

**ANNUAL REVIEW OF ACADEMIC
PROGRAM CONTRACTS BETWEEN THE
STATE BOARD OF EDUCATION AND
FLORIDA INDEPENDENT
POSTSECONDARY INSTITUTIONS**

**Report and Recommendations of the
Florida Postsecondary Education Planning Commission**

AUGUST 1998

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The Postsecondary Education Planning Commission, initially created by executive order in 1980, given statutory authority in 1981 (SS 240.145 and 240.147, Florida Statutes), and reauthorized by the 1991 Legislature, serves as a citizen board to coordinate the efforts of postsecondary institutions and provide independent policy analyses and recommendations to the State Board of Education and the Legislature. The Commission is composed of 11 members of the general public and one full-time student registered at a postsecondary education institution in Florida. Members are appointed by the Governor with the approval of three members of the State Board of Education and subject to confirmation by the Senate.

A major responsibility of the Commission is preparing and updating every five years a master plan for postsecondary education. The enabling legislation provides that the Plan "shall include consideration of the promotion of quality, fundamental educational goals, programmatic access, needs for remedial education, regional and state economic development, international education programs, demographic patterns, student demand for programs, needs of particular subgroups of the population, implementation of innovative educational techniques and technology, and the requirements of the labor market. The capacity of existing programs, in both public and independent institutions, to respond to identified needs shall be evaluated and a plan shall be developed to respond efficiently to unmet needs."

Other responsibilities include recommending to the State Board of Education program contracts with independent institutions; advising the State Board regarding the need for and location of new programs, branch campuses and centers of public postsecondary education institutions; periodically reviewing the accountability processes and reports of the public and independent postsecondary sectors; reviewing public postsecondary education budget requests for compliance with the State Master Plan; and periodically conducting special studies, analyses, and evaluations related to specific postsecondary education issues and programs.

Further information about this publication as well as other Commission publications, meetings and activities of the Commission may be obtained from: the Postsecondary Education Planning Commission, 325 West Gaines Street, Ralph Turlington Building, Tallahassee, Florida, 32399-0400; Telephone (850) 488-7894; FAX (850) 922-5388; Website - www.firn.edu/pepc.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
I. INTRODUCTION	5
II. ANNUAL CONTRACT REVIEWS.....	10
Florida Institute of Technology	
BS in Science Education	11
University of Miami	
BS in Industrial (Manufacturing) Engineering.....	14
BS in Architectural Engineering	17
MS in Biomedical Engineering	20
MS in Nursing	23
Ph.D. in Marine and Atmospheric Sciences.....	27
Ph.D. in Biomedical Sciences	30
BS in Motion Pictures	33
Barry University	
BS in Nursing	35
Florida Southern College	
BA/BS in Elementary Education.....	38
BS in Accounting	40
Nova Southeastern University	
Osteopathy.....	42
Pharmacy	45
MS in Speech/Language Pathology.....	48

III. FIVE YEAR ACADEMIC CONTRACT REVIEWS	50
A. Florida Institute of Technology - BS in Engineering	51
B. University of Miami -BS in Nursing.....	63
C. Barry University - MS in Social Work.....	74
D. Nova Southeastern University - Optometry	78
IV. CONTINUING CONTRACT RECOMMENDATIONS	84
A. University of Miami - BS in Music Engineering Technology	85
B. Bethune-Cookman College - BS in Specific Learning Disabilities.....	86

APPENDICES

A	Annual Contract Renewal Report
B	Five-Year Contract Report Form
C	Consultant Report: BS in Engineering, Florida Institute of Technology
D	Consultant Report: BS in Nursing, University of Miami
E	Consultant Report: MS in Social Work, Barry University
F	Consultant Report: Doctor of Optometry, Nova Southeastern University

EXECUTIVE SUMMARY

In accordance with the provisions of the State Board of Education Rule 6A-10.032, the Postsecondary Education Planning Commission has conducted an annual review of the academic programs which received contract funding from the State Board of Education in 1997-98 to provide instruction to Florida residents at state tuition rates. Four five-year contract reviews were also conducted. This report provides a compilation of the contract reviews.

The Commission believes that all postsecondary education resources in the State must be utilized to meet the education needs of a rapidly growing state. Within the current fiscal realities facing public education in Florida, contracting can be a cost-efficient way to increase access for Florida residents to a postsecondary degree in fields in which graduates are in demand. Contract programs in such fields as biomedical engineering, nursing and social work are producing high quality graduates who are addressing local, regional and state workforce needs.

As in 1997, the establishment of a state contract to support Bethune-Cookman College's Bachelor of Science program in Specific Learning Disabilities continues to be recommended by the Commission.

The 1999-2000 contract funding recommendations represent a continuing request to restore the level of student support for a majority of the contracts to the funding levels recommended by the Commission for the past nine years. Since 1988, the Legislature has kept funding relatively constant which has resulted in a reduction in student support each year. The Commission urges the full commitment of the State to fund the current contracts at the level of student support recommended in the report.

The Commission's 1999-2000 contract funding recommendations by institution and academic program appear on the following page.

**CONTRACT FUNDING RECOMMENDATIONS
1999-2000**

	<u>PEPC Funding Recommendation</u>	<u>Semester Credit Hours</u>
FLORIDA INSTITUTE OF TECHNOLOGY		
BS/Engineering*	\$921,600	2000
BS/Science Education	251,652	550
UNIVERSITY OF MIAMI		
BS/Industrial Engineering	\$246,446	331
BS/Architectural Engineering	223,365	300
MS/Biomedical Engineering	168,735	250
BS/Nursing*	595,640	800
MS/Nursing	401,589	595
Ph.D./Marine & Atmospheric Sciences	531,900	150
Ph.D./Biomedical Sciences	576,000	18 Students
BS/Motion Pictures	335,047	450
BS/Music Engineering Technology	335,047	450
BARRY UNIVERSITY		
BS/Nursing (Accelerated Option)	\$401,005	1100
MSW/Social Work *	418,419	1350
FLORIDA SOUTHERN COLLEGE		
BS/BA/Elementary Education	\$44,660	184
BS/Accounting	39,321	162
BETHUNE COOKMAN COLLEGE		
BS/Specific Learning Disabilities	\$76,190	288
NOVA SOUTHEASTERN UNIVERSITY		
MS/Speech-Language Pathology	\$335,958	700
TOTAL (DEPT. OF EDUCATION)		
	\$5,902,574	
NOVA SOUTHEASTERN UNIVERSITY (CONTINUED)		
X Osteopathy	\$3,020,375	365 Students
X Pharmacy	884,000	260 Students
X Optometry*	1,048,000	131 Students
GRAND TOTAL	\$10,854,949	

* FIVE-YEAR REVIEW

X Appear in Board of Regents General Office Budget

I. INTRODUCTION

Since authorized by the Legislature in 1975, the state of Florida has contracted with independent colleges and universities for Florida residents to participate at state tuition rates in carefully selected academic programs. In 1981, the Florida Legislature transferred authority from the Board of Regents to the State Board of Education "to contract with (accredited) independent institutions . . . for the provision of those educational programs and facilities which will meet needs unfulfilled by the state system of postsecondary education" (S.229.053 (2)(o), F.S.). The Postsecondary Education Planning Commission was assigned responsibility to "recommend to the State Board of Education contracts with independent institutions to conduct programs consistent with the state master plan for postsecondary education" (S.240.147(4), F.S.).

The authority for academic program contracts, according to State Board of Education Rule 6A-10.032, FAC.:

is based upon the principles of efficiency, effectiveness, and economy. The State Board may contract for a program or for the use of an existing facility if it can be demonstrated that the state need for the program or facility may be met at lower cost or more effectively through contracting. In all cases, the program or facility obtained through contract must be of equal quality as similar programs and facilities in the state system of postsecondary education.

As envisioned in the 1982 ***Master Plan For Florida Postsecondary Education***, statute and rule, the contracting process is one manifestation of the recognition by the state of Florida that all postsecondary education resources must be utilized to meet the educational needs of a rapidly growing state. Florida's citizens are able to gain access to needed quality programs at competitive costs and at public tuition rates. The independent institutions involved in contracting benefit primarily from an increased pool of students who are better able, with state assistance, to afford to enter the selected contract programs. When the State enters a contract with an established academic program at an independent institution to provide a needed educational opportunity, it takes advantage of the institution's prior investment and avoids duplicative start-up costs. By design, the student may pay no more tuition under a contract than at a comparable public sector program.

In Challenges and Choices: The Master Plan for Florida Postsecondary Education, the 1998 Commission identifies responses to meet the future postsecondary access needs in our state. One response is the increased use of the independent sector. The ***Plan*** states: "increase the state subsidy to in-state students attending Florida private institutions," and recognizes that the independent institutions could be expected to serve about ten percent of the state's projected enrollment growth. The ***Plan*** also recommends funding strategies to provide support to Florida residents in the independent sector.

A priority for the Commission continues to be to increase and broaden postsecondary opportunities for the state's minority students. Table 1 displays 1997-98 contract-supported students by program and ethnicity.

TABLE 1

**Contract-Supported Students by Ethnicity
1997-98**

<u>CONTRACT PROGRAM</u>	<u>ETHNICITY</u>					<u>Total</u>
	<u>Black</u>	<u>White</u>	<u>Hispanic</u>	<u>Asian</u>	<u>Other</u>	
<i>Florida Institute of Technology</i>						
BS/ Engineering (1996-1997)	1	34	3	0	0	38
BS/Science Education	0	7	0	0	0	7
<i>University of Miami</i>						
BS/Industrial (Manufacturing) Engineering	5	1	14	0	0	20
BS/ Architectural Engineering	1	4	6	1	0	17
MS/ Biomedical Engineering	9	14	8	11	3	45
BS/ Nursing (1996-97)	8	23	11	5	1	48
MS/ Nursing	12	34	10	0	0	56
Ph.D. Biomedical Sciences	1	21	4	2	0	28
Ph.D. Marine & Atmospheric Sciences	0	19	1	0	1	21
BS in Motion Pictures	7	31	26	1	4	69
<i>Barry University</i>						
BS/ Nursing (Accelerated Option)	1	19	3	0	0	23
MSW/ Social Work (1996-97)	19	69	30	0	0	118
<i>Nova Southeastern University</i>						
Osteopathy	3	62	12	13	0	90
Pharmacy	8	138	54	40	0	240
Optometry (1996-1997)	3	97	9	20	1	130
MS/Speech-Language Pathology	8	59	17	4	1	89
TOTAL	86	632	208	97	11	1039

The Commission, in accordance with statute and rule, conducts a detailed evaluation of each proposal for a contract submitted by an independent institution prior to a recommendation to the State Board of Education. Historically, the Commission has recommended state support for an academic program at a level that does not encourage over-dependence on State funds for its viability. For many contracts, the FTE funding level has stabilized at from 40 to 60 percent of the total program enrollment.

The cost of the contract is the total cost to the State for the program at the independent institution. In contrast, public sector operating cost data do not include significant capital outlay expenditures for facilities and major equipment purchases or other start-up costs which would be necessary to duplicate an existing independent sector program. Calculating cost comparisons

between academic program contracts and similar public sector programs has been problematic, as there appears to be as much variation in program costs among similar programs at independent and public institutions as among such programs within the State University System.

This report consists of a brief display of summary information and data on each contract program for the 1997-98 academic year. Fourteen academic contract programs received annual reviews and these reviews are addressed in Chapter II. Simultaneously, comprehensive five-year contract reviews were conducted for four existing contract programs: the Bachelor of Science in Engineering at the Florida Institute of Technology, the Bachelor of Science in Nursing at the University of Miami, the Master of Social Work at Barry University and Nova Southeastern University's Optometry program. The program reviews and funding recommendations of these four contract programs appear in Chapter III.

During 1997, Bethune-Cookman College's proposal to establish a contract for its baccalaureate program in Specific Learning Disabilities was approved by the Commission. Since the 1998 Legislature did not appropriate funds to establish the contract, Chapter IV includes a brief summary of this program, as well as the newly-established contract for the University of Miami's BS in Music Engineering Technology. Funding recommendations for the 1999-2000 academic year for these two programs appear in Chapter IV.

1998-99: Little Change in State Contract Support

Since 1988, state support for the academic contracts has steadily declined as the Legislature has held the state appropriation for each contract relatively constant, in effect, "rolling over" the previous year's dollar amount. This has resulted in a continued erosion of the funding level, as increased tuition and program costs have steadily reduced the number of students supported each year. During this period, the level of student credit hour support stated in the specific legislative appropriation for each contract program has had no relation to the actual number of students served by the state dollars.

State funding for a majority of the contracts has been reduced over 20 percent since 1988. Table 2 displays tuition increases at contracting institutions as well as the decline of state contract funding. The disparity is most dramatic at the Florida Institute of Technology due to the university's 160 percent tuition increase since 1987. In addition, during the 1992-93 year, contract funding levels were reduced 6.6 percent due to across-the-board state budget reductions enacted by the Governor and Legislature.

For the 1998-99 year, the Commission recommended state funding for 20 academic contracts. With the exception of four contract programs, all of the contracts funded by the 1998 Legislature for the 1998-99 year were funded below the level recommended by the Commission. The Legislature appropriated funds for the Optometry program at Nova Southeastern University at a significantly higher level than was recommended by the Commission. However, the Legislature did not appropriate funds to establish a new contract for Bethune-Cookman College's Specific Learning Disabilities program as was recommended by the Commission in 1997. For the ninth straight year, the Legislature failed to fund the second year, phase-in funding for the Architectural Engineering program at the University of Miami. The total appropriation for all of

the contracts was nearly 80 percent of the level recommended by the Commission and was approximately \$2.1 million dollars below the total recommended amount. (See Table 3)

TABLE 2

Academic Contract Institutions
State Funding and Tuition Costs
Percent Change: 1988-96

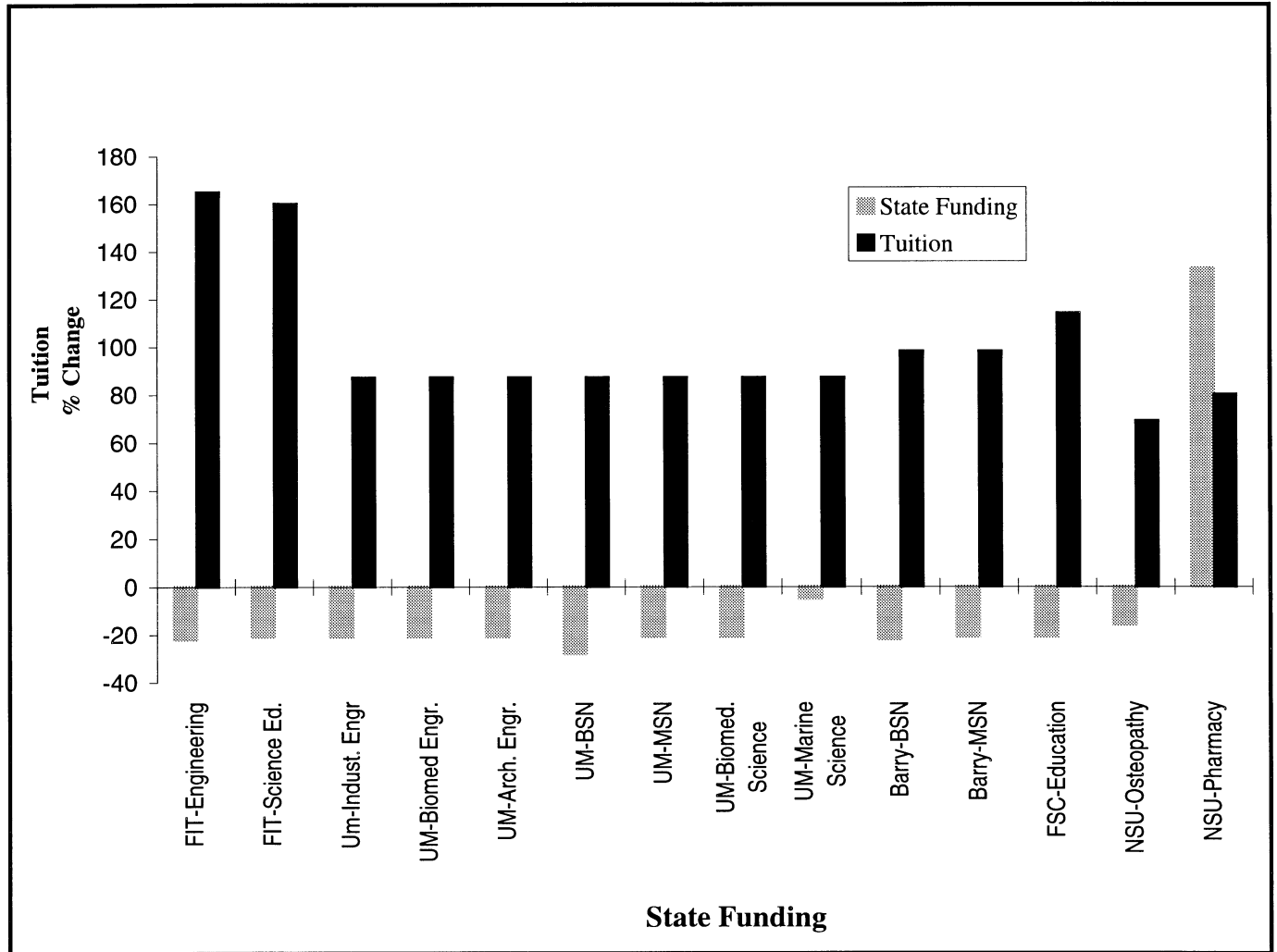


TABLE 3

STATE ACADEMIC CONTRACTS
1998 PEPC Recommendations and Legislative Appropriations

CONTRACTS	1997-98 FUNDING	PEPC RECOMMENDATION for 1998	1998 LEGISLATIVE APPROPRIATION
FLORIDA INSTITUTE OF TECHNOLOGY			
BS/Engineering	\$ 401,346	\$ 901,040	\$ 401,346
BS/Science Education	\$ 86,787	\$ 247,786	\$ 86,787
UNIVERSITY OF MIAMI			
BS/Industrial (Manufacturing) Engineering	\$ 182,082	\$ 235,844	\$ 182,082
BS/Architectural Engineering	\$ 74,222	\$ 213,756	\$ 74,222
MS/Biomedical Engineering	\$89,802	\$ 291,352	\$ 89,802
BS/Nursing	\$ 331,091	\$ 567,878	\$ 331,091
MS/Nursing	\$ 299,559	\$ 385,233	\$ 299,559
Ph.D./Biomedical Sciences	\$ 362,228	\$ 576,000	\$ 362,228
Ph.D./Marine & Atmospheric Sciences	\$ 289,430	\$ 531,900	\$ 289,430
BS/Motion Pictures	\$ 544,657	\$ 320,634	\$ 320,634
BS/Music Engineering Technology	0	\$ 320,634	\$ 200,000
BARRY UNIVERSITY			
BS/Nursing (Accelerated Option)	\$ 189,989	\$ 372,372	\$ 189,989
MSW/Social Work	\$ 193,734	\$ 389,407	\$ 193,734
FLORIDA SOUTHERN COLLEGE			
BS/BA/Elementary Education	\$ 69,823	\$ 34,688	\$ 34,688
BS/Accounting	\$ 52,832	\$ 30,540	\$ 30,540
NOVA SOUTHEASTERN UNIVERSITY			
Osteopathy *	\$ 2,383,900	\$ 3,021,000	\$ 3,133,900
Pharmacy *	\$ 588,244	\$ 884,000	\$ 838,244
Optometry *	\$ 969,400	\$ 624,000	\$ 969,400
MS/Speech-Language Pathology	\$ 215,280	\$ 341,915	\$ 215,280
BETHUNE-COOKMAN COLLEGE			
BS/Specific Learning Disabilities	0	\$ 68,118	0
TOTAL	\$ 7,324,406	\$ 10,358,097	\$ 8,242,956

• *In Board of Regents General Office Budget*

II. ANNUAL CONTRACT REVIEWS

Each year, the Commission conducts contract reviews to support its recommendations to the State Board of Education on the renewal of each contract and to formulate a budget recommendation. Annual contract reviews are conducted following a submission of an annual report form by the institution contract administrator. Statistical data on contract program enrollments and graduates is collected and compiled by the Department of Education Office of Postsecondary Education Coordination. The annual review of each contract program, including student/faculty ratio, admission practices, minority participation rate and student demand, may serve to identify a deterioration in quality of a contract that may warrant additional scrutiny. A copy of the annual contract report form appears in Appendix A.

During the annual review process, each program is analyzed for continued compliance with the provisions of State Board of Education Rule 6A-10.032, FAC. Specific review criteria include:

- Unmet needs (student demand)
- Adequacy of resources
- Employer demand
- Specialized accreditation
- State subsidy (cost)
- Capability of nearby state institutions
- Consistency with the State Master Plan
- Minority participation
- Ratio of students enrolled under the contract to the number of graduates produced.

Following each review, a funding level for state support for the contract for the 1999-2000 year is recommended. Upon approval by the Commission, contract funding recommendations are forwarded to the Department of Education for submission to the State Board of Education and the Legislature.

BS IN SCIENCE EDUCATION - Florida Institute of Technology

Contract Summary

- Initially funded by the 1983 Legislature at \$35,508. Contract funding for this program peaked in 1987 at \$115,354 for 27 FTE students. Since that year, contract dollars have declined, resulting in reduced student support in the program.
- The contract program is unique in that it is offered by a major independent, technological university, is housed in the College of Science and Liberal Arts (as opposed to the College of Education) and is limited to the preparation of high school teachers.
- *The Comprehensive Plan for Improving Mathematics, Science, and Computer Education in Florida* states that by 2000 "... Florida is expected to produce only 24 percent of the Science teachers it needs." It goes on to point out that, several years ago, "... about one in 10 general level mathematic and science courses are being taught by teachers not certified in these fields."
- The program projects that demand for math and science teachers in the region will grow due to increases in the number of secondary students during this decade and the unusually large number of retiring teachers over the next five years and that educational programs do not produce enough graduates.
- The 1993 Department of Education report: *Trends in the Supply of New Teachers in Florida* shows that, in 1983, 83 science teachers graduated from all teacher preparation programs in Florida. Ten years later, the number of graduates was only 125.
- 1997-98 contract students: graduates - four; new enrollment - four; total contract enrollment - seven. Total program enrollment is 41 students.
- There are 55 full-time faculty (51 hold the Ph.D. degree) in the College of Science and Liberal Arts who are involved in courses taught in the contract program. There are five full-time faculty in the Science/Math Education Department (4 hold the Ph.D. degree).
- FIT offers full scholarships for minority students who enroll in math/science education programs.

1997-98 Student Demand

Program Applicants	21
Applicants Admitted	2
Total Applicants Denied	19
Qualified Applicants Denied	19
Applicants Enrolled	2

- The 1994 five-year contract review found that the contract program had shown growth and was strongly deserving of the continuation of state support. The review found that the program attracts high quality students, provides vigorous science and math coursework, combines pedagogy with science throughout the curriculum, promotes an identity with the professional education community in Brevard County and East Central Florida, and produces graduates who become Florida teachers. Given the increase in tuition at FIT, the review consultant recommended to increase the size of the grant to support the intended number of students.
- Following the 1994 review, the Commission recommended that the contract be restored to its intended level of student support over a two year period.
- The 1997 Commission recommended \$247,786 to support 550 student credit hours for the 1998-99 academic year. The 1998 Legislature, however, held the funding constant at \$86,787.

1997-98 Contract Enrollment (Unduplicated Headcount)

ETHNICITY							STATUS	
GENDER	ASIAN	BLACK	HISPANIC	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE	0	0	0	4	0	4	4	0
MALE	0	0	0	3	0	3	3	0
ALL	0	0	0	7	0	7	7	0

1997-98 Student Credit Hours

Total Student Credit Hours (SCH) - 193

Outcomes

- All students who have graduated from the approved department programs have passed the Florida Teacher Certification Examination (FTCE).
- The department utilizes three formal evaluation processes in which faculty interaction as a group takes place. These include an annual department planning retreat, a semi-annual meeting of all undergraduate course instructors, and weekly department faculty meetings.

