	7
CHEMISTRY	M.A.	1	1	3	5
	M.S.	0	0	0	0
COMPUTER SCIENCE	M.S.	2	5	3	10
ENGLISH	M.A.	1	0	4	5
GOVERNMENT	M.A.	3	2	0	5
HISTORY	M.A.	1	2	2	5
	Ph.D.	0	1	0	1
MATHEMATICS	M.A.	0	0	0	0
	M.S.	0	3	1	4
PHYSICS	M.A.	0	0	0	0
	M.S.	0	6	3	9
	Ph.D.	3	0	3	6
PSYCHOLOGY	M.A.	1	0	4	5
	Psy.D.**	2	4	2	8
SOCIOLOGY	M.A.	0	0	2	2
	M.A.	12	10	21	43
	M.S.	4	14	7	25
	Ph.D.	3	1	3	7
	Psy.D.**	2	4	2	8

*M.A. IN EDUCATION
(Secondary School Teaching)

Biology	2
Classical Studies	1
English	3
History	2
Mathematics	2
Museum Education	4
Secondary School Teaching	0
Social Studies	0
Physical Education	0

TOTAL NUMBER OF DOCTORATES CONFERRED
AUGUST 1985 THROUGH MAY 1986

Arts and Sciences	- 7 Ph.D., 8 Psy.D.**
Education	- 21 Ed.D.
Marine Science	- 8 Ph.D.

*Degree candidates for the M.A. in Education (Secondary School Teaching) take 12 hours of course work in Arts and Sciences.
**Total in the Consortium.

F. GRADUATE DEGREES AWARDED DURING THE LAST 10 YEARS*
(August - June)

DEPARTMENT	PROGRAM INITIATED	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86	AUG. 1986	TOTAL SINCE AUG. 1976
AMERICAN STUDIES	1982-M.A.							0	1	4	5	0	10
ANTHROPOLOGY	1978-M.A.			0	0	2	2	3	5	1	4	0	17
APPLIED SCIENCE	1970-M.S.	15	13	6	7	14	9	9	10	1	2	0	86
BIOLOGY	1963-M.A.	11	9	7	10	9	11	6	5	8	7	0	83
CHEMISTRY	1964-M.A./M.S.	3	3	0	2	2	6	1	2	9	5	4	37
COMPUTER SCIENCE	1984-M.S. 1986-Ph.D.									9	10	6	25
ENGLISH	1970-M.A.**	7	7	14	2	13	9	6	7	9	5	1	80
GOVERNMENT	1966-M.A.	5	4	5	3	4	5	6	1	1	5	1	40
HISTORY	1955-M.A.	9	6	11	8	5	6	10	7	11	5	1	79
	1967-Ph.D.	3	3	1	3	1	3	2	3	2	1	1	23
MATHEMATICS	1961-M.A./M.S.	2	2	4	3	5	3	5	6	6	4	0	40
PHYSICS	1959-M.A./M.S.	9	5	12	3	9	6	5	10	11	9	0	79
	1964-Ph.D.	2	4	6	2	2	5	7	6	5	6	0	45
PSYCHOLOGY	1953-M.A.	4	5	1	3	5	5	7	2	9	5	1	47
	1978-Psy.D.***							5	9	4	8	1	27
SOCIOLOGY	1967-M.A.	6	4	4	4	4	4	6	2	5	2	0	41
A & S TOTALS:	M.A./M.S.	71	58	64	45	72	66	64	58	84	68	14	664
	Ph.D.	5	7	7	5	3	8	9	9	7	7	1	68
	Psy.D.***							5	9	4	8	1	27

*See Table E for M.A. in Education degrees.
**Earlier program suspended in 1963.
***Total in the Consortium.

III. CURRICULUM CHANGES
Approved 1985-86

ANTHROPOLOGY

NEW COURSES: 515. Artifacts. Spring (3). Mr. Barka.

An examination of Euro-American ceramics, glassware, tobacco pipes and other portable artifacts of the period c.1600-1900 A.D. Students will learn how to date, identify, and analyze classes of objects from historic archaeological contexts, as well as to obtain information pertaining to technology, function, social and economic status, etc.

519. Archaeology of the Near East. Fall (3). Ms. Wright.

The development of agriculture, urbanism, the state and empires in the near East with a concentration on ancient Mesopotamia and Egypt from the prehistoric to the early historic periods.

520. Rise and Fall of Civilizations. Spring (3). Ms. Wright.

A survey of prehistoric civilizations from the first settled villages to urban states in ancient Mesopotamia, Egypt, and the Indus Valley, China, Mesoamerica, and South America.

552. Archaeology of Europe. Spring (3). Mr. Barka.

A survey of the prehistoric and early historic cultures of Europe, covering the Paleolithic, Mesolithic, Neolithic, Bronze and Iron Ages. Comparisons will be made with the cultural development of Asia, the Middle East, and Africa.

MATHEMATICS

NEW COURSES: 571. Introduction to Simulation. Fall (3). Staff.

An introduction to FORTRAN based computer simulation and SLAM II. Topics include network modeling, discrete event simulation, continuous modeling, and combined network and discrete event, and/or continuous modeling.

575. Dynamic and Geometric Programming. Fall (3). Staff.

Theory and applications of dynamic programming including network, travelling salesman, inventory and allocation problems. The theory and solution procedures for geometric programming, with and without constraints, are also covered, including development of bounds and approximations for highly complex problems.

MATHEMATICS (continued)

CHANGE: 578. Changed course title from Optimization to Non-linear Programming.

PSYCHOLOGY

CHANGE: 620. Colloquium. Changed credit hour from 1 to 0.

Committee on Graduate Studies:

Norman Barka
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Miles Chappell
Morton Eckhause
Michael Faia
Philip Funigiello
Sidney Lawrence
Bruce McConachie
Richard Prosl
Kelly Shaver
David Thompson
Neill Watson
Peter Wiggins
L. Don Wright (VIMS Representative)
Robert J. Scholnick (Chairman)