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	2	1	0	1	4
FLORIDA	0	0	0	0	0
OUT-OF-STATE	0	0	0	0	0
TOTAL	2	1	0	1	4

Positions: High School Science Teacher
 Community College Computer Teacher
 Science Instructor--Museum

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations (FTE/SCH)</u>	<u>Legislative Appropriation</u>
1994	\$303,504 (30/1440)	\$86,787
1995	\$227,463 (550)	\$86,787
1996	\$234,949 (550)	\$86,787
1997	\$241,505 (550)	\$86,787
1998	\$247,786 (550)	\$86,787

FLORIDA INSTITUTE OF TECHNOLOGY - BS IN SCIENCE EDUCATION

1999-2000 Contract Recommendation

University Request - State support for 550 student credit hours (SCH)

Commission Recommendation - \$ 251,652 for 550 SCH

BS IN INDUSTRIAL (MANUFACTURING) ENGINEERING -University of Miami

Contract Summary

- Initially funded by the 1983 Legislature at \$97,000. Contract funding for this program peaked in 1988 at \$230,083 for 30 FTE students.
- The University of Miami offers the only accredited manufacturing engineering program in Florida and is one of 14 ABET accredited programs in the U.S.
- The department reports that the demand for manufacturing engineers in design manufacturing and research and development in Florida is increasing, the investment in manufacturing and manufacturing support services in Florida is increasing and the expectation for growth of the economy in South Florida is positive. The ongoing technological changes in industry are increasing the demand for better-trained manufacturing engineers.
- Southeast Florida industry is also served by the Florida International University Industrial Engineering program which has a Master's degree with a manufacturing option.
- The department reports that the program is strengthened by the Computer Integrated Manufacturing Laboratory. The laboratory houses state-of-the-art equipment to support applications of manufacturing technologies, processes and research, and the department recently acquired new equipment of the lab.
- The department also operates an ergonomics laboratory, a noise and vibration lab, a systems and operations research lab, an industrial ventilation lab and a work design lab.
- The Department has been an integral part of the overall retention programs administered by the College of Engineering. The program is designed to help incoming freshman, including minority students to adjust to the large University lifestyle and improve the retention rate for these new students.
- Ten full-time faculty teach in the BS industrial engineering program. Qualified professionals (practicing engineers) in the region also teach courses on a part-time basis.

1997-98 Student Demand

Program Applicants	7
Applicants Admitted	6
Total Applicants Denied	1
Qualified Applicants Denied	0
Applicants Enrolled	6

- 1997-98 contract students: graduates- three; new enrollments-six; total contract enrollment - 20.
- The 1994 five-year contract review found that the manufacturing engineering program is of high quality and is providing graduates who are in high demand. The review concluded that the program is meeting a need that is not now being met by other universities in the region.
- Following the 1994 review, the Commission recommended that the contract be restored to its intended level of student support over a two year period.
- The 1997 Commission recommended \$235,844 to support 331 student credit hours for the 1998-99 academic year. The 1998 Legislature, however, held the funding level constant at \$182,082.

1997-98 Contract Enrollment (Unduplicated Headcount)

ETHNICITY							STATUS	
GENDER	ASIAN	BLACK	HISPANIC	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE	0	2	4	0	0	6	5	1
MALE	0	3	10	1	0	14	12	2
ALL	0	5	14	1	0	20	17	3

1997-98 Student Credit Hours

Total Student Credit Hours (SCH) - 319

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	1	1	1	0	3
FLORIDA	0	0	0	0	0
OUT-OF-STATE	0	0	0	0	0
TOTAL	0	0	0	0	0

Positions:

Methods Analysis--American Bankers Insurance Group
 Sales Engineer--ITT
 Graduate Education

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations(FTE/SCH)</u>	<u>Legislative Appropriation</u>
1994	\$418,428 (30/887)	\$182,082
1995	\$318,536 (520 SCH)	\$182,082
1996	\$239,087 (370 SCH)	\$182,082
1997	\$251,267 (370)	\$182,082
1998	\$235,844 (331)	\$182,082

UNIVERSITY OF MIAMI - BS IN INDUSTRIAL (MANUFACTURING) ENGINEERING

1999-2000 Contract Recommendation

University Request: State support for 331 student credit hours (SCH)

Commission Recommendation: \$ 246,446 for 331 SCH

BS IN ARCHITECTURAL ENGINEERING - University of Miami

Contract Summary

- Initially funded by the 1989 Legislature at \$93,720 to support ten FTE as a first-year, phase-in. Since the initial state appropriation in 1989, second year, phase-in funding has not been appropriated by the Legislature.
- The university offers the only BS program in architectural engineering in Florida. The program is one of 13 U.S. programs accredited by the Accreditation Board of Engineering and Technology (ABET).
- Program graduates continue to be in demand due to the steady growth of the building and construction industries in South Florida, and due to the increasing complexity of building systems. The department reports that, responding to student demand, a number of universities nationally are contemplating architectural engineering programs, e.g., Rutgers, Duke, Portland State and Illinois Institute of Technology.
- The majority of Florida residents in the program are recruited as a result of the program's 2+2 articulation agreement with the pre-engineering programs at community colleges in Dade and Broward counties.

1997-98 Student Demand

Program Applicants	32
Applicants Admitted	30
Total Applicants Denied	2
Qualified Applicants Denied	0
Applicants Enrolled	30

- Fall 1997 program enrollment was 76.
- 1997-98 contract students: graduates - seven; new enrollments - 30; total contract enrollment - 17.
- Student to faculty ratio is approximately 13:1. Six full-time faculty teach in the BSAE program. Part-time faculty include practicing engineers and architects in the region and affiliated faculty from other school and engineering departments.
- The department utilizes nine laboratories for teaching and research in the architectural engineering program.
- The department operates an active recruitment program for minorities and women and provides a comprehensive retention program that includes seminars, early testing, tutoring and laboratory support.

- The 1997 Commission recommended \$213,756 to support 300 student credit hours for the 1998-99 academic year in a continuing request to fully fund the contract. The 1998 Legislature, however, held the funding constant at \$74,222.

1997-98 Contract Enrollment (Unduplicated Headcount)

ETHNICITY							STATUS	
GENDER	ASIAN	BLACK	HISPANIC	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE	0	0	4	1	1	6	6	0
MALE	1	1	2	3	4	11	11	0
ALL	1	1	6	4	5	17	17	0

1997-98 Student Credit Hours

Total Student Credit Hours (SCH) - 123.8

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	0	0	0	0	0
FLORIDA	2	0	0	3	5
OUT-OF-STATE	0	1	0	1	2
TOTAL	2	1	0	4	7

Position: Engineer
 Air Force Officer
 VP LRX Corporation
 Four new graduates

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations (FTE/SCH)</u>	<u>Legislative Appropriation</u>
1994	\$348,690 (20/600)	\$74,222
1995	\$183,771 (300 SCH)	\$74,222
1996	\$193,854 (300 SCH)	\$74,222
1997	\$203,730 (300)	\$74,222
1998	\$213,756 (300)	\$74,222

UNIVERSITY OF MIAMI - BS IN ARCHITECTURAL ENGINEERING

1999-2000 Contract Recommendation

University Request: State support for 450 student credit hours (SCH)

Commission Recommendation: \$ 223,365 for 300 SCH

MS IN BIOMEDICAL ENGINEERING - University of Miami

Contract Summary

- Initially funded by the 1984 Legislature at \$40,680. Contract funding for the program peaked in 1988 at \$113,478 for 12 FTE students. Since that time, contract dollars have remained relatively constant which has resulted in a drop in FTE student support each year.
- The University of Miami provides the only programs in Florida that offer the MS and Ph.D. degrees in biomedical engineering. However, the joint College of Engineering of FAMU/FSU and the College of Engineering at the University of Miami have prepared a joint proposal for collaboration in starting an MS in biomedical engineering program in Tallahassee. To facilitate the program in Tallahassee, the provost of the University of Miami provided start up funds to develop distance learning techniques for the 9 credit foundation course: Unified Medical Sciences I and II.
- Following a five-year review of the contract in 1995, the Commission recommended that state support of the program be continued. The 1995 Commission recommended that funding be provided for 300 graduate SCH and 300 undergraduate SCH. The 1996 Legislature, however, kept the funding level for this contract the same as previous years at \$89,802. [It is important to note that the department determined that baccalaureate students in the biomedical engineering program can only be supported by the contract if the additional state dollars are appropriated by the Legislature at the level recommended by the Commission.] As in previous years, the 1998 Legislature held the funding level constant.
- The department reports that the biomedical device industry in Florida remains healthy and that technical employment appears to be rising in the biomedical industry. Regardless of the anticipated restructuring of the health care field, the need for cost effective engineering solutions to the problems of health care is likely to continue. At the moment, employment opportunities are excellent and the trend is expected to continue.
- Several of the biomedical device firms in South Florida have been acquired by larger corporations who intend to expand their operations. These expansions are likely to translate into specific jobs.
- The department has four faculty; six full time and eight active part-time. The department is currently searching for two permanent full-time tenure track faculty members for the 1998 academic year.
- 1997-98 contract students: graduates - six; new enrollments - nine; total contract enrollment-45.
- The contract student enrollment maintains a broad representation of ethnic groups in the department: six Asian, nine Black, eight Hispanic, and 14 White students.

1997-98 Student Demand

Program Applicants	101
Applicants Admitted	93
Total Applicants Denied	8
Qualified Applicants Denied	13
Applicants Enrolled	13

1997-98 Contract Enrollment (Unduplicated Headcount)

ETHNICITY							STATUS	
GENDER	ASIAN	BLACK	HISPANIC	WHITE	Not Reported	ALL	FULL	PART
FEMALE	4	3	2	3	0	12	11	1
MALE	7	6	6	11	3	33	27	6
ALL	11	9	8	14	3	45	38	7

1997-98 Student Credit Hours

Total Student Credit Hours (SCH) - 146

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	4	0	0	0	4
FLORIDA	0	0	0	1	1
OUT-OF-STATE	0	0	1	0	1
TOTAL	4	0	1	1	6

Specific Placement/Location

Research Engineer-Miami
 Biomedical Research Associate-Miami
 Engineer-Miami
 Engineer-Miami
 Further education-2

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations (FTE/SCH)</u>	<u>Legislative Appropriation</u>
1994	\$158,700 (10/300)	\$89,802
1995	\$260,011 (450)	\$89,802
1996	\$372,054 (600)	\$89,802
1997	\$397,411 (600)	\$89,802
1998	\$291,352 (450)	\$89,802

UNIVERSITY OF MIAMI - MS IN BIOMEDICAL ENGINEERING

1999-2000 Contract Recommendation

University Request: State support for 250 student credit hours (SCH)

Commission Recommendation: \$ 168,735 for 250 SCH

MS IN NURSING - University of Miami

Contract Summary

- Initially funded by the 1985 Legislature at \$350,400 to support 40.3 FTE students. Since that year, funding has remained constant which has resulted in a gradual reduction in state support per student.
- The University of Miami MSN program is one of seven National League of Nursing accredited master's programs in Florida and one of three in South Florida. The MSN curriculum is directed toward strengthening the preparation of all advanced practice students to assume provider, coordination and/or management roles in acute and primary care settings.
- Nationally, the requirement for masters and doctoral-trained nurses is projected to increase due to the increasing complexity of the health care delivery system and the patient population it serves. Several recent federal policy initiatives have demonstrated increasing demand for the role of nurses in primary care as family nurse practitioners and nurses-midwives. The National Council of State Boards of Nursing is promoting the requirement that all nurses practicing in "advanced" practice roles be prepared at least at the MSN level.
- Program majors are as follows: Primary Care Nursing with Family Nurse Practitioner and Nurse Midwifery options, and Adult Health. The School reports increased demand for graduates in each of these majors, with most graduates able to choose from several job offers.
- The Pew Health Professions Commission (1995) acknowledges the need for advanced nursing preparation through academic degrees and, with such preparation, the development of an information foundation and "experience base to operate more independently, work in community settings, more efficiently manage the health of patients and make an even more profound contribution to health care" (p. 33).
- The School maintains clinical contracts with over 100 hospitals and other community agencies.

1997-98 Student Demand

Program Applicants	68
Applicants Admitted	29
Total Applicants Denied	2
Qualified Applicants Denied	0
Applicants Enrolled	19

- Although the managed care environment has begun to cause some downsizing of hospital beds, the market for advanced practice nurses continues to grow, as evidenced by increasing demand, growing acceptance by other disciplines and changes in the regulatory and reimbursement climate for nurse practitioners.

- There were 16 faculty in the school during the 1997-98 year. The student/faculty ratio is 20:1 in classroom and 1 to 3:1 in the clinical settings.
- 1997-98 contract students: graduates - 27; new enrollments - 35; total contract enrollment- 56.
- Targeted recruitment strategies have resulted in an increase in minority students over the last five years.
- The 1996 five-year contract review found an excellent graduate program that is designed to meet the health care needs of the multicultural population in the region.
- According to the five-year review, "In the past 5 years, the University of Miami MSN program graduated 35 nurse midwives, 59 nurse practitioners and 76 clinical nurse specialists. The majority of graduates (95%) remain in Florida as contributing professionals and citizens."
- The 1997 Commission recommended \$385,233 to support 595 student credit hours for the 1997-98 academic year. The 1998 Legislature, however, held the funding level constant at \$299,559.

1997-98 Contract Enrollment (Unduplicated Headcount)

ETHNICITY							STATUS	
GENDER	ASIAN	BLACK	HISPANIC	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE	0	12	10	32	0	54	8	46
MALE	0	0	0	2	0	2	0	2
ALL	0	12	10	34	0	56	8	48

1997-98 Student Credit Hours

Total Student Hours (SCH) - 462.68 = credit hours supported by contract
 1028= total credit hours taken by contract students

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	22	0	2	0	22
FLORIDA	4	0	0	0	4
OUT-OF-STATE	1	0	0	0	1
TOTAL	27	0	2	0	27

Specific Placement Information (Partial List)

Position

Location

Family Nurse Practitioner

Cardiologist practice

Family Nurse Practitioner

Baptist Hospital

Family Nurse Practitioner

Jackson Memorial

Family Nurse Practitioner

Family practice

Nurse Midwife

Community practice

Nurse Midwife

Physician-based practice

[Several others are interviewing for similar positions]

Outcomes

- All nurse-midwife graduates successfully passed the national certification exam by the American College of Nurse-Midwives.
- All nurse practitioner graduates have passed the national certification exam in their area of specialization.

Funding History (1994--98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations (FTE/SCH)</u>	<u>Legislative Appropriation</u>
1994	\$380,880 (40/1200)	\$299,559
1995	\$333,450 (595 SCH)	\$299,559
1996	\$353,430 (595 SCH)	\$299,559
1997	\$370,846 (595 SCH)	\$299,559
1998	\$385,233 (595 SCH)	\$299,559

1999-2000 Contract Recommendation

University Request: State support for 658 student credit hours (SCH)

Commission Recommendation: \$ 401,589 for 595 SCH

Ph.D. IN MARINE AND ATMOSPHERIC SCIENCES - University of Miami

Contract Summary

- Initially funded by the 1985 Legislature at \$150,000. The funding level was gradually increased through 1987 to \$323,691 to support eight FTE students. The 1988 Commission recommended a funding increase to 10.5 FTE, but the funding increase was not appropriated.
- The Rosenstiel School is organized in the following divisions: Applied Marine Physics and Ocean Engineering with its Ocean Pollution Research Center, Marine and Atmospheric Chemistry, Marine Affairs, Marine Biology, Marine Geology and Geophysics, and Meteorology and Physical Oceanography.
- The Ph.D. program at the Rosenstiel School is recognized in the field as one of the top four oceanographic institutes in the United States. The school reports a severe shortage in the U.S. of trained scientists in marine science as demonstrated by strong demands for graduates in university research and academic faculty, government agencies, and private industry positions. There is a growing need for applied marine physicists as concern and awareness increases about our coastlines and the effects of development on this fragile environment. The need for well-trained researchers and instructors in the field of oceanography, marine chemistry, and geology has and continues to expand as more attention locally, nationally, and internationally is centered on the earth's environment and atmosphere. There remains a shortage of qualified people to meet these demands.

1997-98 Student Demand

Program Applicants	20
Applicants Admitted	7
Total Applicants Denied	13
Qualified Applicants Denied	0
Applicants Enrolled	5

- Student/faculty ratio is 1.788/1. The school has 85 faculty members, 13 females and 72 males. All faculty have Ph.D. degrees.
- 1997-98 contract students: Graduates - five; New enrollments - five; Total contract enrollment - 16. Contract-supported students comprise approximately 11 percent of the total program enrollment.
- Since its establishment, this contract has been based on the full cost of instruction and not on a tuition differential.
- The 1997 Commission recommended \$531,900 for the 1997-98 academic year. The 1998 Legislature appropriated \$289,430.

1997-98 Contract Enrollment (Unduplicated Headcount)

ETHNICITY							STATUS	
GENDER	INDIAN	BLACK	GENDER	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE	0	1	1	3	0	5	5	0
MALE	0	1	0	10	0	11	11	0
ALL	0	2	1	13	0	16	16	0

1997-98 Student Credit Hours

Total Student Hours (SCH) - 147

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	2	0	0	0	2
FLORIDA	0	0	0	1	1
OUT-OF-STATE	2	0	0	0	2
TOTAL	4	0	0	1	5

Specific Placement Locations

University of South Carolina--Faculty
 University of Miami--Research Associate
 Tropical Research & Education Center
 American Samoa Community College--Director

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations (FTE/SCH)</u>	<u>Legislative Appropriation</u>
1994	\$325,000 (3.94/94.52)	\$289,430
1995	\$439,680 (128 SCH)	\$289,430
1996	\$453,888 (128 SCH)	\$489,430
1997	\$489,430	\$289,430
1998	\$531,900	\$289,430

UNIVERSITY OF MIAMI - PH.D. IN MARINE AND ATMOSPHERIC SCIENCES

1999-2000 Contract Recommendation

University Request: State support for 180 student credit hours (SCH)

Commission Recommendation: \$531,900 for 150 SCH [\$3546 per SCH]

PH.D. IN BIOMEDICAL SCIENCES - University of Miami

Contract Summary

- Initially funded by the 1985 Legislature at \$100,000. The contract was fully funded in 1988 to support 16 FTE students at \$457,596. Since that year, the level of funding steadily dropped due to legislative budget cuts and increased tuition and program costs.
- The University of Miami is the only institution in Southeast Florida that offers this Ph.D. program.
- The State contract funds Ph.D. students in a four-year program for training to be researchers and faculty members in the medical sciences, in the areas of protein chemistry, cell biology, immunology, gene cloning, nucleic acid technology and drug discovery.
- The Center for Health Technologies in Miami continues to complement the growth of biotechnological industries in South Florida. Significant grants from the city of Miami and the Department of Defense have been used for equipment, renovation and start-up laboratory support.
- Through 1995, the national bio-tech industry created some 100,000 new jobs for Ph.D.-level individuals in biomedical sciences. Those highly trained individuals are the key skilled personnel in this latest area of US industrial strength.
- There are 113 graduate faculty available for the six Ph.D. programs in Biomedical Sciences. Sponsored faculty activity exceeds \$100 million annually. Student/Faculty ratio is 108:113.

1997-98 Student Demand

Program Applicants	413
Applicants Admitted	42
Total Applicants Denied	96
Qualified Applicants Denied	0
Applicants Enrolled	26

- 1997-98 contract students: - graduates - seven; new enrollments - 28; total contract enrollment - 28.
- A number of undergraduate summer research programs are in place at the School of Medicine to expose prospective students to the program: the Minority Access to Research Careers (MARC) program, the Minority Student Health Career Motivation program, and the Research and Academics for Minorities (RAMP) program. One goal of the high school and undergraduates programs is to encourage minorities to pursue graduate study and careers in science. Minority students are given preference for stipends and admission to the Ph.D. program.

- Since its establishment in 1985, this contract has been based on the full cost of instruction and not a tuition differential.
- The 1996 five-year contract review affirmed an exemplary Ph.D. program that has rejuvenated the biotechnology and pharmaceutical industries in the region. State funding for the program is now calculated on a per student basis, not on a set number of semester credit hours.
- The 1997 Commission recommended \$576,000 to support 18 students for the 1998-99 academic year. The 1998 Legislature, however, held the funding level constant at \$362,228.

1997-98 Contract Enrollment (Unduplicated Headcount)

GENDER	ETHNICITY						STATUS	
	ASIAN	BLACK	HISPANIC	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE	1	1	1	7	0	10	10	0
MALE	1	0	3	14	0	18	18	0
ALL	2	1	4	21	0	28	28	0

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	4	0	2	9	15
FLORIDA	2	0	0	0	2
OUT-OF-STATE	12	0	10	0	22
TOTAL	18	0	12	9	39

Specific Placement Information (Partial List)

Professor--UCF
 Post-doctoral--Johns Hopkins
 Post-doctoral in Pathology--Harvard Medical
 Assistant Professor--UF
 Assistant Professor--UGA

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations (FTE/SCH)</u>	<u>Legislative Appropriation</u>
1994	\$840,000 (16 FTE)	\$362,228
1995	\$600,000	\$362,228
1996	\$600,000	\$362,228
1997	\$576,000	\$362,228
1998	\$576,000	\$362,228

UNIVERSITY OF MIAMI--PH.D. IN BIOMEDICAL SCIENCES

1999-2000 Contract Recommendation

University Request: Support for 18 "Florida Scholars" - \$576,000 for full cost of instruction

Commission Recommendation: \$ 576,000 to support 18 students

BS IN MOTION PICTURES - University of Miami

Contract Summary

- The contract was initially recommended by the 1989 Commission to support 15 FTE incoming junior students to be followed by a second class of juniors and seniors the following year for a total contract enrollment of 30 FTE students. The 1989 contract proposal by the University of Miami was in response to the Commission's 1987 study of *Postsecondary Education Needs of the Film Industry in Florida*, which was conducted in cooperation with the Florida Motion Pictures, Television and Recording Industry Advisory Council. The study found that there was an unmet need in Florida's film industry for postsecondary film graduates. The University of Miami offers the only baccalaureate film program in South Florida.
- The program is ranked among the top five film programs in the U.S.
- South Florida remains the center of film and television production in Florida and ranks third in the nation behind New York and Los Angeles among all metropolitan areas. There are more than 300 production and production-related companies based in South Florida with more than 8,000 employees. The relatively new studio facilities in Orlando, at Universal Pictures and Walt Disney Productions, have heightened the demand for well-trained, film professionals.
- The South Florida film industry is establishing an expanding number of linkages to the Caribbean and Latin America. The Motion Picture and Television Advisory Council and the Florida Motion Picture and Television Bureau, an agency of the Department of Commerce, has gone on record as advocating more university training of film personnel to help staff the State's growing motion picture and television industries.

1997-98 Student Demand

Program Applicants	76
Applicants Admitted	69
Total Applicants Denied	7
Qualified Applicants Denied	0
Applicants Enrolled	61

- During the 1997-98 year, there were 340 students enrolled in the baccalaureate program. Sixty-one students are contract supported. The student/faculty ratio is 14:1
- The 1998 Legislature funded the contract for the 1998-99 year at the level that was recommended by the 1997 Commission: \$320,634. This appropriation was significantly less than the 1997 appropriation that included a \$254,000 supplement for equipment.

1997-98 Contract Enrollment (Unduplicated Headcount)

ETHNICITY							STATUS	
GENDER	ASIAN	BLACK	HISPANIC	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE	1	4	9	7	0	21	21	0
MALE	0	3	17	24	4	48	48	0
ALL	1	7	26	31	4	69	69	0

1997-98 Student Credit Hours

Total Student Hours (SCH) - 408.5

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	6	3	0	1	10
FLORIDA	2	0	0	0	2
OUT-OF-STATE	1	0	0	0	1
TOTAL	9	3	0	1	13

Funding History (1995-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations (FTE/SCH)</u>	<u>Legislative Appropriation</u>
1995	\$275,657	\$275,657
1996	\$290,781	\$290,657
1997	\$305,595	\$544,657
1998	\$320,634	\$320,634

UNIVERSITY OF MIAMI - BS IN MOTION PICTURES

1999-2000 Contract Recommendation

University Request: State support for 450 student credit hours (SCH) [plus \$15,000]

Commission Recommendation: \$ 335,047 for 450 SCH

BS IN NURSING - Barry University

Contract Summary

- Initially funded by the 1989 Legislature at \$242,330 to support 20 FTE. Since 1989, state funding has gradually been reduced to \$189,989.
- State contract supports the only baccalaureate, accelerated-option program in the State that is designed to prepare an individual possessing a bachelor's degree in any field with the necessary training to be employed as a registered nurse. The program is a 12 month curriculum.
- Program addresses the shortage of baccalaureate-trained nurses and the supply of registered nurses, particularly in Southeast Florida. The department also reported that other nursing programs including state universities are limiting enrollment, so the number of new graduates is decreasing.
- Grade point average requirement for admission to the accelerated program continues to be 3.0, and two starting dates are offered during the year.
- The 1995 five-year contract review commended the program "for increasing the baccalaureate preparation of nurses with other degrees and providing a shorter educational time and earlier entry to work." It was recommended that the contract program be continued "with the highest priority."
- The 1995 five-year review also noted that state support for the contract program has eroded over the last five years due to rising tuition and program costs and recommended that the contract be fully funded by the state. Since 1990, funding of this program has decreased by 20 percent while tuition has increased by 31 percent. The 1996 Commission recommended an increased level of support for the program.
- 1997-98 contract students: graduates - 12; new Enrollments - 11; total contract enrollment - 23.

1997-98 Student Demand

Program Applicants	110
Applicants Admitted	91
Total Applicants Denied	16
Qualified Applicants Denied	0
Applicants Enrolled	41

- The department has 24 full-time faculty; all faculty hold at least an MSN in the clinical specialty they teach. The clinical ratio in the program is 1:9-10. Classroom ratio is 1:20.

- The school reports that graduates with two baccalaureate degrees are in high demand by hospitals, healthcare agencies and the military services. All graduates take the NCLEX - RN exam to obtain licensure to practice as RN nurses. The success rate for graduates of the accelerated option program is 96 percent on the first attempt. All others succeeded on their second attempt.
- The 1997 Commission recommended \$372,372 to support 1,120 student credit hours for the 1998-99 academic year. The 1998 Legislature, however, held the funding constant at \$189,989.

1997-98 Contract Enrollment (Unduplicated Headcount)

ETHNICITY							STATUS	
GENDER	ASIAN	BLACK	HISPANIC	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE	0	1	3	16	0	20	20	0
MALE	0	0	0	3	0	3	3	0
ALL	0	1	3	19	0	23	23	0

1997-98 Student Credit Hours

Total Student Hours (SCH) - 561

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	7	2	0	0	9
FLORIDA	2	0	0	0	2
OUT-OF-STATE	0	0	0	0	0
TOTAL	9	2	0	0	11

Positions:

- Staff Nurse
- May 1998 graduates are in the process of getting licensed.

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations (FTE/SCH)</u>	<u>Legislative Appropriation</u>
1994	\$210,360 (15)	\$189,989
1995	\$207,145 (780)	\$189,989
1996	\$313,698 (1100)	\$189,989
1997	\$332,310 (1100)	\$189,989
1998	\$372,372 (1120)	\$189,989

BARRY UNIVERSITY - BS IN NURSING

1999-2000 Contract Recommendation

University Request: State support for 1,600 student credit hours (SCH).

Commission Recommendation: \$ 401,005 for 1,100 SCH

BS/BA IN ELEMENTARY EDUCATION - Florida Southern College

Contract Summary

- Initially funded by the 1989 Legislature at \$88,164 to support 40 FTE students. First-year contract review completed in 1990.
- Intent of the original contract recommendation by the Commission was to phase in the second year of enrollment to 80 FTE for 1990-91. However, since 1989, the Legislature has failed to fund the second year of the contract.
- The state contract was established to address the demand for and shortage of teachers in the rapidly growing tri-county area of Polk, Hardee and Highlands counties. The education department reported a 42 percent increase in elementary teacher vacancies between 1985 and 1990. These trends were expected to continue through the 1990s.
- The contract has been one of a number of state efforts to increase the postsecondary education opportunities in the region. FSC has developed cooperative articulation agreements with Polk Community College and the USF-Lakeland campus.
- A five-year review of this contract program was conducted in 1997. During the review, the Commission found the following:
 - No evidence that there was an unmet demand for elementary education graduates in the FSC service area. In Central Florida, over 750 graduates are being produced annually from the University of Central Florida and the University of South Florida.
 - No shortage of state-approved elementary education degree programs available to residents of Central Florida. Residents of the Lakeland area are able to complete the elementary education degree program at the Lakeland Campus of USF.
- As a result of the five-year review, the Commission recommended that the state contract be phased out over two years to ensure that students who are currently receiving state tuition support are able to complete their degree program. The 1999-2000 academic year will be the recommended final year of the state contract.

BS IN ACCOUNTING - Florida Southern College

Contract Summary

- Initially funded by the 1990 Legislature at \$63,686 to support 20 FTE students, pending confirmation by the Commission of the hiring of a Ph.D. faculty member in the college's accounting department. During the 1990-91 academic year, confirmation was received by the Commission of a Ph.D. hire for the department. Accordingly, the appropriated contract funds were released to the college on a prorated basis by the Department of Education.
- Since 1991, the Legislature has failed each year to fund the Commission's request to phase-in of the second year class to a total 40 FTE.
- The department has identified a growing need in Florida for trained accountants, a demand that cannot be met by the nine state universities.
- A five-year review of the contract program was conducted in 1997. During this review, the Commission found the following:
 - No evidence that there is an unmet demand for accounting graduates in the Central Florida region or in the State. The State University System annually graduates nearly 1,500 baccalaureate accounting majors.
 - There is a significant number of both public and private baccalaureate accounting programs in the Central Florida region. USF-Lakeland Campus offers the BA/BS in Accounting.
 - The FSC Accounting Department was weakened by the loss of the only Ph.D.-prepared faculty member.
- As a result of the five-year review, the Commission recommended that the state contract be phased out over two years to ensure that students who are currently receiving state tuition support are able to complete their degree program. The 1999-2000 academic year will be the final year of the state contract.

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations (FTE/SCH)</u>	<u>Legislative Appropriation</u>
1994	\$106,890	\$52,832
1995	\$96,342	\$52,832
1996	\$108,108	\$52,832
1997	\$115,260	\$52,832
1998	\$30,540	\$30,540

FLORIDA SOUTHERN COLLEGE - BS in Accounting

1999-2000 Contract Recommendation

Commission Recommendation: \$39,321 for 162 SCH
[for second year funding of a two-year phase-out of the contract]

OSTEOPATHY - Nova Southeastern University

Contract Summary

- The College of Osteopathic Medicine at Nova Southeastern University remains the only college of osteopathic medicine in the Southeastern U.S. The mission of the college is to produce primary care physicians that will address the shortage of generalist physicians in Florida. The college emphasizes training for family care in rural areas and with high geriatric populations, areas of particular need in Florida.
- The Health Professions Division is now housed in a new facility (a \$42 million, one million square feet complex) adjacent to the original Nova University.
- At the NSU College of Osteopathic Medicine, all students take a course in rural medicine followed by a required three month rotation in a prescribed rural environment. In addition, the college requires a classroom course in geriatrics followed by a mandatory geriatrics rotation. The college also operates two urban clinics in underserved black communities that are a part of the student rotation.
- The college first received state funding with the enrollment of its charter class in 1981 for 32 students at \$3,125 per student. The level of state support and specific appropriation per student steadily increased during the decade.
- The college now awards eight full four-year scholarships for minority students per year. The Committee on Admissions has been restructured and charged with increasing the number of female and minority students accepted.
- The college has established a seven year track in family medicine (SYFAM) to streamline the educational process to produce family medicine practitioners. In addition to the four-year medical track, internship and residency experiences are included in the program.

1997-98 Student Demand

Program Applicants	3,772
Applicants Admitted	240
Total Applicants Denied	3,532
Qualified Applicants Denied	90
Applicants Enrolled	150

- The college employs 71 full-time faculty, including one Hispanic, four Blacks and six Asian faculty.
- The 1997-98 college enrollment was 586 students. The minority student enrollment consisted of 12 Hispanic students, four Black students, 30 Asian students, and one Native American student.

- The university operates with an annual tuition charge and does not calculate tuition in terms of credit hours (full-time equivalent students). The 1998-99 tuition for a Florida resident is \$19,425 and for a non-Florida resident is \$22,837.
- The 1995 five-year contract review found that this contract program has an outstanding record in responding to the State's workforce goals of enhancing access by excellent primary care physician output, substantial minority enrollment in the medical school, and addressing geographic distribution of physician graduates in underserved areas. Increased state support of the program was recommended by the 1995 Commission.

1997-98 Contract Enrollment (Unduplicated Headcount)

GENDER	ETHNICITY						STATUS	
	ASIAN	BLACK	HISPANIC	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE	4	1	5	24	0	34	34	0
MALE	9	2	7	38	0	56	56	0
ALL	13	3	12	62	0	90	90	0

1997-98 Student Credit Hours

Total Student Hours (SCH) - 50.5 (1st year)

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	36	1	0	0	37
FLORIDA	18	1	1	0	20
OUT-OF-STATE	35	10	0	0	45
TOTAL	89	12	1	0	102

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations</u>	<u>Legislative Appropriation</u>
1994	\$2,096,000 320 Students	\$1,854,091 320 Students \$5794.03 per Student
1995	\$2,283,900 331 Students \$6,900 per Student	\$2,283,900 331 Students \$6,900 per Student
1996	\$2,755,000 380 Students \$7,250 per Student	\$2,283,900 315 Students \$7,250 per Student
1997	\$2,888,000 380 Students \$7,600 per Student	\$2,383,900 300 Students \$7,600 per Student
1998	\$3,021,000 380 Students \$7,950 per Student	\$3,133,900 365 Students \$7,216.16

NOVA SOUTHEASTERN UNIVERSITY - OSTEOPATHY

1999-2000 Contract Recommendation

College Of Osteopathy Request:

1. State support for 365 students.
2. \$8,275 per student capitation (1999 SREB level)
3. 1999-2000 budget request: \$ 3,020,375

Commission Recommendation: \$3,020,375 to support 365 students

PHARMACY - Nova Southeastern University

Contract Summary

- The Nova Southeastern University College of Pharmacy was established in 1987 and received initial state funding from the 1987 Legislature for 50 students. Since that year, the number of students supported by the State has increased to 240. An increase in the capitation award from \$2,500 to \$3,200 per student was recommended in 1994.
- Ninety-two percent of the student enrollment are Florida residents and 60 percent live in Dade, Broward or Palm Beach County. Based on a recent survey, 71 percent of the graduates obtained employment in these three counties. Minority enrollment continues to be approximately 43 percent. This diversity, however, is subject to change if additional funding is not granted by the Legislature.
- All students are admitted to the Pharm.D. degree program. At the end of the second professional year, students have been permitted to elect to the B.S. degree. Since fewer and fewer students were exiting to the B.S. degree, however, the exit point was eliminated for the entering class of 1995.
- The College currently has 37 faculty (13 with Ph.D.s and 24 with Pharm.D. degrees) and 250 clinical adjunct faculty based at 129 clinical sites in central and south Florida. The student-faculty ratio is 10.45:1 in basic courses and 2:1 in clinical.
- In the State University System, both Florida A & M University and the University of Florida have offered the B.S. and Pharm.D. degree programs. As of Fall '97, the BS degree programs have been terminated (those currently enrolled in the program will still have the option to complete the B.S. degree). Spring 1998 Program graduates are as follows:

	<u>B.S.</u>	<u>Pharm.D.</u>	<u>TOTAL</u>
FAMU	23	53	76
UF	<u>23</u>	<u>94</u>	<u>117</u>
TOTAL	46	147	193

1996-97 Student Demand

Program Applicants	465
Applicants Admitted	126
Total Applicants Denied	330
Qualified Applicants Denied	107
Applicants Enrolled	117

- The NSU College of Pharmacy operates with an annual tuition charge and does not calculate tuition in terms of credit hours (full-time equivalent students). Tuition for the 1997-98 academic year is \$12,940 for Florida residents and \$15,600 for out-of-state students.

- The College reports that the demand for pharmaceutical services is increasing due to the elderly population in South Florida, including the multiethnic and multi-cultural populations, which consumes one third of all medications. The College reports that as the number of opportunities for pharmacists expands to include consulting, nursing homes and HMOs, the demand continues to increase for its graduates.
- The College reports the following indicators of increased demand for pharmacists:
 - no graduate is without a position;
 - an increase in employers seeking graduates;
 - an increase in starting salaries.
- The 1997 Commission recommended \$884,000 to support 260 students for the 1998-99 academic year. The 1998 Legislature appropriated \$838,244.

1997-98 Contract Enrollment (Unduplicated Headcount)

ETHNICITY							STATUS	
GENDER	ASIAN	BLACK	HISPANIC	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE	23	6	39	87	0	155	155	0
MALE	17	2	15	51	0	85	85	0
ALL	40	8	54	138	0	240	240	0

1997-98 Student Credit Hours

Total Student Credit Hours (SCH) - 8,200

Outcomes

Florida Board of Pharmacy Licensing Examination - 98.7 percent passing rate

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	27	0	2	8	37
FLORIDA	12	0	3	0	15
OUT-OF-STATE	0	0	3	0	3
TOTAL	39	0	8	8	55

Positions (partial list):

Staff Pharmacist
 Clinical Pharmacist
 Pharmacy Manager
 Pharmacy Consultant

Pharmacy Resident
 Pharmacy Instructor

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations</u>	<u>Legislative Appropriation</u>
1994	\$600,000 240 Students	\$588,244 240 Students
1995	\$768,000 240 Students \$3200. Per Student	\$588,244 240 Students
1996	\$768,000	\$588,244
1997	\$884,000 260 Students	\$588,244
1998	\$884,000 260 Students	\$838,244

1999-2000 Contract Recommendation

College of Pharmacy Request: State support for 280 students.

Commission Recommendation: **\$884,000 to support 260 students.**

MS IN SPEECH/LANGUAGE PATHOLOGY - Nova Southeastern University

Contract Summary

- The establishment of a state academic contract for 30 FTE students in this program was recommended by the Commission in 1991. The 1994 Legislature funded this contract for the 1994-95 year at \$215,280 to support 30 FTE students.
- Speech-language pathology continues to be designated by the Department of Education as a critical shortage area. There continues to be a shortage of speech-language pathologists in Florida, and a compelling need in Southeast Florida. According to the Council of Graduate Program in Communication Sciences and Disorders, job posting by school districts and private sector facilities indicate fewer graduates than needed to fill available positions.

1997-98 Student Demand

Program Applicants	340
Applicants Admitted	175
Total Applicants Denied	16
Qualified Applicants Denied	0
Applicants Enrolled	123

- There is a critical demand for multilingual/multicultural speech/language Pathologists.
- The contract enrollment includes 17 Hispanics and eight blacks. Additional multi-lingual support services have been provided in the program. Ninety percent of the enrollment are female students.
- The program has 27 full-time and four part-time faculty. Twenty-seven of the 31 faculty are female. Faculty-student ratio is 1:5.2.
- A recent study of data over a five year period indicates that the overall pass rate on the National Exam (NESPA) is 85 percent.
- The 1997 Commission recommended \$341,915 to support 700 student credit hours for the 1998-99 academic year. The 1998 Legislature, however, held the funding level constant at \$215,280.

1997-98 Contract Enrollment

GENDER	ETHNICITY						STATUS	
	ASIAN	BLACK	HISPANIC	WHITE	Not Reported	ALL	FULL	PART
FEMALE	4	7	16	55	1	83	63	20
MALE	0	1	1	4	0	6	3	3
ALL	4	8	17	59	1	89	66	23

1997-98 Student Credit Hours

Total Student Hours (SCH) - 437

1997-98 Placement of Graduates

LOCATION	IN FIELD	NOT IN FIELD	FURTHER EDUCATION	UNKNOWN	TOTAL
LOCAL/REGION	15	0	0	0	15
FLORIDA	5	0	0	0	5
OUT-OF-STATE	1	0	0	0	1
TOTAL	21	0	0	0	21

Positions (partial list):

Dade County Public School Skilled Nursing Facilities Broward County Public School
 Palm Beach County Public School Brevard School Sabal Palm Rehabilitation

Funding History (1994-98)

<u>Year</u>	<u>PEPC/DOE Funding Recommendations</u>	<u>Legislative Appropriation</u>
1994	\$215,280	\$215,280
1995	\$281,410	\$215,280
1996	\$306,600	\$215,280
1997	\$326,389 (700 SCH)	\$215,280
1998	\$341,915 (700 SCH)	\$215,280

NOVA SOUTHEASTERN UNIVERSITY - MS IN SPEECH/LANGUAGE PATHOLOGY

1999-2000 Contract Recommendation

University Request: State support for 700 student credit hours (SCH).

Commission Recommendation: \$ 335,958 to support 700 SCH

III. FIVE YEAR ACADEMIC CONTRACT REVIEWS

As required in statute, the five-year review of existing academic program contracts began in 1988. Five year reviews are coordinated by the Department of Education's Office of Postsecondary Education Coordination with the support of Commission staff. The five year review is a comprehensive study of the contract and is more rigorous than the annual review process. It is similar to the initial proposal evaluation conducted by the Commission before a contract is recommended to the State Board of Education for approval (See Appendix B).

In most cases, an external consultant with expertise in the specific discipline of the contract is retained to facilitate the review. A Review Team, typically consisting of the external consultant, Office of Postsecondary Education Coordination staff and Commission staff, reviews a five-year report on the contract program submitted by the contract administrator of the independent institution and visits the campus to tour the educational facilities and interview administrators, faculty and students. This year, five-year reviews were conducted for the following contract programs:

- A. BS IN ENGINEERING - Florida Institute of Technology**
- B. BS IN NURSING - University of Miami**
- C. MASTER OF SOCIAL WORK - Barry University**
- D. DOCTOR OF OPTOMETRY - Nova Southeastern University**

The results of the five-year reviews and the Commission's recommendations regarding continued funding for the four contracts follow. The consultant reports appear in the Appendices.

A. BACHELOR OF SCIENCE in ENGINEERING - Florida Institute of Technology

Introduction

The Florida Institute of Technology is a coeducational, independent university of approximately 4,200 students that is dedicated to the sciences, engineering, humanities, business, aeronautics and related disciplines. Florida Tech was initially funded by the 1981 Legislature at \$124,000 to support three engineering programs. The funding level was gradually increased and was funded in 1988 at \$512,293 to support 120 full-time-equivalent students in seven engineering programs. Since that year, the Legislature has maintained the level of funding each year, which has resulted in a steady decline in the number of funded students. A history of state funding for this contract program has been provided by the College and appears in the table below.

TABLE I

ACADEMIC YEAR	CONTRACT FUNDING	STUDENTS SUPPORTED	CREDIT HOURS SUPPORTED
1988	\$512,293	110	3140
1989	\$506,777	101	2853
1990	\$477,677	98	2310
1991	\$451,094	74	1975
1992	\$429,484	58	1684
1993	\$401,346	48	1239
1994	\$401,346	43	1030
1995	\$401,346	41	959
1996	\$401,346	38	926

In 1997, F.W. Olin announced a \$50 million grant to Florida Institute of Technology, one of the largest grants ever made by a private foundation to higher education. The Olin grant includes \$25 million outright: \$21 million to construct two new state-of-the-art building complexes and \$4 million for College of Engineering infrastructure. An additional \$25 million is a challenge grant for endowment that must be matched dollar-for-dollar with funds raised by Florida Tech. The University believes that the \$75 million infusion - \$50 million from the Olin Foundation and a matching \$25 million raised by the institution - will catapult Florida Institute of Technology into the top tier of independent scientific and technological universities. The College reports that much of the income from the \$50 million endowment will go toward scholarships, mainly for students outside of Florida (two-thirds of University applicants are from out-of-state). A 10-15 percent enrollment increase has been projected by the College for Fall 1998.

To assist in the five-year contract review of the State contract, the Department of Education's Office of Postsecondary Education Coordination contracted with Dr. John Prados, Vice President Emeritus and University Professor in Chemical Engineering, The University of Tennessee. The comprehensive review included administrator, faculty, student and alumni interviews and a tour of the programs, departments and college facilities. Dr. Prados' consultant report appears in Appendix C.

Facilities

The University currently operates over 40 buildings on 130 acres at its Melbourne campus. The College of Engineering currently utilizes the seven-story Crawford Science building for its programs in electrical and computer engineering, mechanical and aerospace engineering, applied mathematics, computer science, operations research and physics and space sciences. The Link Engineering building accommodates oceanography, environmental science, ocean engineering, biological sciences, chemistry and chemical engineering. Skurla Hall houses the School of Aeronautics.

Construction continues on the F.W. Olin Engineering Complex, which is scheduled to open Fall 1999. The building will provide state-of-the-art instructional facilities for both the creation and delivery of computer-based, network delivered, interactive engineering education. The new complex will house the Division of Electrical and Computer Science and Engineering and the Division of Engineering Sciences, and will include 26 specialized research and teaching laboratories and a large, multimedia lecture hall. The building has been designed to accommodate the latest educational technology in the classrooms, and only classes that use this technology will be scheduled in the building. In addition, the new F.W. Olin Life Sciences Building will house all of the biological sciences programs.

The College reports that research laboratories have been expanded in all of the programs to provide more “hands on” experiences for the students, including new computer laboratories for the computer engineers, a new laboratory for the chemical engineers, a new flow lab for civil, mechanical and ocean engineers, a new engine test laboratory for the mechanical engineers and a new wind tunnel for the aerospace program. In addition, the use of computers has been integrated into all phases of courses and laboratories. Eight million dollars worth of new equipment has been contributed by local industry and government, including materials testing systems machines, laser systems and electronic equipment related to microcomputer processing.

Students

The College reports that approximately one-half of the University’s enrollment is involved in engineering programs. Approximately one-third of the College’s enrollment is Florida residents (10 percent from Brevard County), one-third are from the middle-Atlantic and Northeast states and approximately 20 percent are from outside the US. The University maintains a sizable off-campus graduate program in engineering and the sciences.

Data compiled by the College confirm that student demand for the Florida Tech engineering programs has remained fairly constant during the review period. See Table 2 below.

Table 2

College of Engineering Admission Statistics

	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Number of Program Applicants	921	783	921	873
Number of Applicants Admitted	767	672	806	762
Number of Applicants Denied	101	67	66	71
Number Admitted and Enrolled	216	191	269	222

In Table 3 and 4 below, the College reports the following ethnicity for its engineering students and for its contract-supported students during the review period.

Table 3

**College of Engineering Students
by Gender and Ethnicity**

	<u>Female</u>	<u>Male</u>	<u>Am.Ind.</u>	<u>Asian</u>	<u>Black</u>	<u>Hisp.</u>	<u>White</u>	<u>Other</u>
1994-95	114	547	2	25	22	47	367	198
1995-96	130	556	2	20	23	51	372	218
1996-97	124	630	1	23	28	57	375	270

Table 4

**Contract-Supported Students
by Gender and Ethnicity**

	<u>Female</u>	<u>Male</u>	<u>Am.Ind.</u>	<u>Asian</u>	<u>Black</u>	<u>Hisp.</u>	<u>White</u>	<u>Other</u>
1994-95	18	25	1	0	1	3	38	0
1995-96	16	25	0	0	1	2	37	0
1996-97	16	22	0	0	1	3	34	0

The College reports that it works to distribute the state tuition assistance grants equitably among the engineering programs, to distribute the awards among the four year classes equally, to support Brevard County students and to provide opportunities for community college students to transfer to Florida Tech.

The consultant team interviewed 17 engineering students that have been supported by the state contract. The students were very articulate and spoke openly regarding the importance of the

state contract to their matriculation. Most of the students indicated that it would be impossible for them to stay at Florida Tech without the tuition assistance. The College appears to make significant efforts to make the tuition grants available to academically strong graduates of area community colleges, which facilitate transfer from the colleges through articulation agreements. The grants appear to be particularly helpful to non-traditional students from the Brevard County region who are working and attending the University part-time.

The students reported that they selected Florida Tech because of its reputation, the faculty interest in the students, its relatively small size and its proximity to industry, particularly those industries related to the space programs. Students who are preparing for graduation reported that they have numerous employment offers and options.

Engineering Education in Florida

Florida Institute of Technology - Florida Institute of Technology is the only university in the rapidly growing region of East Central Florida providing engineering education to Florida residents and is the only college of engineering in the State that offers all six of the contract-supported programs. The College of Engineering is composed of four divisions: Electrical and Computer Sciences and Engineering, Engineering Sciences, Marine and Environmental Systems, and Interdisciplinary Programs. The College offers nearly 90 degree programs in the areas of Applied Mathematics, Computer Science, Civil and Environmental, Oceanography/Ocean, Chemical, Electrical and Computer and Mechanical and Aerospace Engineering. All seven engineering degree programs are accredited by the Accreditation Board for Engineering and Technology (ABET). The State contract currently supports students in six of the seven engineering degree programs: Chemical, Civil, Computer, Electrical, Mechanical, and Ocean Engineering.

The University's location in Melbourne, Florida enables its engineering students to have significant opportunities for internships and cooperative education experiences in one of the country's most active high-tech regions which includes the Kennedy Space Center, Harris Corporation, Lockheed, Martin Marietta and McDonnell Douglas, as well as direct access to the Indian River Lagoon and the Atlantic Ocean. Students also benefit from the College's active research and development programs with numerous grants and contracts from government and industry.

Table 5 below, compiled by the Florida Tech College of Engineering, identifies other engineering degree programs in the State.

TABLE 5

Florida Universities Offering Similar Engineering Programs to Florida Tech

<u>SCHOOL</u>	CHEM	CIVIL	<u>ENGINEERING PROGRAM</u>		MECH	OCEAN
			COMP.	ELECT.		
U F	X	X	X	X	X	(1)
Florida A&M *	X	X	-	X	X	-
FAU	-	-	X	X	X	X
FIU	-	X	X	X	X	-
FSU *	X	X	-	X	X	-
UCF	-	X	X	X	X	-
USF	X	X	X	X	X	-
U Miami	-	X	X	X	X	-

- Joint program
- (1) in the concentration of Coastal & Oceanographic Engineering

The 1994 State University System *Engineering Education Program Review* found that, during the period from 1990 through 1994, the number of baccalaureate engineering degrees awarded in the SUS increased by 5.4 percent, the number of master's and professional degrees increased by 49.4 percent and the number of doctoral degrees increased by 21.5 percent. The closest engineering schools in the State University System (SUS) are at the University of Central Florida in Orlando (60 miles away) and at Florida Atlantic University in Boca Raton (approximately 120 miles away).

University of Central Florida - The University of Central Florida offers undergraduate and graduate degree programs in Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering Technology, Industrial Engineering and Management Systems and Mechanical, Materials, and Aerospace Engineering. The College of Engineering has over 100 full-time faculty members; 97 percent hold doctorate or terminal degrees. Faculty teach over 80 percent of all classes. The faculty/student ratio is 20:1.

In the most recent fiscal year, the college received nearly \$7 million in externally funded research contracts, providing many students with educational and employment opportunities. Fifty percent of the funding was obtained from federal, state, and local government, 33 percent from professional nonprofit organizations and 17 percent from business and industry. The College reports that 80 percent of all students within the college have work experience before graduating and 95 percent obtain jobs.

According to College data, the Fall 1997 College enrollment was 2,938 students, including 445 freshmen, 365 sophomores, 303 juniors, 1,073 seniors, 551 Masters, 174 Doctoral and 26 Post Baccalaureate students. College graduates during 1997 included: baccalaureate degree: 332 males, 88 females; master's degree: 191 males, 38 females; and doctoral degree: 26 males, 2 females.

In the Brevard County area, the UCF College of Engineering offers approximately 13 undergraduate courses via videotape and interactive television. Master's level courses are also offered via video and approximately 30 undergraduate and 60 graduate students partake in these

programs. For Kennedy Space Center employees, the College offers a master's degree in engineering management.

Florida Atlantic University - The Florida Atlantic University College of Engineering offers the following engineering degree programs: computer science (BS, MS, Ph.D.), computer engineering (BS, MS, Ph.D.), electrical (BS, MS, Ph.D.), mechanical (BS, MS, Ph.D.), ocean (BS, MS, Ph.D.), civil (MS) and manufacturing system engineering (MS).

The College reports that enrollment in the engineering programs has remained reasonably static over the past five years, showing only minimal fluctuations in number of students applied, admitted, and enrolled. More transfer students apply, are admitted and enroll than true freshmen; transfer students outnumber freshmen enrollees by a margin of nearly 2:1. The computer science program has experienced this disparity on a much greater scale, as transfer students outnumber freshmen students by approximately 7:1. The College reports that there was a sharp increase in applicants and subsequent enrollees in the computer science program during the 1997-98 school year.

The College reports that, according to projections calculated by the Bureau of Labor Statistics, engineering and computer-oriented fields are among the fastest growing employment opportunities for the future. Anecdotal information included in the College's report indicates that the job market is very strong, particularly with regard to those individuals possessing strong computer skills and backgrounds. The report states that FAU graduates "are having no problems in finding good positions with excellent starting salaries." FAU College of Engineering projections for 2010 include: 3,500 students, 105-110 faculty members, \$20,000,000 in sponsored research, six new degree programs and new engineering facilities.

University of Florida - The University of Florida College of Engineering consists of twelve departments: Aerospace Engineering, Mechanics and Engineering Sciences, Agricultural and Biological Engineering, Chemical Engineering, Civil Engineering, Coastal and Oceanographic Engineering, Computer and Information Science and Engineering, Electrical and Computer Engineering, Environmental Engineering Sciences, Industrial and Systems Engineering, Materials Science and Engineering, Mechanical Engineering and Nuclear and Radiological Engineering. In addition, there is an interdisciplinary graduate program in Biomedical Engineering. All departments offer bachelor's, master's and doctoral degree programs except the Coastal and Oceanographic Engineering Department and the Biomedical Engineering Programs which offer graduate degrees only. Among the 20 colleges and schools at UF, research expenditures by the College comprise about 20% of all such expenditures. The current research budget is about \$56 million. This ranks UF 18th among all US colleges of engineering in the research category.

College data reveal that during 1997-98 there were 280 tenured/tenure track faculty, 3,966 undergraduate students and 1,487 graduate students in the College. The College enrolls over 20 percent of the graduate students at UF. In 1997, 102 doctoral degrees, 330 master's degrees and 713 bachelor's degrees were awarded within the College.

The College reports that there continues to be excellent support from Florida industries and the Florida Society of Professional Engineers for the engineering programs. The College is recognized nationally for its quality and productivity. In 1998, the US News and World Report ranked the UF College of Engineering's graduate programs 19th among all public Colleges of Engineering in the United States.

Twelve Academic Departments, twenty Research Centers, two Service Centers, and two major Research Programs share in developing and implementing the college's education and research programs. These COE institutions include: Center for Advanced Studies in Engineering, Center for Applied Optimization, Biomedical Engineering Center, Computer Vision and Visualization, Database Systems Research Development Center, Eglin Graduate Engineering & Research Center, Energy Analysis and Diagnostic Center, Center for Environmental Policy, Center for Intelligent Machines and Robotics, Interdisciplinary Center for Aeronomy and Atmospheric Sciences, Innovative Nuclear Space Power and Propulsion Institute, Integrated Electronics Center, Machine Tool Research Center, Major Analytical Instrumentation Center, MICROFABRITECH Program, Mind-Machine Interaction Research Center, Mineral Resources Research Center, Software Engineering Research Center, Southern Technology Application Center, Center for Surface Science and Engineering, Transportation Research Center, Center for Wetlands & Water Resources Research, and the NSF Engineering Center for Particle Science and Technology.

Engineering Education Program Review - In 1994, a State University System ***Engineering Education Program Review*** was conducted for all engineering programs in the state universities. The report identified trends in engineering employment and education, reviewed individual campus programs and presented findings and recommendations on several system-wide issues. The ***Review*** recommended that "no new colleges of engineering be considered until the present engineering colleges and departments are sufficiently funded at a level that will make high quality engineering education possible."

The 1994 ***Program Review*** examined enrollment and graduation data for Black and Hispanic students and found continued growth of Black undergraduate enrollment in SUS programs, but found that the percentage of Blacks among engineering baccalaureate degree recipients "is only about half their percentage among undergraduates." The ***Review*** recommended that "all SUS engineering schools continue and intensify their efforts to recruit and retain to graduation members of underrepresented groups at all degree levels" and that "additional academic and personal support be provided for Black undergraduate engineering students to improve their rates of retention and progression to graduation."

Demand for Graduates

According to information provided by the Department of Labor and Employment Security, discussions with academic faculty, administrators and employers and the report of the independent consultant, demand for graduates in engineering programs is strong both nationally and in Florida, and will remain strong in coming years.

Nationally, employment figures and starting salaries for engineering programs at FIT are projected to increase based upon a report by the Commission of Professionals in Science and Technology (1998) and a salary survey conducted by the National Association of Colleges and Employers (1998), as noted by the tables below:

Table 6

Employment Projections

<u>Discipline</u>	<u>Employed 1996</u>	<u>Employed 2006</u>	<u>% Increase</u>
Aerospace Engineering	53,000	57,000	7.8
Chemical Engineering	49,000	57,000	15.0
Civil Engineering	196,000	231,000	17.9
Computer Engineering	216,000	451,000	109.1
Electrical Engineering	367,000	472,000	28.6
Mechanical Engineering	228,000	264,000	15.8
Ocean Engineering	[Data Not Reported]		
Computer Science	212,000	461,000	117.8

Table 7

Average Annual Starting Salaries

<u>Discipline</u>	<u>1997</u>	<u>1998</u>	<u>% Increase</u>
Aerospace Engineering	*	37,456	*
Chemical Engineering	42,802	45,591	6.5
Civil Engineering	33,031	35,705	8.1
Computer Engineering	40,093	42,436	5.8
Electrical Engineering	39,546	42,629	7.8
Mechanical Engineering	38,287	40,750	6.4
Ocean Engineering	*	43,667	*
Computer Science	37,215	40,843	9.8

* Too few offers reported to provide useful statistics

Another measure of the high level of demand for graduates trained in engineering and other high-technology areas is found in the recent passage by the United States Senate of the American Competitiveness Act, which will allow U.S. companies and universities to hire the best talent in the world by providing additional temporary H-1B visas over the next five years. The country's thriving economy has driven several U.S. companies to recruit employees-particularly those in technical fields-from abroad. The bill raises the number of available visas from 65,000 this year to 85,000 in the remaining four years. The legislation also provides college scholarships

for low income students for high tech fields and training for the unemployed at funding level to be appropriated. "There is probably no more important legislation that the Senate will pass this year that will create jobs and continue the enormous growth of our high-tech and computer industries," said U.S. Senator Spencer Abraham (R-Michigan), the legislation's sponsor. "The ramifications are considerable. Many U.S. companies, from Intel to the Ford Motor Company, have informed us that critical projects will be abandoned or put on hold if this legislation is not enacted quickly this year. It could cost us many American jobs, layoffs could result and economic growth could be impacted," Abraham said.

On a statewide level, the demand for engineering is high and will remain constant in the future. According to the Florida Department of Labor and Employment Security, Engineering and Management Services are the second fastest growing industries in Florida, with a 44 percent increase in employment projected between 1994 and 2005, and rank seventh in gaining the most new jobs. The following "fastest growing occupations" are relevant to this review:

1. Systems analyst
3. Computer engineer
52. Engineering, Math, Natural Sciences Manager
60. Computer programmer

Targeted high demand/high wage occupations for Florida according to the Department of Labor Statistics are as follows:

3. Computer engineer
8. Engineering, Math, Natural Science manager
35. Electrical and electronic engineer
36. Flight engineer
37. Civil engineer
47. Mechanical engineer
69. Aeronautical and astronautical engineer
101. Mechanical engineering technician
113. Engineering teacher
119. Sales engineer
128. Industrial engineer
130. Civil engineering technician

According to Dr. Melvin Anderson, Associate Dean of Engineering at the University of South Florida, the demand for engineering graduates in the various fields is very high--so much so that Florida does not produce enough graduates. "Florida is a net importer of engineering graduates because there are simply not enough in-state graduates to satisfy the demand for them. For instance, Lucent technologies has recently announced their intent to expand and their need for hundreds more engineering graduates." Dr. Anderson indicated that computer and information engineers are among the most sought-after, and are indeed often "wooed" away by local organizations before they receive their degree. Even though the demand is great, undergraduate enrollment remains flat at the University of South Florida. Dr. Anderson cites two reasons: (1) the demanding nature of the discipline drives students to other majors in which they feel they can

obtain a degree which will afford them the same standard of living as engineering without the rigorous training involved and (2) inadequate preparation on the secondary school level--he feels that many students who consider engineering do not perform well in introductory calculus classes due to inadequate preparation in high school mathematics and physics.

Although certain employment opportunities that depend on federal funding--e.g., through NASA and the Department of Defense--appear to be stable or declining, the strong commercial economy and the need for replacement and enhancement of civil infrastructure--highways, bridges, airports, water supply and sewage systems--should remain strong. Local employment demand for aeronautical, civil, mechanical, and ocean engineering graduates is also expected to continue to be strong, though not at the level expected for computer science and computer engineering graduates. Demand for chemical engineering graduates is strong at the national level, but opportunities in Florida are more limited due to the absence of any concentrations of chemical and petroleum manufacturing facilities. However, chemical engineering graduates are particularly well prepared to fill environmental engineering roles, and FIT has wisely chosen to emphasize this area in its chemical engineering program. Of particular significance are the reports of employers in the Brevard County area that FIT engineering graduates' performance is fully competitive with that of graduates of larger and better known engineering schools. A number of FIT engineering graduates were reported to have risen to positions of leadership with their employers and to have performed commendably in these roles.

Data extracted from the Florida Industry and Occupational Employment Projections, 1994-2005 are shown in the following table:

Table 8

1994-2005 Brevard County Employment Projections

<u>Discipline</u>	<u>Ten Year % Increase</u>	<u>Average Annual Openings</u>
Aerospace Engineering	20.34	39
Chemical Engineering	5.77	1
Civil Engineering	30.46	26
Electrical Engineering	1.96	75
Computer Engineering	47.44	63
Mechanical Engineering	19.14	27
Ocean Engineering	20.00	0

According to Mr. Jim Gracey, the Director of the Career Counseling Center at the University of Central Florida, there are "tremendous needs" for engineering graduates, especially in the computer and information technology areas. Mr. Gracey indicated that three times the current number of graduates could be placed due to the high demand for their services. For example, he noted that within a period of one year, the number of technical companies interviewing and hiring engineering graduates has more than doubled, from 33 to 75. Statewide, the number moved from 117 to 219. This tremendous need is due in part to the downsizing surge of the

1980s, during which companies attempted to streamline their operations. Companies that downsized, however, seriously underestimated their need for engineering graduates, especially those with information technology skills. Mr. Gracey concluded that the technology explosion of the early 1990s has caused a resurgence for the need for graduates of engineering programs, a demand that should continue for the next several years.

During its campus visit, the consultant team conferred via speaker telephone with the following employers of Florida Tech engineering graduates: Northrop-Grumman Aerospace Corporation, ImageLinks Inc., Paravant Computer Systems, Inc., Logistics Operations at Kennedy Space Center, Johnson Controls World Services, Inc. and GSMA Systems, Inc. Discussion centered on the current and projected needs for engineering graduates among the employers represented. These employers confirmed that demand for engineering graduates, locally, regionally and nationally, is expected to remain high for the next several years. The employers consistently reported that Florida Tech graduates have excellent academic preparation and that demand for technically-trained engineers in industry will continue to outstrip supply.

Contract for State Support: Issues and Recommendations

Program Quality and Need - Dr. Prados concluded, as did the staff of the Department of Education and the Commission, that the Florida Technological University's baccalaureate engineering programs are exemplary and are "providing a valuable service to Florida residents and to engineering employers in Florida." As was reported, the College of Engineering has received special recognition by the F.W. Olin Foundation (along with a sizable grant) for the excellence of their management and for the capability for further growth to become one of the leading private engineering institutions in the US.

The consultant team confirmed that this region has become a center of high technology, particularly in the areas of aerospace, electronics and computers, with steady growth in start-up industries, joint business ventures and research programs. The Florida Tech programs enable both traditional and non-traditional students in the East Central Florida region to obtain affordable engineering education and provide an augmented source of engineering talent for area employers.

Program Diversity - The College reports that it makes a concerted effort to encourage minority students to apply for admission and focus financial assistance for minority students who may have substantial financial need. However, the College has largely been unsuccessful in the recruitment, retention and graduation of minority students. Data in Tables 3 and 4 show that College enrollment for 1996-97 included 3.7 percent Black students and 7.6 percent Hispanic students. For each of the years 1994 through 1996, the State contract supported one Black student and three Hispanic students.

State Funding - State support for the contract peaked in 1988 at \$512,293. Since that year, additional state budget reductions further reduced the level of funding for the contract. State support has steadily declined as the Legislature has held the state appropriation for each contract relatively constant, in effect, "rolling over" the previous year's dollar amount each year. This action has resulted in a continued erosion of the funding level, as increased tuition and program

costs each year have steadily reduced the number of students supported. Data in Table 1 confirm the decline in the number of students served by the contract. Since 1993, the annual appropriation has held constant at \$401,346.

The 1997 Commission recommended state support for 2000 semester credit hours for the 1998-99 academic year at a projected cost of \$901,040. The 1998 Legislature, however, appropriated the same dollar amount as in previous years: \$401,346.

The Florida Institute of Technology College of Engineering summarized its report by stating that “to adequately serve the industry in Brevard County and the Space Coast, and to more adequately provide opportunities for the high school and community college students of Brevard County to study engineering, the number of students to be supported under this program should return to the levels of the beginning of this decade.” For the 1999-2000 academic year, the College of Engineering requests state support for **2112 semester credit hours** or approximately **66** students.

To proceed toward full funding of this contract, the Commission recommends that the contract be funded for the 1999-2000 year to support 2000 semester credit hours at an estimated cost of \$921,600 for the academic year .

B. BACHELOR OF SCIENCE IN NURSING - University of Miami

Introduction

The academic contract for the Bachelor of Science in Nursing at the University of Miami was established to provide baccalaureate nursing education to registered nurses employed in Southeast Florida. The University of Miami was the first school to offer baccalaureate nursing education in South Florida and the first in the region to offer a special RN-BSN Transition Program. The mission of the School of Nursing recognizes the need for nurses skilled in culturally-focused nursing care in a region that has had and will continue to have a large influx of immigrants, migrant workers and refugees. The nursing curriculum utilizes transcultural/multicultural nursing as an organizing focus and provides the opportunity for full-time students to complete the degree requirements in one calendar year. Upper division nursing academic content includes a strong emphasis on the integration of arts and sciences with nursing, and an extension of the RN's knowledge and skills in clinical and leadership roles that are not traditionally a part of associate degree and diploma nursing education curricula.

The University of Miami RN-BSN contract was initially funded by the 1979 Legislature at \$200,000. The funding level was gradually increased and was funded in 1988-89 at \$460,673 to support 60 FTE students. In 1989, the Commission recommended that the contract be reduced to support 40 FTE due to nursing program developments at Florida International University and at Florida Atlantic University. Since that year, the Legislature has maintained the level of funding each year which has resulted in a steady decline in the number of funded students due to increases in tuition and program costs. These increases in tuition and program costs have caused the real value of the contract dollars to decline.

TABLE I

Funding History 1994-98

<u>Year</u>	<u>PEPC/DOE Funding Recommendations (FTE/SCH)</u>	<u>Legislative Appropriation</u>
1994	\$697,380 (40/1200)	\$331,091
1995	\$488,218 (797 SCH)	\$331,091
1996	\$515,005 (797 SCH)	\$331,091
1997	\$541,243 (797 SCH)	\$331,091
1998	\$567,878 (797 SCH)	\$331,091

Although the 1997 Commission recommended funding for the RN-BSN program for 797 SCH for 1998 at a cost of \$567,878, the 1998 Legislature appropriated \$331,091 for the 1998-99 year. To assist in the review of the academic contract, the Department of Education's Office of Postsecondary Coordination contracted with Dr. Joyce Shoemaker, Dean of the School of Nursing at the Medical College of Ohio. Dr. Shoemaker's report appears in Appendix D.

Baccalaureate Nursing Education

Nurses are educated on many different levels. Registered Nurse (RN) training can be obtained through diploma, associate degree and baccalaureate degree programs. Since hospital-based diploma programs in Florida have recently been phased out, the primary pathways available for RN training are associate degree (ADN) and baccalaureate degree (BSN) programs.

In its 1996 position statement, the American Association of Colleges of Nursing (AACN) recognized the Bachelor of Science degree in nursing as the minimum requirement for professional nursing practice. AACN believes that baccalaureate prepared nurses "function with more independence in clinical decision making, case management, provision of direct bedside care, supervision of unlicensed aides and other support personnel, guiding patients through the maze of health care resources, and educating patients on treatment regimens and adoption of healthy lifestyles." The organization stresses that baccalaureate nursing preparation provides a greater orientation to community-based primary health care and focuses on health promotion, maintenance and cost-effective coordinated care.

According to the National Advisory Council on Nurse Education and Practice, federal resources should be utilized to increase the number and overall percentage of baccalaureate prepared nurses. The Council's report recommended the adoption of a policy target that increases the proportion of RNs who hold a baccalaureate degree or higher to two thirds by 2010. Methods to achieve this goal may include funding for curricula innovations in existing baccalaureate programs (particularly RN-BSN programs), establishing collaborative arrangements between community colleges and universities, funding state-level education consortia aimed at assuring widespread access to baccalaureate nursing education, increasing recruitment efforts and student support activities, and funding partnerships for clinical experiences between baccalaureate programs and HMOs, Community Health Centers, Public Health departments and Home Health Services. The Council also recommended that federal funding be targeted for RN-BSN programs to provide full-time student support for students who graduated from associate degree or diploma programs prior to 1996 so that they can complete the program within a two year period.

The number of RNs returning to school to pursue a baccalaureate degree in nursing is increasing. AACN has reported that between 1975 and 1995, the number of RNs (with hospital diplomas and associate degrees) graduating from BSN programs rose from 3,700 a year to over 9,300 annually.

Nursing Education in Florida

Eighteen Florida colleges and universities offer programs that enable registered nurses who are graduates of associate degree or diploma programs to complete the requirements for the baccalaureate degree with a major in nursing.

The State University System currently has BSN programs at each of the ten universities, including Florida International University and Florida Atlantic University in the southeast region of the State. In the 1996-97 academic year, the State University System graduated 966 BSN students (approximately 33 percent of all SUS BSN graduates attended Florida International University or Florida Atlantic University). Approximately 70 percent of those graduates obtained employment in Florida. For the 1996-97 academic year, the pass rate for nursing licensure for all SUS institutions was 87 percent on the first attempt.

Florida Atlantic University - Florida Atlantic University's School of Nursing offers an RN-BSN Transition Program and a generic baccalaureate program which is a limited access program. The RN-BSN Transition Program is offered at the university's Davie site in Broward, the Boca Raton campus, and the Port St. Lucie campus. The Dean of the School of Nursing, Dr. Anne Boykin, reports that the program could accommodate more RN students, especially if more faculty lines are added. Florida Atlantic University School of Nursing graduated 92 BSN students in the 1996-97 academic year. In that same academic year, 86 percent of graduates who sat for the licensure examination passed it on the first attempt.

Florida International University - Florida International University's School of Nursing offers baccalaureate and post-baccalaureate nursing programs. FIU utilizes three campuses, the North Miami campus, the Broward Community College Davie campus, and the Miami Dade Community College campus in Homestead, to provide the BSN to registered nurses. The program also offers distance learning courses through the Dade County Hospitals' Consortium on Distance Learning. Demand for both the generic program and the RN-BSN option remains strong and steady and Dean DeLois Weekes reports that more students can be accommodated with the addition of faculty lines. The Florida International University School of Nursing graduated 230 BSN students in the 1996-97 academic year. Approximately 85 percent of FIU BSN graduates remain in the South Florida workforce. Seventy-one percent of the students who sat for the licensure examination in 1996-97 passed it on the first attempt.

Barry University - Barry University, an independent institution located in Miami Shores, also has a BSN program. In 1989, a state academic contract was established for Barry University's BSN Accelerated Option Transition Program to annually support 20 FTE students. The program is designed to prepare an individual possessing a bachelor's degree in any field with the necessary training to be employed as a registered nurse. The curriculum for the program is twelve months. The Barry University Accelerated Option, however, does not accommodate students who have already received RN training through diploma or associate degree programs. This program has been a state academic contract program since 1989.

RN-BSN at the University of Miami

The UM School of Nursing believes that the Bachelor of Science in Nursing provides the primary foundation for professional nursing. The State academic contract with the School of Nursing is for the RN-BSN transition program. This program allows RN students to complete a baccalaureate degree in three semesters full-time or in six or more semesters part-time. A primary goal for the School continues to be to provide flexibility and creativity in the education of the non-traditional student. The program provides a weekend option, initiated during 1997, to accommodate students who are working while attending school. The implementation of this option for intensive weekend training has added 15 additional students to the program. In the past five years, the University of Miami BSN program has graduated 120 RN-BSN students. Continued growth in the program is expected.

For the 1996-97 academic year, 48 students (17 full-time and 31 part-time) received tuition support through the state contract program. Fifty-two percent of those students belonged to an ethnic minority group. Approximately 92 percent were female. A total of 330 student credit hours were funded through the contract program.

Facilities

The University of Miami School of Nursing is currently involved in a major fundraising effort to build a new multimillion dollar building for the School of Nursing that will provide cutting edge resources for program delivery in the future. The new building will accommodate increased student enrollment and associated learning resource needs, faculty and staff offices, research laboratories and primary care facilities. An additional 800 square feet of usable space has also been acquired for the School of Nursing. The School has recently upgraded its computer laboratory with 16 Pentium 133 multimedia computers. In addition, the School presently manages two nurse-managed health centers that provide excellent clinical education and research utilization opportunities for BSN students.

The University of Miami School of Nursing was selected as one of 46 Schools of Nursing in the country, and one of two in Florida, as a beta test site for the computerized Clinical Simulation Testing (CST) program. The program provides interactive testing that enables examinees to simulate clinical decision-making skills.

The administration and faculty of the University of Miami School of Nursing maintain contracts with over 100 diverse agencies in order to provide for both hospital and community-based student learning experiences. Clinical sites include the AGAPE Women's Center, a residential facility for chemically dependent women, and the R.R. Moton Elementary School Health Clinic. These unique clinical sites, along with hospice, acute care hospitals, and other clinics, expose students to many diverse primary care settings. The School has found that program graduates often return to work in clinical settings with client populations of their own cultural background.

Students

In South Florida, there has been an abundance of graduates from associate degree and diploma schools and the UM College of Nursing recruits a majority of its students from Miami-Dade Community College, Jackson Memorial Hospital, Broward Community College, Key West Community College and Palm Beach Community College. Although the admissions statistics have remained relatively stable during the review period (see Table 2), the College reports that there has been a recent increase in student interest in the RN-BSN program.

Table 2

School of Nursing Admission Statistics

	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Number of Program Applicants:	84	45	89	75
Number of Applicants Admitted:	63	40	72	54
Number of Applicants Denied:	0	4	16	2
Number Admitted and Enrolled:	31	33	18	34

Students in the contract program are primarily RNs who are returning to school to obtain a baccalaureate degree. The majority of the program enrollment are older, non-traditional students, who continue to work during their course of study. Students who work full-time can now take advantage of the weekend option that is provided for RN-BSN transition students. A majority of these students enter the RN-BSN transition program with hopes of continuing their education beyond the baccalaureate degree. The baccalaureate degree is the necessary first step in obtaining an advanced or specialist degree.

Students are exposed to various primary care and home health care settings through their clinical experiences and gain a better understanding of the role of nurses in these growing areas. Upon graduation from the program, many students seek employment in community or home-based health care agencies. The baccalaureate degree enables others to move into nurse manager positions and other positions of leadership in the health care community.

Contract-supported students, interviewed by the consultant team during the site visit, indicated that enrollment at the University of Miami would not have been possible without the assistance of the state contract. During the interviews, they discussed the positive aspects of the program. Students found the curriculum challenging and were very impressed with the expertise and availability of the faculty at the School of Nursing. They gave as examples the emphasis in the curriculum on management and leadership, which will prepare them to function effectively in the managed care environment in which they work. The students expressed that the transcultural focus of the program and their exposure to various clinical experiences allowed them to broaden their perspectives, making them aware of many more opportunities and settings for practice. Students also reported that they believe that RNs who become BSNs function as catalysts for change in the health care community. A number of students expressed interest and enthusiasm about continuing their education beyond the bachelor's degree.

The School of Nursing, in the 1996-97 academic year, had a 64 percent minority student population in the undergraduate program. The School has consistently recruited qualified minority students and continues to strive toward preparing culturally sensitive graduates who can work effectively with culturally diverse clients in a variety of clinical settings. The minority enrollment for the RN-BSN option for 1994-97 averages 54 percent. This represents a substantial increase over the 45 percent average identified by the Commission during its previous five-year review of the program.

TABLE 3

Gender and Ethnicity of Contract-supported Students

	Female	Males	Am Ind	Asian	Black	Hispanic	White	Other
1994-95	41	12	0	3	7	15	25	3
1996-96	36	4	0	2	6	12	20	0
1996-97	44	4	1	5	8	11	23	0

An average of 52 percent of minority students enrolled in the RN-BSN Transition option received tuition reimbursement during the 1994-97 period. This represents a seven percent increase in tuition reimbursement funding to minority students over that reported in the previous Commission report.

In the past five years, the UM-BSN program has graduated 120 RN-BSN students. Graduates of the program are employed in South Florida community and ambulatory settings, managed care organizations, and acute, critical and long-term care hospital settings. They are also employed in home health, public health and occupational health agencies and in public and private institutions and organizations.

TABLE 4

**UM School of Nursing
Contract-supported Graduates**

Year Graduated	Number Graduated	Number Employed in Florida	Number Employed Out of Florida	Number Pursuing Education	Number Unknown
1994-95	26	25	0	3	1
1995-96	18	18	0	8	0
1996-97	16	15	1	6	0

Workforce Supply and Demand Issues

National Perspective

According to a survey conducted by Buerhaus and Staiger (1997), nurse executives agreed that employment outlook is brightest for RNs prepared at the baccalaureate and higher levels. The shift from hospital-based care to community and public health will increase the need for nurses

educated at higher levels. Since public health nurses must be prepared to conduct community assessments and develop care programs based on identified client needs, the BSN is the entry credential in many community-focused areas.

The National League for Nursing (NLN) has projected a decline in enrollments for RN-BSN programs. According to the 1996 NLN Annual Survey of Nursing Educational Programs, a common reason for decreasing enrollments is “a lack of perceived job opportunities” which may be a result of the restructuring of the health care system and hospital downsizing. A recent AACN survey reported that decreases in enrollments were due to a shortage of resources, but that returning RN enrollments have continued to increase. AACN also reported that employment opportunities for baccalaureate graduates in nursing are projected to grow faster than the average for all occupations and to outstrip the expected supply by 2010.

According to O’Neil and Coffman (1998), an analysis of trends in RN education suggest that the number of RNs with bachelor’s and advanced degrees is insufficient to meet projected requirements. The authors also report that all racial and ethnic minorities except Asian and Pacific Islanders remain underrepresented among RNs. Nationally, the RN population will remain less diverse than the population as a whole until the number of racial and ethnic minorities completing RN education programs dramatically increases. This issue mirrors the condition in South Florida, where there are numerous large and diverse minority populations with considerable health care needs.

In *Strategies for the Future of Nursing* (1998), O’Neil and Coffman stated that approximately 14 percent of graduates of associate degree programs and 21 percent of graduates of diploma programs continue their education to obtain at least a baccalaureate degree in nursing. Graduations from RN to BSN programs increased by 19 percent between the 1992-93 and the 1994-95 academic years. The number of graduates continues to rise, but “graduations have yet to reach a level at which they will significantly increase the percentage of RNs with bachelor’s degrees.” Enrollment patterns for 1996-97 academic year indicated that 86 percent of students enrolled in RN to BSN programs were enrolled on a part-time basis, thereby increasing the students’ time to degree.

Health care administrators predict that although hospitals will continue to be the largest employers of nurses (60 percent in 1996), primary care settings such as outpatient clinics and home health care agencies will need greater numbers of nurses. Employment opportunities are expected to increase in non-hospital settings such as rural public health clinics, health maintenance organizations (HMOs), homeless shelters, women’s clinics, etc.

Nursing executives increasingly report their desire for the majority of hospital staff nurses to be prepared at least at the baccalaureate level and the National Advisory Council on Nurse Education and Practice has recommended as a policy target that at least two-thirds of the basic nurse workforce hold baccalaureate or higher degrees in nursing by the year 2010.

Florida Perspective

The UM College of Nursing reported on state-level data that shows that there are 115,201 registered nurses in Florida. Of this number, 28,322 (25 %) hold the diploma as the highest nursing-related educational preparation, 48,698 (42 %) hold the associate degree and 29,823 (26 %) hold the baccalaureate degree. Florida falls below the average for South Atlantic states (29 %) for baccalaureate preparation and ranks eighth of nine states in the region.

According to the Commission's 1995 *Florida Health Professions Education Profiles*, workforce supply and demand historically has been cyclical in nature. The need for nurses is expected to increase as the baby boom generation ages. This will occur at the same time that many current older RNs will reach retirement age, which may result in a nursing shortage.

The Florida Department of Health continues to focus toward care delivery at the neighborhood level. All public health nurses must be baccalaureate-prepared in order to conduct community assessments and to develop care programs based on identified client needs. This level of care calls for nurses with extended professional training. Another specific area of need is for school nurses. According to the Dade County Health Department, there are approximately 200 positions available in the area of school health. These positions require knowledge of case management and critical thinking skills that are not addressed in associate degree programs.

Survey of Employers - Commission staff conducted a telephone survey of South Florida employers of nurses and was able to interview ten vice presidents and/or directors of nursing at for-profit and not-for-profit hospitals and health maintenance organizations. The survey sought information on employment trends, future demand, salaries and educational reimbursements and produced the following responses:

- 8 of 10 employers noted an increased demand for baccalaureate-trained nurses at the managerial and specialized position level, such as case manager, clinical specialist, quality manager, head nurse or clinical educator. It is widely believed that the BSN provides nurses with a "broader knowledge base and stronger critical thinking and planning skills."
- One of other two respondents stated that, while BSN nurses possess better leadership skills, the associate-trained nurse yields the same level of bedside care as the BSN nurse.
- The respondents reported that existing BSN vacancies were due to a general need for BSN nurses, managerial position openings, hiring preferences toward experienced nurses or bad location of the facility.
- Five administrators projected an increase in future demand for the BSN nurse in managerial and leadership positions in the delivery of an increasingly complex health care system. Two respondents projected no increase in demand within their organization.

- Four employers reported a salary differential for nurses according to education level, including a higher starting salary for the baccalaureate-trained nurse. Other respondents noted that salary was commensurate with position and that the BSN degree is required for a nurse to advance within their organization.
- Nine respondents reported a tuition reimbursement program at their institution, ranging up to \$2,500 per year at all levels. One facility reimburses \$1500 for BSN work and \$2500 for MSN work.
- The nursing administrators were in agreement that there will be an increased demand for nursing professionals, especially in the managerial and specialized care areas. Nurses can look toward more out-patient and out-of-hospital care and increases in the complexity and changing technology in the delivery of health care.

Contract for State Support: Issues and Recommendations

Program Quality - Dr. Shoemaker concluded, as did the staff of the Commission and the Department of Education, that the University of Miami School of Nursing has an excellent program for RN-BSN transition students. The BSN program is innovative, flexible and maintains a direct link to the South Florida communities. Dr. Shoemaker noted the flexibility in the curriculum that provides a weekend option to accommodate nurses who are fully employed and those with family responsibilities. The UM-BSN program is well-positioned to address the future health care needs of South Florida.

The consultant team interviewed South Florida nursing executives and administrators who are employers of UM-BSN graduates. Without exception, they indicated their preference for these graduates over nurses who were educated in other programs. The employers stated that UM graduates are creative, with good critical thinking skills and a commitment to nursing as a career, have good clinical supervision by faculty and have a total care perspective. One of the employers commented that a strength of the UM program is that “graduates are culturally sensitive and have an understanding of the community.” An employer summarized that UM graduates have “critical thinking, problem-solving, advanced communication skills, the ability to function autonomously, engage in interdisciplinary practice and an understanding of cultural diversity.”

Demand for Graduates - Dr. Shoemaker found substantial evidence of the need for the UM-BSN Transition program. She confirmed that changes in the health care delivery system have created new employment opportunities for nurses in primary care settings and as members of interdisciplinary health care teams. Dr. Shoemaker believes that there is now an oversupply of nurses prepared in associate degree programs and an under supply of baccalaureate and master’s prepared nurses.

The two public sector baccalaureate nursing programs at Florida International University and at Florida Atlantic University provide viable and productive programs in baccalaureate nursing education in South Florida. In addition, the state academic contract for the Barry University School of Nursing RN-BSN Accelerated Option program provides a cost effective program to develop new baccalaureate-trained nurses. Hospital reorganizations in South Florida which have

led to a downsizing of RN staffs, however, have not resulted in a decrease in demand for baccalaureate prepared nurses. To the contrary, Miami's increasing population and the need for nurses in areas outside the traditional hospital setting have resulted in a nursing shortage. During Spring 1998, Dade County nursing deans and directors and nursing executives held meetings to identify strategies to address the nursing shortage in South Florida. Nursing administrators identified vacancies that remain unfilled and confirmed that nurses with education and training are highly recruited with hiring bonuses, raises and other job perquisites.

The Nurse Executives interviewed by the consultant team confirmed that there is an acute nursing shortage in South Florida, and expressed a need for baccalaureate-trained nurses. The administrators stated that because of the need for additional nurses in most agencies and the shortage of available RN nurses, employers tend to advertise for nurses without stipulating baccalaureate preparation as a condition of employment. In the growing health care employment areas of community and public health, managed care and critical care, however, the preference is clearly for the BSN nurse. In the increasingly complex health care environment, there is a growing need in nursing care for team leaders, directors and managers.

The UM College of Nursing reports that the BSN continues to be the credential of choice for entering and continuing staff nurses in hospitals and ambulatory service programs. Employment information reveals that the five largest hospital employers of nurses in Dade County (Jackson Memorial Hospital, Baptist Hospital, South Miami Hospitals, VA Medical Center and Mt. Sinai Hospital) continue to require the BSN as a minimum requirement for individuals hired into Nurse Manager positions.

Program Diversity - The UM School of Nursing continues its exemplary record and success as far as the production of baccalaureate-trained minority nurses. The program's commitment to the professional nursing education of the region's minority nurses is noteworthy. The School of Nursing strives to maintain an enrollment that is reflective of the cultural diversity of the surrounding communities. Further, through its curricular and clinical requirements, the School works toward preparing culturally sensitive graduates who can work effectively with culturally diverse clients in a variety of health care settings.

As was reported, in the 1996-97 academic year, the School had a 64 percent minority student population in the undergraduate program. The minority enrollment for the RN-BSN option for 1994-97 averages 54 percent. This represents a substantial increase over the 45 percent average identified by the Commission during its previous five-year review of the program. An average of 52 percent of minority students enrolled in the RN-BSN Transition option received tuition reimbursement during the 1994-97 period. This represents a seven percent increase in tuition reimbursement funding to minority students over that reported in the previous Commission report.

State Funding - State support for the UM-BSN contract peaked in 1988 at \$460,673 to support 60 FTE students. In 1989, the Commission recommended that the contract be reduced to support 40 FTE for the 1990 and 1991 academic years. Since that time, the Legislature has held the state appropriation for each contract relatively constant, in effect, "rolling over" the previous year's dollar amount each year (See Table 1). This has resulted in a continued erosion of the

funding level, as increased tuition and program costs each year have steadily reduced the number of students supported each year. During this period, the level of student credit hour support stated in the specific legislative appropriation for each contract program has had no relation to the actual number of students served by the state dollars.

The 1997 Commission recommended state support for 797 semester credit hours for the 1998-99 academic year at a projected cost of \$541,243. The 1998 Legislature, however, appropriated the same dollar amount as in the previous five years: \$341,091.

The University of Miami School of Nursing projects an increase in enrollment in the BSN program, particularly in part-time students. For the 1999-2000 academic year, the School requests state support for 1284 semester credit hours.

To proceed toward full funding of this contract, the Commission recommends that the contract be funded for the 1999-2000 year to support 800 semester credit hours at an estimated cost of \$595,640.

C. MASTER IN SOCIAL WORK - Barry University

Introduction

Barry University's Master in Social Work (MSW) Program was first funded by the Legislature in 1979 at \$62,126. Contract funding for this program peaked in 1990 at \$252,680. Because of the growth of the MSW at Florida International University, the Commission recommended that funding be gradually reduced for the contract program. In 1991, the Commission recommended, and the Legislature approved, a contract for the Barry MSW program at its Ft. Myers campus. In 1993-94 Barry phased out this program because of a similar program offered in Ft. Myers by the University of South Florida (USF) and an impending one at Florida Gulf Coast University. Despite Commission recommendations, the Legislature never reallocated those funds to the MSW program at the Barry main campus. In 1993, the Legislature furthered reduced the funding for the program to \$193,734, where it has remained for six years despite the Commission's recommendations for increased state support.

Barry Master of Social Work Program

This program responds to the rapid growth in South Florida and resultant demand for social services by preparing persons with bachelor degrees for professional social work practice in social, health and welfare agencies. In South Florida, increased demand is due to needs posed by urban poverty, new arrivals of immigrants and a high proportion of senior citizens. The Barry MSW program was reaccredited in 1994 for the eight year cycle by the Council on Social Work Education (CSWE), the national accrediting body for social work degree programs in the U.S. The accreditation review was very positive, highlighting the many strengths of the Barry program.

According to consultant Dr. Bogart R. Leashore, Dean of the School of Social Work at Hunter College of the City University of New York, the Barry MSW program is a nationally recognized, high quality clinical social work program that is distinguished from the five public sector MSW programs in Florida by a focus on clinical social work. The Barry curriculum is enriched by practice course electives which focus on pressing social problems such as HIV/AIDS, substance abuse, health care, aging, adolescents, and mental illness.

Facilities

During its 1993 five-year review, Commission staff noted that the school of social work was in need of new, expanded facilities for its MSW program. A new facility for the schools of social work and education was completed in 1994. The new space significantly enriches the school's ability to accommodate the needs of its students. The social work wing provides office space for all school faculty and administrators as well as space for funded projects. There are also two doctoral seminar rooms as well as sufficient class rooms to accommodate all MSW classes in the building. Conference and meeting space is also provided. According to Dean Stephen Holloway, the new facility has profoundly enhanced the school's ability to better serve its student body.

Curriculum

As noted previously, the Barry curriculum is more heavily clinical than other Florida MSW programs offered by the public sector. According to the consultant, the clinical focus of the program is consistent with the content requirements of the CSWE. Varied theoretical frameworks are taught throughout the curriculum. As noted during the 1998 site visit and five-year review, the Barry program is increasingly using the field unit structure, which consists of several students placed as a group or student unit in the same agency under the supervision of the agency social worker. According to Dr. Leashore, there has been a recent resurgence of interest among schools of social work in using the field unit model. Few, however, have been able to do so. The Barry School of Social Work seems to be in the forefront of the movement to reestablish these field units. Students reported that this model of field instruction is very effective in helping them learn and work in agency settings, and they have the added benefits of learning from and helping each other. According to students who were interviewed during the five year review, “client-driven” approaches are used during fieldwork, while families tend to be the focus of clinical course work and preparation.

Students

Because a majority of the Barry MSW students are older, returning students who are working, almost half (48%) of the 120 state-supported students in 1996-97 were enrolled part-time. Approximately 30 percent of the entire MSW program was supported to some extent by the contract program. The program is predominately female (like most MSW programs), and a significant number of Barry University’s male MSW students are from racial and ethnic minority groups. According to the consultant, the need for male professional social workers, especially from racial and ethnic minority groups, is a national concern. The school of social work at Barry uses varied recruitment strategies to ensure diversity among its students. A full-time faculty member is dedicated to recruitment and admissions functions.

Site team members (Dr. Leashore, Dr. Glenda Rabby, Commission staff, and Mr. Taylor Cullar from the Department of Education) met with representatives from the Division of Human Services, the University of Miami’s Center for Family Studies, the Miami Jewish Home and Hospital for the Aged, and the Miami Bridge Youth and Family Services Agency, who attested to the professionalism, preparedness and dedication of Barry MSW graduates. These and other employers of social workers in South Florida maintain a professional and collegial relationship with Barry faculty who serve as a conduit for qualified, highly trained social workers.

TABLE 1

Total Enrollment in Program

<u>Year</u>	<u>Contract Students</u>	<u>Non-Contract Students</u>
1994-95	102	322
1995-96	119	265
1996-97	120	174

Students with whom the five-year review team met on April 20, 1998, reported that the MSW program at Barry is of high quality and very demanding. They noted that the program is very “personalized” as students are given individual attention by faculty, something they had much less of as undergraduates at one of the State’s public institutions. These students attributed the close personal relationship with faculty at Barry as a primary reason for choosing the program over less expensive state programs. As many of the MSW students are low-income, the primary criterion for contract support is financial need. In addition to need, merit and mission impact are considered. Merit is assessed through evidence of superior knowledge, social work-related experience, high social activism and high academic achievement. Mission impact concerns the applicant’s potential to perform roles central to the social welfare system. Because state funding has not kept pace with demand for program admission, the MSW program has modified the awarding of contact support from full to partial support. Data provided by Barry University suggest that even modest state support is highly predictive of program completion. Ninety-two percent of students who enroll into the program graduate. Within one month of graduation, 95 percent of MSW students are employed in field.

TABLE 2

Gender and Ethnicity of MSW Students

A. All Students:

	FEMALE	MALE	AM INDIAN	ASIAN	BLACK	HISPANIC	WHITE
1994-95	342	53	1	4	29	17	344
1995-96	309	59	2	2	31	16	317
1996-97	273	62	2	1	45	88	253

B. Contract Supported Students:

	FEMALE	MALE	AM INDIAN	ASIAN	BLACK	HISPANIC	WHITE
1994-95	84	18	0	0	17	23	62
1995-96	101	18	0	0	26	28	65
1996-97	106	12	0	0	19	30	69

Faculty

Twenty-six full-time faculty members, one part-time faculty member and administrators teach in the MSW program. Fourteen adjunct faculty supplement in-house instruction with a wide range of expertise and work experience. MSW faculty, of whom 81 percent are tenured, are well published in the field of social work and all are active in their communities in various social service interests.

Workforce Supply and Demand

Social services are in very high demand in South Florida where the needs posed by urban poverty, high levels of immigration, a high proportion of senior citizens and the impact of welfare reform have resulted in an acute shortage of trained professional social workers. The

MSW is a requirement for State licensure. All social workers who are employed by private social service organizations or who operate a private practice must be licensed. As noted above, over 95 percent of Barry MSW graduates are hired within the field of social services within less than a month after graduation. While the State does not require that social workers be licensed, the Florida Department of Children and Families cites a continuous shortage of trained social work professionals, noting that it is often forced to fill open positions with individuals who are not sufficiently prepared. The Florida Department of Labor and Employment Security's Bureau of Labor Market Information includes social workers among the top 90 job producing occupations in the 1990's, and the *Occupational Outlook Handbook* projects that employment prospects for social workers will increase through the year 2000.

Contract for State Support: Issues and Recommendations

Dr. Leashore concluded, as did the staff of the Department of Education and the Commission, that based on the shortage of trained professional social workers, and due to the high quality of the Barry MSW program, that the state contract should continue to be funded. Because of the high demand for entry into the program, and because so many qualified Florida residents are unable to receive full state support due to the current funding level, the Commission recommends an increase in state funding.

For the 1999-2000 year, the Commission recommends that the Barry University Master in Social Work Program be funded at \$418,419 for 1350 SCH.

D. DOCTOR OF OPTOMETRY (O.D.) - Nova Southeastern University

Introduction

Nova Southeastern University's Doctor of Optometry program was first funded by the Florida Legislature in 1990 at \$84,075 for 15 optometry students at \$5,900 per Florida resident, which was the Southern Regional Education Board (SREB) interstate contracting level. At that time, the Legislature appropriated state funds without subjecting the program to review by the Commission. As of 1992, proviso accompanying its annual appropriation has required the Commission to review the optometry program by the same review provisions as academic program contracts receive. State appropriated funds for the program are placed in the Board of Regents budget for disbursement; the Board of Regents includes funding for this program in its annual budget request. Nova Southeastern University uses some of the state appropriation to reduce the cost of tuition for Florida residents.

**Table 1
Funding History**

<u>Year</u>	<u>PEPC Recommendation</u>	<u>Appropriation</u>
1990-91	----	\$ 84,075
1991-92	----	77,733 (14 students @ \$5,552)
1992-93	\$ 96,000 (15 students @ \$6,400)	158,586 (30 students @ \$5,286)
1993-94	339,500 (51 students @ \$6,657)	313,183 (51 students @ \$6,141)
1994-95	455,400 (66 students @ \$6,900)	331,974 (51 students @ \$6,509)
1995-96	536,250 (75 students @ \$7,150)	331,974 (51 students @ \$6,509)
1996-97	592,000 (80 students @ \$7,400)	969,400 (131 students @ \$7,400)
1997-98	608,000 (80 students @ \$7,400)	969,400 (131 students @ \$7,400)
1998-99	624,000 (80 students @ \$7,800)	969,400 (131 students @ \$7,400)

Prior to funding this contract, the State had contracted with the Southern Regional Education Board for up to 80 students to receive optometric education in other states (Texas and Tennessee). As the contract with NSU increased to prepare optometrists in Florida, the SREB contract was reduced and then canceled. In 1997-98, tuition for the optometry program at NSU was \$17,900 for non-Florida residents and \$13,900 for Florida residents (including contract-

supported students), a difference of \$4,000. Tuition in 1998-99 is set at \$18,900 for non-Florida residents and \$14,900 for Florida residents. The Legislature funded this contract at \$969,400 for 131 Florida residents at the SREB rate of \$7,400 per student in 1998.

To assist in the five-year review of this program, the Commission contracted with Dr. Anthony F. Di Stefano, O.D., M.P.H., Vice President and Dean, Pennsylvania College of Optometry, Philadelphia, Pennsylvania.

College of Optometry

The College of Optometry (CO) at Nova Southeastern University (NSU) is one of 17 accredited schools and colleges of optometry in the United States and the only optometry school in Florida. The Doctor of Optometry is a professional degree which requires four years of post-baccalaureate study. The program was established in 1989, and was accredited in 1997 by the American Optometric Association's Council on Optometric Education. NSU is the product of the merger of Nova University and Southeastern University of the Health Science and is located in Fort Lauderdale.

The mission of the CO is:

To educate and train optometric physicians to practice at the highest level of proficiency, integrity, and professionalism, and to provide a multidisciplinary environment that encourages and supports lifelong learning, scholarship, and community service.

The College is currently in the process of developing a strategic plan as well as an enhanced research plan consistent with the new University goals on scholarship. Dr. Di Stefano stated that:

The College's optometric education philosophy is in harmony with the definition of an optometrist established by the American Optometric Association and includes a balance of basic and clinical sciences with a broad array of clinical experiences both on and off-campus.

Facilities

On June 1, 1996, the Health Professions Division (former Southeastern University of the Health Sciences) moved to its new campus in Davie. The facilities for the College of Optometry are part of a new, \$50 million complex housing the colleges of optometry, osteopathic medicine, pharmacy, allied health, and medical sciences. The College maintains external primary and specialty care clinics at the former facility in North Miami Beach.

The merger and new campus has provided the academic program with state-of-the-art physical resources that were described by Dr. Di Stefano as "outstanding." The consultant complement the University on the facility not only for the program itself but for its physical and programmatic integration with the other health professions programs.

Curriculum, Program, and Clinical Placements

The Commission's consultant stated that the recent accreditation of the program in 1997 by the Council on Optometric Education reflects the profession's public acknowledgment that the College has met the high standards expected by its accrediting body. Dr. Di Stefano pointed to the recent appointment of the new dean, Dr. David S. Loshin, as bringing new administrative leadership to the institution and as energizing the academic community to further strengthen its academic programs. In addition, Dr. Di Stefano cited the recent expansion of the externship program to four three-month rotations that include an elective clinical placement as "very significant." He stated that this change will help strengthen the clinical education program by providing a greater variety of off-campus training sites that will expose students to a rich mix of patient experiences in settings that approximate possible career choices. This program complements the internal clinic that is primarily for third year students.

Dr. Di Stefano listed a number of challenges in the academic program that were underscored by both the Dean and the faculty and that were consistent with the recommendations of the COE site visit. These include: a system to define and monitor the entry level expectations and experiences of the students; the more cost-effective and efficient management of clinics; greater space and resources for faculty to meet the new scholarship and research expectations of the university; and filling a number of vacant faculty positions as well as recruiting an Associate Dean for Academic Affairs.

Dr. Di Stefano complemented the College for its continued academic growth. He stated that "although a number of challenges remain, it seems that the college has the administrative leadership, faculty dedication and university support to continue to improve its academic programs."

Students

In 1996-97, 413 students were enrolled in the O.D. program at NSU, including 130 contract students. The number of students supported by the contract increased to 130 in 1996-97; between 1993-94 and 1995-96, 51 students were contract supported annually (Table 2). Between 1992-93 and 1996-97, college enrollment increased from 239 to 413. Dean David Loshin stated that the college plans to enroll 100 students in each entering class.

NSU's College of Optometry has had limited success in recruiting and enrolling minority students, specifically black and Hispanic students. Between 1992-93 and 1996-97, combined enrollments for black and Hispanic students dropped from 27 percent to 10 percent of college enrollments and from 20 percent to 9 percent of contract student enrollments (Tables 3 and 4). The consultant acknowledged that the college recognizes the need to strengthen and expand its minority recruitment program and provided examples of strategies being implemented. He also pointed out, however that "the lack of significant scholarship funds for these groups [Hispanic and African American] is a major obstacle that should be addressed."

TABLE 2

Total Enrollment in Program

<u>Year</u>	<u>Contract Students</u>	<u>Non-Contract Students</u>
1992-93	30	209
1993-94	51	281
1994-95	51	303
1995-96	51	369
1996-97	130	283

TABLE 3

Gender and Ethnicity of All Program Students

<u>Year</u>	<u>Female</u>	<u>Male</u>	<u>Native American</u>	<u>Asian/Pacific Islander</u>	<u>Black</u>	<u>Hispanic</u>	<u>White</u>
1992-93	148	91	0	39	9	54	134
1993-94	139	203	0	59	16	33	224
1994-95	106	194	0	92	15	30	217
1995-96	175	245	0	107	13	28	287
1996-97	193	235	0	116	13	30	254

TABLE 4

Gender and Ethnicity of Contract Program Students

<u>Year</u>	<u>Female</u>	<u>Male</u>	<u>Native American</u>	<u>Asian/Pacific Islander</u>	<u>Black</u>	<u>Hispanic</u>	<u>White</u>	<u>Other</u>
1992-93	13	17	0		0	6	24	0
1993-94	20	31	0	2	0	3	42	0
1994-95	27	24	0	2	3	4	42	0
1995-96	23	28	0	3	1	6	40	1
1996-97	59	71	0	20	3	9	97	1

The Commission’s consultant, Dr. Di Stefano, noted that the quality of students has risen consistently over the past five years as reflected in both entering GPA as well as performance in the standardized Optometry Admission Test Scores. In addition, in terms of program graduates, Dr. Di Stefano stated that:

The College reported success in a number of formative and summative outcome measures. These include year by year comparisons of grade distribution by individual courses, attrition rate of students, and general performance in the National Board of Examiners in Optometry (NBEO) examinations. In particular, the College should be complemented for its increasing success in Part I (Basic Science) that is considered the most difficult of the Boards. The College’s pass rate over the past three years has been well over the national average. There has been some variability on student performance in Part II (Clinical Sciences) over the past five years, and the College is taking steps to analyze this occurrence.

Dr. Di Stefano noted that special consideration should be given to monitoring student indebtedness and its impact on career options. Increases in health professions student indebtedness is widespread and will influence marketplace dynamics. He encouraged the college to assist student with financial planning and debt management.

Faculty

Dr. Di Stefano stated that “the College has a core of 33 full-time faculty that is complemented by a good mix of part-time, interdepartmental, and adjunct faculty...Interviews with faculty and department chairs reflected a positive orientation and strong commitment to the academic program and student achievement.”

There exist a number of challenges with regard to faculty:

- *Mid-Career Faculty* - As noted in discussions with the Dean and departmental chairs, there is a significant need for mid-career faculty who would bring additional academic experience and mentoring skills to help younger faculty develop.
- *Faculty With Research Experience* - There is also a need to recruit individuals with research experience and commitment in order to respond to the new expectation for greater scholarship and research.

The lack of tenure and research facilities pose significant obstacles in addressing these areas. The development of a multi-year contract system and additional attention to increasing research resources should help to alleviate this problem.

Workforce Supply and Demand

NSU’s CO is an active participant in the professional placement of its graduates. Dr. Di Stefano stated that:

the college is committed to promoting the career success of its graduates, who seek a variety of clinical practice opportunities upon completing the Doctor of Optometry program. It begins with career counseling on an informal basis during the first year and culminates with a web-based placement service that posts employment opportunities for new graduates. It also includes practice management course work and linkages to other employment services maintained by the American Optometric Association, the Association of Schools and Colleges of Optometry, the Florida Optometric Association, and local optometric societies.

The Florida Industry and Occupational Employment Projections, 1994-2005 (statewide; from the Florida Department of Labor and Employment Security, Division of Jobs and Benefits, Bureau of Labor Market Information (1996)), estimates the 15-year growth in optometrist employment as close to 24 percent. This translates to 49 average annual openings (25 openings due to growth and 24 openings due to separations). This estimate approximates the 40-49 annual openings estimated by the college. Also consistent with these estimates is the number of jobs listed last year with the college’s web-based placement service.

As with other professions, the geographic distribution of optometrists is not even. From discussions with faculty and students, it was learned that southern Florida is perceived as having an oversupply of optometrists. Employment opportunities in Florida's metropolitan areas are limited, yet opportunities are more available in rural areas. Overall, Florida is perceived to hold stronger employment opportunities for optometrists than other parts of the nation.

In a recent survey of program graduates, the college contacted 154 graduates and 30 percent responded (46). Approximately two-thirds of all survey respondents were permanent residents of Florida at the time of admission. Of the respondents, 29 (63 percent) identified Florida as their current place of permanent residence. Seventy percent (32) state they currently practice in Florida. The average first professional salary of respondents was approximately \$60,000, and their average current salary was \$60,000 to \$69,000. Approximately one-third of all survey respondents indicated that they are currently self-employed. Dr. Di Stefano encouraged the college to conduct more detailed analyses of practitioner distribution in Florida, including calculation of practitioner-to-population ratios by counties and national comparisons. He encouraged the college to track employment of its graduates through the services provided by the Florida Education and Training Placement Information Program.

Contract for State Support: Issues and Recommendations

For 1999-2000, the college requested funding for 160 Florida residents, an additional 29 students above current funding. There are currently approximately 160 Florida residents enrolled in the optometry program.

Dr. Di Stefano concluded, as did Commission staff, that the NSU College of Optometry plays a valuable role in meeting the needs of Florida's optometric workforce requirements and that the contract should continue to be funded. The current funding at 131 students provides state funds for an average of 33 students per entering class. As workforce demand is estimated as 40-49 annual openings in Florida, the current level of funding supports at least two-thirds of the needed optometrists while allowing for in-migration of both optometry students and professionals.

The SREB interstate contracting level for 1999-2000 is \$8,000 per student. As this contract did not originate as an academic program contract, the per-student rate was not translated as a tuition differential. In recent years, Florida residents have paid \$4,000 less in tuition than out-of-state students. Besides providing a lower tuition rate to Florida residents, the college uses state funds as deemed necessary. As discussed with the Dean during the exit interview, Dr. Di Stefano and Commission staff concur that to strengthen the benefit to the State and the quality of the program special consideration should be given to targeting some of the state funds for additional minority recruitment efforts, faculty development programs, and research enhancement, especially as it relates to the improvement of the academic program and student learning.

For the 1999-2000 year, the Commission recommends that the Nova Southeastern University Doctor of Optometry contract program be funded at \$1,048,000 for 131 students (at \$8,000 per student).

IV. CONTINUING CONTRACT RECOMMENDATIONS

The Commission receives and evaluates proposals annually from independent postsecondary institutions to establish new state contracts. Under the provisions of the governing statutes and rule, these proposals are evaluated in terms of specific criteria, including a clear demonstration of need unmet by the public sector of postsecondary education, an assessment of quality at least equal to what may be expected in the public sector and a determination that the proposed contract is the most appropriate available means of addressing the unmet need. The evaluation includes comparisons with other available public and independent sector alternatives. Upon review and approval by the Commission, a funding recommendation is forwarded to the State Board of Education through the Department of Education's budget to establish a new state contract.

This chapter includes funding recommendations for the 1999-2000 academic year for a newly established contract program and for a continuing request.

Below is a brief summary of the two programs:

A. BS IN MUSIC ENGINEERING TECHNOLOGY - University of Miami

In 1996, the Commission reviewed a proposal by the University of Miami's BS in Music Engineering Technology program and made a recommendation to establish a state contract for this program. This recommendation was not funded by the 1997 Legislature. The 1998 Legislature, however, appropriated funds to establish a state contract for the 1998-99 academic year. A funding recommendation for the 1999-2000 academic year is provided.

B. BS IN SPECIFIC LEARNING DISABILITIES - Bethune-Cookman College

In 1997, the Commission evaluated a proposal by Bethune-Cookman College to establish a state academic contract for its BS in Specific Learning Disabilities program. Although recommended by the Commission, funds were not appropriated by the 1998 Legislature to establish the contract. Below is a brief review of Bethune-Cookman College's proposal and a funding recommendation to establish the contract for the 1999-2000 academic year.

A. BS IN MUSIC ENGINEERING TECHNOLOGY - University of Miami

Contract Summary

- In 1996, the Commission reviewed a proposal from the University of Miami to establish a state academic contract for its Bachelor of Music degree in Music Engineering Technology.
- During its review, the Commission found that the University of Miami program is known internationally as a leader in the music/audio field. The program continues to evolve and has kept abreast with industry advances in computers, digital systems and audio applications to video technologies.
- The Commission found that the need for audio engineers in Southeast Florida is increasing as recording studios, theaters, entertainment venues and related manufacturing and electronic companies continue to expand.
- Miami and its surrounding region has become a hemispheric center for the recording of Latin American music, as well as radio/television and video production.
- The School reports that graduates are in high demand, particularly graduates who are skilled in software programming and the design of hardware circuitry. There are UM music engineering technology graduates who own their small recording studios, or are employed as audio, recording, design and maintenance engineers in the expanding Southeast Florida industries.
- Following its review, the 1996 Commission recommended that a contract be established for the 1997-98 academic year to support 450 student credit hours at an estimated cost of \$338,181. The 1997 Legislature, however, failed to appropriate funds to establish the contract.
- Total Fall 1997 enrollment is 67 students.
- Currently, there are three faculty members in the program; two members have the MS degree in electrical engineering and one member has a bachelor of music degree.
- The 1997 Commission recommended that a contract be established for this program for the 1998 academic year. The 1998 Legislature appropriated \$320,634 to establish the contract during the 1998-99 year.

1999-2000 Contract Recommendation

The Commission recommends state support for 450 student credit hours (SCH) at an estimated cost of \$ 335,047.

B. BS IN SPECIFIC LEARNING DISABILITIES - Bethune-Cookman College

Program Summary

- Specific Learning Disabilities (SLD) has been designated a critical teacher shortage area by the State Board of Education.
- Teachers who are certified in SLD are also qualified to teach in Varying Exceptionalities (VE), Emotionally Handicapped (EH), and mildly Mentally Handicapped (MH) classrooms. Plans to create a new certificate for teachers qualified to teach in the SLD, EH, MH, or VE areas are being considered by the Florida Department of Education to replace the number of overlapping categories currently offered.
- Thirty-four percent of all Exceptional Education (ESE) students (134,310) in Florida were classified as SLD in 1994-95.
- Shortages in teachers qualified to fill ESE positions are particularly acute among minorities. Six percent of all graduates of ESE teacher education programs in 1994-95 were African American, while nearly 30 percent of the K-12 students enrolled in ESE programs or classrooms were black.
- In 1994-95, 59 percent of African-American education majors graduated with degrees in elementary education, while only 12 percent graduated with an ESE degree.
- The Historically Black Colleges and Universities (HBCUs) in Florida produce the majority of the African-American graduates with education degrees. In 1994-95, the four HBCUs, FAMU, Bethune-Cookman, Edward Waters and Florida Memorial, produced 51 percent of black teacher education graduates. Of the four HBCUs, only Bethune-Cookman offers any ESE programs, including SLD.
- The College has recently received a grant from the United States Office of Education to recruit African American Males who will be qualified and certified to teach pre-schoolers diagnosed as having disabilities.
- During its 1997 review, the Commission confirmed that SLD and VE are critical teacher shortage areas and that enabling more students to attend the SLD/VE programs would assist schools in filling the need for more qualified teachers, particularly minority teachers, throughout the state.
- The Commission's review consultant found that the content of the programs in SLD and VE at Bethune-Cookman are consistent with similar undergraduate programs in these areas. She found them to be "comprehensive" and include an appropriate mix of lectures, case studies, modeling, hands-on projects, technology, and discussion. The SLD program is accredited by the National Council for the Accreditation of Teacher Education (NCATE) and has obtained program approval from the Florida Department of Education.

- The program enjoys an excellent reputation between principals and supervising teachers in the state and continues to grow and adapt to changes in the field of exceptional education while providing a small, "hands on" learning environment for its students.
- Twenty-two students were enrolled in the SLD program during 1996-97, six of whom were African-American males. Twenty-three students are enrolled in the program during the 1997-98 term.
- Thirty-nine students have graduated with the SLD teaching specialty since 1992. Ninety-eight percent of the graduates were African-American. All but three are still teaching in Florida.
- Based on these and other findings regarding the need for the program and its merit, the 1997 Commission recommended the establishment of a state academic contract for the Bethune-Cookman College BS in Specific Learning Disabilities. The Commission recommended support for 288 student credit hours at an estimated cost of \$68,118.
- The 1998 Legislature, however, failed to appropriate funds to establish the contract.

BETHUNE-COOKMAN COLLEGE-Bachelor of Science in Specific Learning Disabilities

1999-2000 Contract Recommendation

College Request: 300 SCH

Commission Recommendation: \$76,190 for 288 SCH

APPENDIX A

Annual Contract Renewal Report

**POSTSECONDARY EDUCATION PLANNING COMMISSION
ANNUAL CONTRACT RENEWAL REPORT
1997-98**

INSTRUCTIONS: Following the Outline below, answer each question and provide requested information on your contract program. You may attach additional sheets, but **BE CONCISE**.

CONTRACT PROGRAM: _____

DEPARTMENT/COLLEGE: _____ **INSTITUTION** _____

CONTRACT ADMINISTRATOR: _____

PHONE #: _____ **FAX #** _____

E MAIL: _____

I. DATA REPORT

A. Student Demand - For **all** program applicants, include the following admissions statistics (by semester/quarter):

	<u>Fall</u>	<u>Spring</u>	<u>Summer</u>	<u>Total</u>
Program Applicants	_____	_____	_____	_____
Applicants Admitted	_____	_____	_____	_____
Total Applicants Denied	_____	_____	_____	_____
Qualified Applicants Denied	_____	_____	_____	_____
Applicants Enrolled	_____	_____	_____	_____
 TOTAL ENROLLMENT	 _____	 _____	 _____	 _____

B. 1997-98 Contract Enrollment (Unduplicated Headcount)

ETHNICITY							STATUS	
GENDER	ASIAN	BLACK	HISPANIC	WHITE	NOT RPTD	ALL	FULL	PART
FEMALE								
MALE								
TOTAL								

C. Total 1997-98 Student Credit Hours taken by contract students in program:

D. Headcount ratio of contract-supported students to the total program enrollment.

E. Headcount ratio of 1997-98 contract-supported graduates to "new" contract-eligible enrollments.

F. Faculty - State the Student/Faculty ratio in the degree program.

II. NARRATIVE REPORT

- A. Demand for Graduates** Discuss any changes in demand or employability for graduates of your program during the past year, including national and regional trends in the profession or in the workforce. Include any information on projected demand for the next few years.
- B. Faculty** State the size, level, qualifications and sex/ethnic composition of the contract program instructional faculty in the 1997-98 program. Discuss any anticipated changes for the coming year.
- C. Accreditation** Identify any change in the accreditation status of the institution and the contract program.
- D. Outcomes** Describe outcomes assessment activities for the contract program to assess quality and measure attained competencies, e.g., results on certification or licensing examinations, etc. Report on the results of these activities.
- E. Overall Academic Program** Discuss any modifications in the program that will affect the State contract, including admission/retention policies, facilities/program resources, recruitment strategies, particularly for minority students, and the use of educational technologies to deliver the program.

Statistical data on contract-supported students collected by the Department of Education's Office of Postsecondary Coordination will supplement the information collected for the academic year 1997-98 and will be used by the Commission for its annual budget request and contract report to the State Board of Education.

Please return the completed report by **May 30, 1998** to:

Dr. Jon Rogers
Educational Policy Director
Postsecondary Education Planning Commission
Florida Education Center
Tallahassee, Florida 32399-0400

Phone No.: 850-488-0981
Fax No.: 850-922-5388
E Mail: ROGERSJ @ mail.doe.state.fl.us

APPENDIX B

Five Year Contract Report Form

FLORIDA DEPARTMENT OF EDUCATION
FORMAT FOR REPORTING
INFORMATION FOR FIVE-YEAR PROGRAM REVIEWS OF
PRIVATE COLLEGE AND UNIVERSITY CONTRACTS

INSTRUCTIONS: Following the outline below, answer each question and provide the requested information on your contract program. Do not answer on this form, but repeat the outline questions and item headings. Use a separate sheet of paper.

1. Name of institution:
2. College/school & department:
3. Contracted degree program/project name:
4. Project/grant number:
5. Name, institutional title and telephone number of person responsible for the administration of this contract:
6. Date of response:
7. In general terms, describe the nature of the degree program(s), including any unique characteristics or reasons that made this program attractive as a contracted program for the State of Florida.
8. Briefly state the mission of the institution and the major long-term goals of the department. Then, explain how the degree program and the state contract (the project which is the subject of this review) are related to each other and to the long-term goals of the department/school/college.
9. In what ways and to what extent has the State of Florida and its citizens received benefits from this project during the past five years?
10. Please provide a written discussion of future employment opportunities and manpower needs for graduates of the program under review. Provide evidence that verifies and/or demonstrates the extent of local, state, or national manpower needs.
11. What other private or public Florida colleges and universities offer degree programs in the same academic discipline? How does this degree program at this institution differ from other degree programs in the same academic discipline or field of study offered by other private and public Florida colleges or universities?
12. What strategies are used to recruit students into the program? What strategies are used to recruit minority students into the program? How is the tuition differential grant money used in the recruitment process?
13. What criteria are used to determine eligibility and ineligibility of students to receive reduced tuition benefits offered through this project? How is the amount of the benefit for each participant determined?

14. For the the entire degree program for which the contract program provides funds to some of the students, include admissions statistics on the following:

	F 1994	F 1995	F 1996	F 1997
Number of Program Applicants:				
Number of Applicants Admitted:				
Number of Applicants Denied:				
Number Admitted and Enrolled:				

15. Time to Degree - For each of the years 1994-97, report the following:

a. credit hours taken to complete the degree program:

	<u>average number</u>	<u>highest number</u>
contract grads.	_____	_____
all grads in major	_____	_____

b. Semesters needed to complete the degree program

	<u>average number</u>	<u>highest number</u>
contract grads.	_____	_____
all grads in major	_____	_____

16. Gender and ethnicity of students:

a. Number of students in the major, including students receiving tuition reimbursement grants:

	Number of Females	Males	Am Ind	Asians	Black	Hispanic	White	Other
1994-95								
1995-96								
1996-97								

b. Number of students receiving tuition differential grants:

	Number of Females	Males	Am Ind	Asians	Black	Hispanic	White	Other
1994-95								
1995-96								
1996-97								

17. Extent to which the program is supported by the grant:

a. Number of students (HC=headcount) who actually received reduced tuition benefits through the grant and the number of Funded Student Credit Hours (SCH) during the current and preceding years:

	Full-time Funded		Part-Time Funded		Total HCa (FT+PT)	Total SCHa (FT+PT)
	HC	SCH	HC	SCH		
1994-95	_____	_____	_____	_____	_____	_____
1995-96	_____	_____	_____	_____	_____	_____
1996-97	_____	_____	_____	_____	_____	_____

b. Number of students (HC=headcount) in the major who did not receive reduced tuition benefits through this project and the number of Non-Funded Student Credit Hours (SCH) during the current and preceding years:

	Full-time Non-Funded		Part-Time Non-Funded		Total HCb (FT+PT)	Total SCHb (FT+PT)
	HC	SCH	HC	SCH		
1994-95	_____	_____	_____	_____	_____	_____
1995-96	_____	_____	_____	_____	_____	_____
1996-97	_____	_____	_____	_____	_____	_____

c. Ratio of grant-support to total program:

	Headcount HCa/(HCa+HCb)	Student Credit Hours SCHa/(SCHa+SCHb)
1994-95	_____	_____
1995-96	_____	_____
1996-97	_____	_____

18. Number of graduates who received the tuition reduction grants who were employed within one year of graduation:

Year	Total No. Grant Recipients Graduated	Number Employed in Florida	Number Employed Outside Florida	Number Pursuing Further Education	Number Unknown
1994-95	_____	_____	_____	_____	_____
1995-96	_____	_____	_____	_____	_____
1996-97	_____	_____	_____	_____	_____

19. For grant recipient graduates during the past 3 years who were employed in Florida, report the following:

<u>Position</u>	<u>Employer</u>	<u>Location</u>
_____	_____	_____

20. Describe outcomes assessment activities used in your department to assess quality and to measure attained competencies, e.g., certification or licensing examinations for program graduates. Report on the results of these activities.

21. Degree program course requirements

a. Provide a list of courses in the curriculum for the degree program(s) in which students may qualify for tuition differential grants.

b. Describe any revisions that have been implemented in the degree program curriculum during the past five years.

c. Describe the use of educational technology in the delivery of the program.

22. List any new facilities or equipment acquired by this program during the last five years. Briefly describe any facilities or equipment owned or operated by the department that are unique or unusual in this academic field of study.

23. Number of full-time-equivalent faculty & staff dedicated to this degree program:

	Faculty	Support staff
1994-95	_____	_____
1995-96	_____	_____
1996-97	_____	_____

24. For each faculty member dedicated to this degree program, indicate length of service, earned degrees, experience, specialization, awards, recognitions, and tenure status.

25. For the degree program faculty, list research, public service, and development activities for the last three years.

26. Operating expenses for the program:

	Capital Equipment	Travel	External Research	Equipmt Maint
1994-95	_____	_____	_____	_____
1995-96	_____	_____	_____	_____
1996-97	_____	_____	_____	_____

27. Faculty Salaries (Please specify whether this includes all department faculty or only those dedicated to the degree program to which this review applies.)

Average Salaries

Asst Prof	Assoc Prof	Full Prof
_____	_____	_____
_____	_____	_____
_____	_____	_____

28. Briefly describe the most immediate resource needs of the program.

29. If the tuition differential grant is continued at the current level, do you expect the enrollment to grow or decline and how do you expect the program to develop overall during the next five years?

30. If this project were no longer supported by state funds, what adjustments would be required to maintain the current enrollment and quality of the degree program and the department?

31. 1999-2000 Contract funding request

a. Provide the 1997-1998 cost per student credit hour in the contract program.

(Attach a statement from an official college/university publication that verifies the tuition.

b. Specify the number of semester credit hours (SCH) that you are requesting for 1999-2000, including costs to maintain the current level of enrollment in the contract program.

(If an increase in credit hour support is requested, a written justification should be included.)

APPENDIX C

Consultant Report: BS in Engineering

Florida Institute of Technology

FIVE-YEAR PROGRAM REVIEW

for the

Florida Postsecondary Education Planning Commission

**Florida Tuition Equalization Grant Program
Florida Institute of Technology
Melbourne, Florida**

Baccalaureate Programs in Engineering

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April 1998

FIVE-YEAR PROGRAM REVIEW
for the
Florida Postsecondary Education Planning Commission

Florida Tuition Equalization Grant Program
Baccalaureate Programs in Engineering
Florida Institute of Technology
Melbourne, Florida

Introduction

This report presents the results of a fifth-year review of the Florida Tuition Equalization Grant Program for baccalaureate engineering programs at the Florida Institute of Technology (FIT), a private institution. Through a contract with the State of Florida, the institution receives funds that may be awarded as tuition grants to Florida residents that allow them to enroll in these programs for the same net tuition they would pay to attend similar programs at public institutions in the state.

The purpose of the review is to make a recommendation regarding continuation of the program based upon educational program quality, student demand, and state manpower needs. The review was conducted for the Florida Postsecondary Education Planning Commission and was coordinated by the Florida Department of Education.

Students receiving tuition equalization grants are enrolled in programs leading to the degrees of Bachelor of Science in Chemical Engineering, Bachelor of Science in Civil Engineering, Bachelor of Science in Computer Engineering, Bachelor of Science in Electrical Engineering, Bachelor of Science in Mechanical Engineering, and Bachelor of Science in Ocean Engineering. FIT offers a seventh program leading to the degree of Bachelor of Science in Aerospace Engineering, but at present tuition grants are not awarded to aerospace engineering students. This appears to result from a misunderstanding by the institution as to the availability of grants to students in this program.

This report has been prepared by Dr. John W. Prados, consultant for the review, and is based on review of materials furnished by the institution, a site visit, and a comparison of program characteristics with those for other accredited engineering programs in the United States.

Site Visit

The site visit to the Florida Institute of Technology took place on April 13, 1998. The review team was composed of Mr. R. Taylor Cullar, Educational Policy Analyst, Florida Department of Education, Dr. Jon C. Rogers, Educational Policy Director, Postsecondary Education Planning Commission, and Dr. John W. Prados, Vice President Emeritus and University Professor at The University of Tennessee, who served as consultant for the review. The team held discussions with Dr. Lynn E. Weaver, President; Dr. Andrew W. Revay, Jr., Vice President for Academic Affairs; Dr. Robert L. Sullivan, Dean of Engineering; Dr. Frederick B. Buoni, Associate Dean of Engineering; Dr. Thomas J. Sanders, Director of the Division of Electrical and Computer Science and Engineering; seventeen

of the thirty-two students currently receiving tuition equalization grants; and the chairs of the seven accredited engineering degree programs: Dr. Chelakara S. Subramanian, Aerospace Engineering; Dr. Paul A. Jennings, Chemical Engineering; Dr. Howell W. Heck, Civil Engineering; Dr. John Hadjiligiou, Computer Engineering; Dr. Barry G. Grossman, Electrical Engineering; Dr. John J. Engblom, Mechanical Engineering; and Dr. Andrew Zborowski, Ocean Engineering.

The team also conferred via speaker phone with the following employers of FIT engineering graduates: Mr. Ken Ketterer, Human Resources Management, Northrop-Grumman Aerospace Corporation, Melbourne, FL; Mr. Steve Mott, ImageLinks, Melbourne, FL; Mr. Richard P. McNeight, President, Paravant Computer Systems, Inc., Melbourne, FL; Ms. Ann D. Montgomery, Deputy Director of Logistics Operations, NASA, Kennedy Space Center, FL; Ms. Sherry Coburn, Human Relations Management, Johnson Controls World Services, Inc., Cape Canaveral, FL; and Mr. Mark Senti, President, GSMA Systems, Inc., Palm Bay, FL. Discussion centered on the quality of FIT engineering graduates in comparison with those of other institutions and on the current and projected needs for engineering graduates among the employers represented.

The review team expresses its warm appreciation to these individuals for the information and support they provided.

Educational Program Quality

The consultant's evaluation of educational program quality is based on the materials provided by the institution documenting curricular requirements and faculty credentials, discussions with students and program chairs, and comments of employers on the performance of FIT engineering graduates.

In the consultant's judgment, all seven of the FIT baccalaureate engineering programs are of good quality. The Ocean Engineering program, in particular, has an excellent national reputation. All seven baccalaureate programs are accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology, Inc., (ABET), which signifies that the programs satisfy acceptable quality criteria in the areas of students, faculty, curriculum, facilities, administration, and institutional commitment. These criteria include provisions applicable to all engineering programs as well as those specific to the individual disciplinary degrees offered. Graduates of these programs should be adequately prepared to begin the practice of engineering at an entry level. EAC/ABET accreditation satisfies the requirements of all state engineering registration boards for educational preparation needed to begin the examination process leading to registration as a professional engineer. With regard to the particular areas covered by the accreditation criteria:

Faculty -- the full-time faculty members hold doctoral degrees from recognized engineering graduate programs. The number of full-time faculty in each program is adequate to cover the required subject areas. Faculty development funds provided through a \$4 million allocation from the initial \$25 million grant from the F. W. Olin Foundation have significantly enhanced faculty development opportunities. The lack of a tenure system facilitates the replacement of faculty members who are ineffective as teachers or scholars, and the dean reports that several such replacements have been made.

Students -- students admitted to the engineering programs appear qualified to succeed in engineering study.

Administration -- administrative leadership at the divisional, college, and institutional levels appears strong and committed to the continued support and development of the undergraduate engineering programs.

Curriculum -- the baccalaureate engineering curricula appear typical of accredited engineering programs at other institutions and to cover the needed subject areas. The number of semester credit hours required in each program (130-135) is also typical of that for other accredited programs.

Facilities -- although classroom and laboratory facilities for some of the engineering programs are only marginally acceptable, facilities available in the new engineering building funded through the initial \$25 million F. W. Olin Foundation grant should eliminate potential deficiencies in this area.

Institutional Commitment -- general financial support for the engineering programs has been limited in the past by the lack of endowment and heavy dependence of the institution on tuition revenues as a primary source of support. The additional \$25 million F. W. Olin challenge grant for endowment, if matched successfully, will provide a much stronger and more stable source of support for all the institution's programs, including engineering.

Student Demand

Students interviewed reported a high degree of satisfaction with the small class sizes, individual attention, and effective mentoring that FIT provides. A majority reported that the Florida Tuition Equalization Grant was a significant factor in allowing them to attend FIT. The institution appears to make significant efforts to make the tuition grants available to academically strong graduates of area community colleges and facilitates transfer from community colleges through articulation agreements.

The tuition grants appear particularly helpful to non-traditional students from the Brevard County area who are working and attending college part-time. Several of such students interviewed reported that the tuition grants were a significant factor in enabling them to attend a 4-year college and pursue an engineering degree.

Information provided by the Florida Department of Education indicates that the tuition reduction program was first implemented for FIT in 1981-82. Funding was \$124,000 and was sufficient to support 44 full-time equivalent students. Funding increased annually until 1987-88 when \$512,000 was available to support 101 full-time equivalent students. Since then, funding has decreased and has been level at \$401,346 since 1993-94. During the same time period, FIT tuition has risen significantly faster than that at the state institutions, so that in the current academic year (1998-99) only 32 full-time equivalent students are receiving support. Based on the local student demand and the demand for graduates, as discussed in the following section, there appears to be a clear need to increase funding at least to the 1987-88 level.

Demand for Graduates

Data provided by the institution (including reports of the Florida Department of Labor and Employment Security, the Brevard Workforce Development Board, and the Institute of Electrical and Elec-

tronics Engineers), as well as discussions with FIT students, program chairs, and employers of graduates, strongly suggest that demand for engineering graduates, both nationwide and in Florida, will remain strong over the next several years. Although certain employment opportunities that depend on federal funding -- e.g., through NASA and the Department of Defense -- appear to be stable or declining, the strong commercial economy and the need for replacement and enhancement of civil infrastructure -- highways, bridges, airports, water supply and sewage systems, etc. -- should remain strong. Graduates of computer science and computer engineering programs appear to be in particularly strong demand, with the excess of job openings over supply projected to continue for a number of years. Continued excellent opportunities for electrical engineers in the communications and microelectronics fields are also anticipated. Local employment demand for aeronautical, civil, mechanical, and ocean engineering graduates is also expected to continue strong, though not at the level expected for computer science and computer engineering graduates. Demand for chemical engineering graduates is strong at the national level, but opportunities in Florida are more limited due to the absence of any concentrations of chemical and petroleum manufacturing facilities. However, chemical engineering graduates are particularly well prepared to fill environmental engineering roles, and FIT has wisely chosen to emphasize this area in its chemical engineering program.

Of particular significance are the reports of employers in the Brevard County area that FIT engineering graduates' performance is fully competitive with that of graduates of larger and better known engineering schools. A number of FIT engineering graduates were reported to have risen to positions of leadership with their employers and to have performed commendably in these roles.

Nationally, the demand for engineering graduates is forecast to remain strong. Bureau of Labor Statistics projections summarized in a recent report of the Commission on Professionals in Science and Technology¹ are summarized below for the FIT engineering fields, as well as computer science.

Discipline	Employed, 1996	Employed, 2006	Per Cent Increase
Aerospace Engineering	53,000	57,000	7.8
Chemical Engineering	49,000	57,000	15.0
Civil Engineering	196,000	231,000	17.9
Computer Engineering	216,000	451,000	109.1
Electrical Engineering	367,000	472,000	28.6
Mechanical Engineering	228,000	264,000	15.8
Ocean Engineering		(Data not reported)	
Computer Science	212,000	461,000	117.8

Strong national demand for engineering graduates is indicated by 1998 starting salary data just reported by the National Association of Colleges and Employers along with the percentage increases from 1997.² Average starting salary data are summarized below for the FIT engineering fields along with computer science.

¹ *Comments*, vol. 35, No. 2, March 1998, Commission on Professionals in Science and Technology, Washington, DC, p. 5

² *Salary Survey: April 1998*, vol. 37, Issue 2, National Association of Colleges and Employers, Bethlehem, PA, pp. 4-5

Discipline	Average Annual Starting Salaries, \$		
	1997	1998	Per Cent Increase
Aerospace Engineering	*	37,456	*
Chemical Engineering	42,802	45,591	6.5
Civil Engineering	33,031	35,705	8.1
Computer Engineering	40,093	42,436	5.8
Electrical Engineering	39,546	42,629	7.8
Mechanical Engineering	38,287	40,750	6.4
Ocean Engineering	*	43,667	*
Computer Science	37,215	40,843	9.8

*Too few offers reported to provide useful statistics

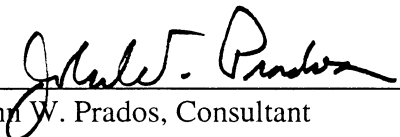
Although engineering enrollments decreased slowly at the national level over the years 1994-1996,³ continuation of this strong demand for graduates will likely lead to future enrollment increases. Historically, engineering enrollments have been extremely sensitive to changes in perceived job opportunities, and have responded rapidly to such changes.

Conclusions and Recommendations

The consultant judges that the Florida Tuition Equalization Grant program for baccalaureate engineering programs at the Florida Institute of Technology is providing a valuable service to Florida residents and to engineering employers in Florida. In particular, the program enables both traditional and non-traditional students in the Brevard County area to obtain an affordable engineering education and provides an augmented source of engineering talent for area employers. Demand for engineering graduates, both locally and nationally, is expected to remain high for the next several years.

The program appears to be well managed and to fulfill the intent of the enabling legislation.

It is recommended that this program be continued for an additional five years, and that the level of funding be increased in accordance with the original program plans. In awarding grants, FIT should be encouraged to give priority to areas of highest local demand.



 John W. Prados, Consultant

04/30/98

 Date

³ *Comments*, vol. 35, No. 2, March 1998, Commission on Professionals in Science and Technology, Washington, DC, p. 14

Appendix

Biographical Sketch of Consultant

John W. Prados

John W. Prados is Vice President Emeritus and University Professor in the Chemical Engineering Department at The University of Tennessee where he has been employed for more than 40 years, beginning as a graduate assistant in 1953. For 13 years he was a full-time chemical engineering faculty member; then for the next 20, he held various administrative positions, including Associate Dean of Engineering, Dean of Admissions and Records, Acting Chancellor of the Knoxville and Martin campuses, Acting Director of Energy Conversion Programs at The University of Tennessee Space Institute, and, from 1973 through 1988, Vice President for Academic Affairs of the statewide University of Tennessee system (Vice President for Academic Affairs and Research, 1981-88). He returned to the Chemical Engineering Department in 1989 and from 1990-93 was department head. From 1994 through 1997 he served as Senior Education Associate in the Engineering Directorate of the National Science Foundation. He has been a consultant to the Union Carbide Corporation and Martin Marietta Energy Systems in Oak Ridge, Tennessee, and to a number of universities and state education agencies.

Dr. Prados' professional activities include service as a Director and current Treasurer of the American Institute of Chemical Engineers (AIChE); Executive Councilor of Tau Beta Pi; President and Treasurer of Sigma Xi, The Scientific Research Society; Chair of the Engineering Accreditation Commission, Secretary, and 1991-92 President of the Accreditation Board for Engineering and Technology (ABET); and member of the Commission on Colleges and Board of Trustees of the Southern Association of Colleges and Schools. He has frequently chaired accreditation teams both for ABET and for the Southern Association. He is editor of the *Journal of Engineering Education*, published by the American Society for Engineering Education (ASEE).

Dr. Prados is a Fellow of AIChE and of ABET and is a registered professional engineer in Tennessee. In 1993 he received ABET's highest recognition for service to engineering education, the L. E. Grinter Distinguished Service Award.

As a faculty member, Dr. Prados conducted research and published papers in the areas of flow visualization, separation by thermal diffusion, process dynamics, and mathematical simulation of chemical and nuclear systems. He directed the graduate research of 10 PhD and 31 MS students.

A native Tennessean, Dr. Prados earned the BS in Chemical Engineering at the University of Mississippi and the MS and PhD with majors in chemical engineering at The University of Tennessee. He served for two years as a munitions officer in the United States Air Force. He is married, with three daughters and three granddaughters.

APPENDIX D

Consultant Report: RN/BSN Transition Program

University of Miami

FIVE YEAR PROGRAM REVIEW

RN/BSN Transition Program University of Miami School of Nursing

Submitted to the Florida Post-Secondary Planning Commission

By

Dr. Joyce K. Shoemaker, Dean
School of Nursing
Medical College of Ohio Toledo, Ohio

INTRODUCTION

The following is a review of the RN/BSN Transition program conducted at the request of the Florida Department of Education. The purpose of this review was to assess the quality of the program and the need for baccalaureate prepared nurses in the region served by the University of Miami School of Nursing as requisites for continued state support for the program.

Individuals participating in this site visit were:

Dr. Jon Rogers, Educational Policy Director, Postsecondary Education Planning Commission

Mr. Taylor Cullar, Educational Policy Analyst, Florida Department of Education

Ms. Heather Rakauskas, Research Assistant, Postsecondary Education Planning Commission

Dr. Joyce Shoemaker, Consultant

Materials reviewed by the consultant prior to the site visit were:

A five year progress report prepared by Dr. Diane Horner, Dean, School of Nursing, University of Miami

Comments and Recommendations of the Board of Review, National League for Nursing, October 1990.

Undergraduate Bulletin, University of Miami, 1997-1998

National Advisory Council on Nurse Education and Practice, (1996), Report to the Secretary of the Department of Health and Human Services on the Basic Registered Nurse Workforce. Washington, DC: U.S. Department of Health and Human Services.

U.S. Department of Health and Human Services, (1996), The Registered Nurse Population: Findings from The National Sample Survey of Registered Nurses. Washington, DC: Author.

American Association of Colleges of Nursing, (1997), Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing. Washington, DC: Author.

Pew Health Professions Commission, (1995), Critical Challenges: Revitalizing the Health Professions for the Twenty-First Century. San Francisco: Author.

Individuals interviewed:

Dr. Diane Horner, Dean
Dr. Georgie Labadie, Associate Dean
Dr. Patricia Clunn, Faculty
Dr. Lydia DeSantis, Faculty
Dr. Theresa Gesse, Faculty
Dr. Nancy Hogan, Faculty
Dr. Linda Parker, Faculty
Dr. Donna Pfeifer, Faculty
Dr. Marydelle Polk, Faculty
Kate Callahan, RN, Alumna
Rebecca De Los Rios, RN, Student
Kandy Nares, RN, Student
Edward Punzalan, RN, Student
Charles Buscemi, RN, Student
Olga Eckert, RN, Student
Reynel Lavandera, RN, Student
Lillian Rivera, RN, Acting Senior Administrator of Operations, Dade County
Department of Public Health
Charlene Welker, RN, Assistant Vice President of Nursing, Miami Heart Institute
Ceci Kwart, RN, Patient Care Administrator, Vitas Hospice
Jane Mass, RN, Vice President of Nursing Services, Public Health Trust, Jackson
Memorial Hospital
Margaret Jones, RN, Director of Education and Staff Development, Miami
Children's Hospital
Charlotte Dison, RN, Vice President/Chief Nursing Officer, Baptist Hospital
Staff, AGAPE Women's Center
Staff, School of Nursing Health Center, R.R. Moton Elementary School

QUALITY ISSUES

Accreditation

The University of Miami School of Nursing was granted continuing accreditation by the National League for Nursing in 1990 for a period of eight years. The faculty is currently in the process of writing the required self-study in preparation for a fall 1998 site visit for continuing accreditation. A review of the 1990 report from the National League for Nursing revealed several minor recommendations. The administration and faculty discussed ways in which the recommendations have been addressed during the past eight years.

Curriculum

The curriculum for this undergraduate program consists of 120 credits which is consistent with requirements for the baccalaureate degree at the University of Miami. A review of the Undergraduate Bulletin demonstrates consistency between the requirements for this

program and those of the generic baccalaureate nursing program. The University of Miami School of Nursing is recognized nationally for its strong emphasis on multiculturalism in its curricula and this concept was evident in a review of course descriptions.

The curriculum is designed to allow for full or part-time study although the majority of students are fully employed and they prefer the part-time study option. A strength of the program is the weekend option during the last 30 hours, which allows for flexibility vis-a-vis work and family responsibilities. It should also be noted that the program is offered in Key West, Florida where there is no opportunity for registered nurses to obtain the baccalaureate degree. Faculty travel to Key West to teach classes and students also have the opportunity to select the weekend option on the University of Miami campus. Dean Horner expressed plans to incorporate distance learning technology to support the curriculum offerings at the Key West campus at the earliest opportunity.

Students in this program must have completed either a diploma in nursing or an associate degree in nursing with a grade point average of 2.5 or better (4.0 scale). They must be licensed to practice in Florida. The ACT/PEP nursing examinations are used to validate prior learning. Students who pass all three examinations are awarded 30 credits. Students who do not achieve passing grades are required to take the equivalent course(s) in the generic baccalaureate program.

Students who were interviewed during the site visit were enthusiastic about their program of studies. Though they expressed some dissatisfaction about having to take one or more courses with generic students, they feel the curriculum is challenging. They all expressed appreciation for the individual attention they receive from faculty. They stated that, in spite of some initial reservations about returning to school, they have learned a great deal. They gave as examples the emphasis in the curriculum on management and leadership, which will prepare them to function effectively in the managed care environments in which they practice. All students except one anticipated a promotion when they have completed degree requirements. The exception was a young man who stated he is already functioning in a management position. However, he stated he feels more confident in dealing with organizational and personnel issues as an outcome of this program. Students also appreciated the value of the emphasis on cultural competence in the curriculum which has enabled them to be more effective in meeting the needs of the multicultural clients and staff with whom they work. Students also spoke about course requirements that have helped them to develop critical thinking skills and to develop independence and self-esteem. One young man spoke enthusiastically about a teaching project he has designed and plans to implement. He further stated that he feels so confident regarding his knowledge and his ability to analyze issues, that he is considering a political career sometime in the future. Finally, the students appreciated the community health course, which is a requirement of this curriculum. With the exception of one student who is employed in a home health agency, all of the students work in acute care hospital settings. The community health course introduced concepts that were new to these students and which they valued. One student stated she has enjoyed the course so much she plans to seek employment in a community health setting after graduation. Two

students, who plan to enter nurse practitioner programs after graduation, stated they felt the community health course had covered content that will be of value in their future employment. The rest of the students stated that their understanding of the content of the course would make them more effective in their current positions.

In discussing curricular issues with the faculty, numerous examples of course requirements aimed at encouraging critical thinking skills in students were provided. They expressed some difficulty in obtaining objective outcome measures of this concept. However, the consensus of the group was that students do show significant improvement in their abilities to analyze issues, function independently, and communicate effectively as they progress through the program. The faculty recognize that some students would prefer to be totally separated from the generic students while others appreciate opportunities to share some of the insights they have gained through practice with generic students when they are in class together. It was clear during the meeting with the faculty that they function as a team in their concerns for providing the best possible education for these students.

Five individuals who are employers of graduates of this program were interviewed. Without exception, they indicated their preference for these graduates over nurses who were educated in other programs. One individual described nurses from the University of Miami program as being "creative with good critical thinking skills and a commitment to nursing as a career." Another stated her preference for University of Miami graduates because as students they have good clinical supervision by faculty, which results in graduates being good clinicians. Another praised the program because graduates are prepared for "collaboration, coordination, delegation, and leadership. They have a total care perspective." Another stated a strength of the program is that graduates are culturally sensitive and have an understanding of the community. Finally, one employer stated that the faculty of the University of Miami works more effectively with employers than do faculty of other schools in identifying the requisite knowledge and skills for nurses to function well in the health care system. She stated the qualities University of Miami graduates have are "critical thinking, problem-solving, advanced communication skills, the ability to function autonomously, engage in interdisciplinary practice, and an understanding of cultural diversity."

Resources

The School of Nursing is located in a modest building adjacent to the Coral Gables campus of the University of Miami. Administrative offices, a nursing skills laboratory, a small computer laboratory and some faculty offices are housed in the building. There is insufficient office space for all faculty so some individuals are located in a building a few blocks away. The Dean stated that courses are taught in classrooms on the Coral Gables campus and that there is a good deal of competition among programs for scarce classrooms. A fund raising campaign is currently in progress with the Dean playing a major role in that effort. A site has been selected for a new building which will be located on the Coral Gables campus and the Dean stated she anticipates there will be sufficient funds committed within the next few months for the project to get underway. The new building will include sufficient offices, laboratories and classrooms to meet all of the school's physical plant needs.

A major issue for most schools of nursing throughout the country is competition for clinical training sites for students. The administration and faculty of this school of nursing have been creative in identifying clinical sites that provide comprehensive experiences for students. Examples are the Health Center located at the R.R. Moton Elementary School, which is staffed by Nurse Practitioner faculty of the University of Miami School of Nursing. Another is the AGAPE Women's Center, a residential facility for chemically dependent women in which students have opportunities to engage in health surveillance and health teaching activities. Other facilities include hospice, acute care hospitals and clinics. Students in courses NUR 316 Application of Professional Concepts and in NUR 426 Professional Role Synthesis identify primary care settings in which they are able to meet course objectives. Students acknowledged that this requirement was somewhat intimidating at first but they stated it reinforced their need to be creative problem solvers as they selected sites that would meet their own learning needs.

NEED FOR THE PROGRAM

Background Information

The development of programs at the community college level for the preparation of nurses was initiated during the mid-1950's. This movement came about as an outcome of 1) a belief that nursing education should take place in institutions of higher education; 2) the presence of an acute shortage of nurses which required the preparation of a large number of registered nurses in as short a period of time as possible; and 3) the need to prepare nurses in a cost effective manner. Since the initiation of the first associate degree programs in nursing, the number of graduates has steadily increased and at the present time, they far surpass the number of graduates from baccalaureate programs. In 1992, there were an estimated 2,239,816 registered nurses in the United States. Of those, only 25% had received their basic education in a baccalaureate program. Forty two percent were graduates of hospital based diploma programs and 33% graduated from associate degree programs. These data, however, represent a majority of nurses who were educated prior to 1977. In 1992, 59% of the individuals who had graduated from a nursing program within the past five years came from associate degree programs. In 1995, 59.5% of registered nurses were graduates of associate degree or diploma programs while only 31.7% of the registered nurse population were graduates of baccalaureate programs and 8.8% of the registered nurse population had achieved the master's degree in nursing. It is estimated that by the year 2020, these percentages will change only slightly. (1)

During the decade of the 1990's, health care in the United States has undergone significant changes, which have impacted the health care workforce. In 1995, the Pew Health Care Commission (2) described the emerging system of health care as focusing primarily on primary care since it is less expensive and of higher quality. They further predict that a primary care team will provide care rather than the individual primary care practitioners seen in the past. The locus of care, then, will be mainly in the community and in home settings. The Pew Commission described the orientation of care as shifting from treatment to education, prevention and management. In examining the impact of these changes in health care on the education of practitioners, the Commission stated the following:

The growth in nursing professionals has come primarily from the rapid expansion of two-year associate degree programs. While this has been an efficient way to provide basic instruction for a hospital staff nurse, it does not adequately address the potential opportunity and enormous demands that will be placed on nursing in the future. Advanced preparation through baccalaureate study and masters level degrees will permit the nursing professional to develop the information background and experience base to operate more independently, work in community settings, more effectively manage the health of patients and make an even more profound contribution to health care.

The American Association of Colleges of Nursing (3) recently stated that in spite of mergers and consolidations of health care institutions between 1992-1996 which resulted in a 6% drop of inpatient RN's, the number of employed RN's nationwide grew by an average of 3 percent a year. Even within the hospitals that were downsizing, RN staffing increased by 25 percent in outpatient and labor and delivery departments, 15 percent in emergency rooms, and 10 percent in surgical facilities. The inference to be drawn is that there is a growing market for RN's. In fact, the American Association of Colleges of Nursing predicts that if current trends continue, rising demand will outstrip the supply by 2010 and by 2015, 114,000 jobs will go unfilled.

At the present time, nurse educators nationwide are experiencing a drop in enrollments in generic baccalaureate programs and only about 16 percent of associate degree graduates go on to earn the baccalaureate degree. Given the trends toward population based care in primary care facilities, the quality of care will be adversely affected by the dearth of baccalaureate prepared nurses. "Unlike associate-degree and diploma graduates who are prepared primarily for hospital and nursing home practice, BSN nurses have broad education in the physical and behavioral sciences, management concepts, and community health, and have the flexibility to practice across a range of settings . . . Critical thinking and leadership skills give BSN nurses an edge because they 'know how to think on their feet and work fast, and can work in teams. Teams are what hospitals are about.'"(4)

According to AACN (5), "even in a state with solid growth in its RN workforce, the numbers still threaten to come up short. While Florida's population jumped more than 12 percent between 1990 and 1996, the number of full-time equivalent RN's working in the state - about 102,000 in 1996 - grew nearly four times as much. Even so, hospitals and nursing homes there are 'scrambling to fill their demand for qualified nurses,' according to a report . . . in the Wall Street Journal's Florida edition." If trends continue, federal estimates predict the state could have a shortfall of 20,000 full time equivalent RN's by 2010.

Impact of the University of Miami Program

According to Dean Horner, the need for baccalaureate prepared nurses has not been adversely affected by hospital reorganizations and subsequent downsizing of RN staffs. She stated this is due to the continued growth in the population in Miami and the surrounding region. In addition there are needs for BSN prepared RN's outside of traditional institutional settings to a degree never previously known. In discussions with

nurse executives during the site visit, it was clear there is a critical need for BSN graduates, in spite of the fact that most employers do not differentiate the scope of practice between BSN and ADN graduates nor is there salary differentiation in most instances. Because of the need for additional nurses in most agencies and the shortage of available RN's, nurse executives stated their tendency to advertise for RN's without stipulating bachelor's degree preparation as a condition for employment. However, they stated all other things being equal, the preference is for the BSN. The nurse executive from the Dade County Health Department stated there are 200 positions available in school health for baccalaureate and master's prepared nurses. These positions require knowledge of case management and skills not taught at the associate degree level. The individual from the Miami Heart Institute stated, "There is a desperate need for BSN nurses. She described policies for advancement in that agency as a career ladder wherein it is not possible to advance to a team leader or director without obtaining the BSN. When asked about salary differentials for BSN graduates, she stated that as the individual advanced up the ladder, the pay increases. Given that the nurse is unlikely to advance without the BSN, there is de facto salary differential in that institution. The nurse executive from Vitas Hospice stated that about 200 RN's are employed in that agency, about 40% of whom are BSN's. She stated that company policy does not distinguish between BSN's and ADN's but in order to advance to a manager position, one must have a BSN. She stated that employment in a hospice environment requires a strong focus on case management, which suggests that the manager must have a BSN. She also stated she has unfilled positions.

The nurse executive from Jackson Memorial Hospital stated, "There is a terrible nursing shortage" in Miami. Jackson Memorial employs about 2100 nurses, 20-25 percent of whom are BSN's. There are currently 100 openings for registered nurses. Jackson Memorial does not offer a pay differential for BSN's; however, BSN's progress up the career ladder more rapidly. The nurse executive from Miami Children's Hospital stated there is a nursing shortage in critical care areas. Currently Miami Children's has about 20 vacancies. There is a pay differential for BSN's and the preference is for baccalaureate prepared nurses. The nurse executive stated that, in addition to the leadership qualities the BSN graduate brings to the workplace, there is decreased turnover of baccalaureate prepared nurses with a resultant decrease in orientation costs.

The Nurse Executive from Baptist Hospital stated there is an acute nursing shortage especially in areas where nurses with advanced expertise are needed. Because of the high penetration of managed care, there is a need for well-developed skills of assessment, planning and coordination of care. In addition, Home Care agencies need BSN's because early hospital discharges result in sicker patients in home settings. She stated because of the need for BSN prepared nurses she encourages RN's to move into transition programs.

Three of the six employers interviewed discussed tuition benefits available for registered nurse employees. These benefits ranged from \$1500 to \$2500 a year. This is consistent with practices nationwide - particularly in hospitals in which the nurses are members of a union. On the surface, it demonstrates the value placed in additional academic preparation for registered nurses. On the other hand, each credit hour at the University of Miami costs \$779 so the benefits pay for only 2-3 credits per year.

To summarize, there is evidence of an acute nursing shortage in the geographic area served by the University of Miami RN/BSN Transition Program. Most nurse executives expressed a need for baccalaureate prepared nurses and only baccalaureate or master's prepared nurses are employed by the Dade County Department of Public Health. Interestingly, one employer stated she is reluctant to publicly express a preference for BSN's because the shortage of nurses requires that she maintain good relationships with associate degree programs in order to recruit their graduates. Only one employer stated there is a pay differential for BSN nurses; however, others stated that career ladders or advancement into management roles required the BSN and were accompanied by salary increments.

Impact on Students

This program provides opportunities for registered nurses to earn a baccalaureate degree, which is consistent with the need for well-prepared nurses in the state of Florida. All of the students who were interviewed expressed plans for further education. One student expects to become a certified nurse anesthetist (CNA), three wish to prepare to function as adult registered nurse practitioners (ARNP's), one expressed an interest in becoming a pediatric nurse practitioner (PNP), and one stated she plans to earn a master of science in nursing but has not yet decided on the focus of the advanced degree. Several of the students reside in Key West and they stated there is no opportunity available for them to earn the BSN degree except through the University of Miami program. Others stated they selected the University of Miami program because of its excellent reputation, its focus on multiculturalism, the outstanding faculty in the School of Nursing and the weekend program option.

All of the students interviewed were receiving tuition differential grant money for a portion of the course credits in which they were enrolled. They stated unequivocally that they would be unable to attend the University of Miami program without this assistance. Dean Horner stated that employee tuition benefits available to some students are considered in calculating the amount of tuition differential grant money provided. She further stated that as tuition at the University of Miami increases, there is less tuition differential grant money available for each student.

SUMMARY AND RECOMMENDATION

There is substantial evidence of the need for this RN/BSN Transition Program at the University of Miami. Changes in the health care delivery system have created new employment opportunities for nurses in primary care settings and as members of interdisciplinary health care teams. National and statewide statistics support the need for more baccalaureate prepared nurses than are currently being prepared. There is an oversupply of nurses prepared in associate degree programs and an under supply of baccalaureate and master's prepared nurses. Employee tuition assistance is available for some nurses but it is generally a modest benefit compared with the cost of tuition at this private university.

The University of Miami School of Nursing has an excellent program of studies for RN/BSN Transition students. It is unique in that it provides educational opportunities for nurses in the Keys. It is the only program in Florida that provides a weekend option to accommodate nurses who are fully employed and those with family responsibilities. The physical plant for the School of Nursing is adequate but modest. However, it is expected that a fund raising effort currently underway will result in the construction of a new building within the next several years. Plans are also underway to incorporate distance learning technology to support the curriculum offered in Key West.

On the basis of the quality of the program and the need it serves for nurses and for the provision of health care in South Florida and the Keys, it is the opinion of this consultant that the tuition subsidy program should be continued at least at the current rate. If additional funding is available, I recommend an increase to offset the tuition increases that have occurred in the past and which will no doubt continue to be imposed in the future.

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JKS
April 7, 1998

APPENDIX E

Consultant Report: Master of Social Work

Barry University

Five-Year Program Review
Master of Social Work (MSW) Degree Program
Barry University
School of Social Work
Tuition Reduction Contract Program

Submitted to the
Florida Postsecondary Education Planning Commission

by

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April 1998

Introduction and Background

This report is for the five-year review of the master of social work (MSW) degree contract program at the Barry University School of Social Work. It is based on a site visit conducted on April 20, 1998, and a review of materials provided to the site visit team by the Barry University School of Social Work prior to the visit, as well as other documents reviewed onsite. The team consisted of Mr. Taylor Cullar, Education Policy Analyst, Florida Department of Education; Dr. Glenda Rabby, Florida Postsecondary Education Planning Commission; and Dr. Bogart R. Leashore, Dean of the Hunter College School of Social Work.

The purpose of this visit was to review the quality of the MSW program, to assess the need for continuation of the contract program based on state manpower needs, and to make recommendations to the Commissioner of Education and the Florida Legislature regarding continuation of the program.

The team met with the School of Social Work's Administrative Council which included: the Dean of the School of Social Work, Dr. Stephen Holloway; the Associate Dean, Dr. Jacqueline Mondros; the Assistant Dean for Student Services, Professor Laura Bronstein; and the Director of Field Instruction, Professor Anne Brennan. In addition, the team met with graduates of the MSW program who were supported by the contract program, employers of graduates supported by the contract program, current students supported by the program, and the faculty of the School of Social Work. The School of Social Work administers the contract program.

The Barry University School of Social Work is located in Miami, Florida. The MSW program was reaccredited in 1994 for the full eight year cycle by the Council on Social Work Education (CSWE), the national accrediting body for baccalaureate and master's in social work degree programs in the U.S. An onsite review of the School's self-study indicated that it was very well-prepared and responsive to the accreditation standards of CSWE. The CSWE site visit team report was also reviewed onsite and was found to be very positive, highlighting many strengths of the MSW program.

The MSW program at Barry University is a recognized high quality clinical social work program. It is distinguished from other MSW programs in the state by a focus on clinical social work. It also serves a very diverse population that consists of many older, working and part-time students. Like all MSW programs, the student enrollment is primarily women, with an approximate 20% male enrollment. However, unlike other programs, a significant number of Barry University's male MSW students are from racial and ethnic minority groups. The need for male professional social workers, especially from minority groups, is a national one and the state of Florida is fortunate to have an MSW program like Barry's which has a significant number of these students. It is also noteworthy that the School of Social Work is now housed in a new facility constructed for the Schools of Social Work and Education in 1993. It is an impressive facility with adequate office, classroom and meeting space.

Curriculum and Quality of the Program

The MSW program is a high quality one as reflected in the accreditation report by the CSWE site visit team. Current students, graduates, and employers reported that the program is of high quality such that students are well-prepared for advanced social work practice, the goal of all CSWE accredited MSW programs. The Barry curriculum is enriched by practice course electives which focus on pressing social problems such as HIV/AIDS, substance abuse, health care, aging, adolescents, and mental illness. The program hopes to expand these offerings to include courses related to work and employment, and immigration, two important social needs for the Miami area. Barry University engages a group of select professional social workers with expertise in these areas to teach as adjunct faculty. These courses, as well as the core required courses, make for graduates who can more effectively address the serious social problems and conditions confronting individuals, families and communities. This was confirmed in discussion with the employers of Barry graduates who provide in-patient and out-patient physical and mental health services, runaway youth services, family services, child abuse and neglect services, and services for the elderly. They include public and non-profit agencies that provide essential and critical services.

Students with whom the team met reported that the MSW program is of high quality and very demanding. They indicated that the program is very "personalized" as students are given individual attention by faculty, something they had much less of as undergraduates. They reported the faculty to be good teachers who are very helpful to them. Special note was made of the structure of their field instruction and the benefits they derive. In the regard, the School is increasingly using the field unit structure which consists of several students placed as a group or student unit in the same agency under the supervision of the same agency social worker or field instructor. This model of field instruction was very commonly used by schools of social work many years ago, but was used less and less over the years and replaced by single students placed in single agencies under supervision by an agency social worker. Recently, there has been a resurgence of interest among schools of social work in using the field unit model. However, few have been able to do so. The Barry School of Social Work seems to be in the forefront of the movement to reestablish these field units. Students reported that this model of field instruction is very effective in helping them learn and work in agency settings; they have the added benefits of learning from and helping each other. It should be noted that the field practicum or internship is a requirement for all CSWE accredited social work programs.

The clinical focus of the program is broad and consistent with the standard definition provided by the National Association of Social Workers. It is consistent with the curriculum content requirements of CSWE, and is delivered in incremental fashion through a sequence of courses each semester. Accepted and varied theoretical frameworks are taught and, as expressed by one student, client-driven approaches are used and families tend to be the focus.

Need for and Benefits Based on State Manpower Needs

Graduates and current students expressed strong sentiments regarding the benefits they received from the contract program. For many, it reduced the amount of loan funds needed and, for others, it meant not having to work as much while enrolled. The program also meant a shorter period of time to complete the degree for some. The agency executives reported that Barry graduates and students, including those supported by the contract program, were very well prepared to work with the area's most vulnerable populations including abused and neglected children, the homeless, the physically and mentally ill, runaway youth, and the elderly. Although state legislation is pending to extend licensure to baccalaureate social workers, the MSW is the only current level. This means that for many agencies, only licensed master's degree social workers may be employed. At present, licensure is for clinical social work at the MSW level for which the Barry MSW program is quite compatible. The passing rate for the licensing examination is reported to be about the same for the schools of social work in Florida including Barry University.

Approximately 525 students have completed the MSW degree with support of the contract program over the past five years, and within less than one month after graduation, more than 95% of these graduates were employed in social service positions. It was also reported that presently about 42 % of the contract supported students are minorities. As was previously indicated, a significant number of the male students are minorities. It was noted that contract supported students complete the degree requirements in a shorter time period than others, i.e., typically, one semester sooner. With contract support, some students are able to attend full-time and others are able to take more credits on a part-time basis.

The range of service areas that contract supported graduates are employed and current students do their field practicum cut across settings including: inner-city schools, hospitals, community-based clinics and centers, and public social services. Opportunities for employment in these and other settings are expected to continue into the new millennium despite, or perhaps because of, welfare reform, managed care, and other changes in the provision of services. Agency executives expect to continue to have social service positions available albeit changes in how services are delivered are occurring. They readily acknowledge and expect that the Barry University School of Social Work will continue to be a primary resource for filling these positions.

In order to meet the increasing need for financial support for its students, the School of Social Work has modified the awarding of contract support. Specifically, it has shifted from giving as much full support to partial support. Seemingly, partial support is also given, in many instances, later during the course of study rather than in the beginning. These shifts have occurred in order to serve more students and to facilitate completion of degree requirements. More importantly, these shifts have occurred because of rising costs and limited funds provided by the contract program.

The faculty highlighted the existence of many employment opportunities in Florida for MSW graduates even though salaries are not very high, i.e., \$26,000 to \$32,000 annually. In response to these opportunities, graduates are usually able to secure jobs in two weeks or less upon graduation. There is no apparent need for extensive job placement services, however, the School of Social Work hosts job fairs, and workshops on resume preparation. Most recently, it has included job postings on its web site. Graduates who received contract support indicated no problems in securing employment.

Recommendations

In meetings with all of the varied groups during this site visit, especially the students and faculty, it was clear that more funding is needed. The existing funding has served students and the state very well. However, there is a critical need for more state funding. Faculty and students expressed in unequivocal terms that financial support is a major problem for students, and that the contract program has been of tremendous assistance to those who have received it.

With its present shift toward greater support for more part-time students, the School of Social Work incurs greater costs, e.g., faculty, advisors, and support services, as these students are enrolled for a longer period of time. However, it is able to serve more students. This shift is the result of rising costs and increasing need for financial support for students. It is exacerbated by and the consequence of the limited funding provided for the contract program.

Unabated social problems in the state of Florida and across the nation, and the uncertainty of the future in this regard means that professionally prepared social workers will continue to be needed, and in greater numbers. The state of Florida is in a good position to effectively address these social problems with a professionally educated social work workforce, if it produces enough of them. Barry University is a valuable resource in this regard. Unless increased funding is provided, however, the state will likely find itself employing less educated and non-professional social service workers to do work that they are not prepared to do. The outcome, as in other states, will be devastating consequences for people in need, and more costly and less effective service delivery systems. It is strongly recommended that the state make a greater investment in its people and its future by increasing the funding for the contract program at the Barry University School of Social Work.

Bogart R. Leashore

Biographical Information

Bogart R. Leashore is presently Dean and Professor of the Hunter College School of Social Work, New York City. Previously, he served as Associate Dean of the Howard University School of Social Work, Washington, D.C. While at Howard, he was also a Research Associate at the Institute for Urban Affairs and Research, and Chair of the Department of Urban Affairs prior to becoming Associate Dean in the School of Social Work. In 1979, Dr. Leashore completed the Ph.D. degree in the Joint Program in Social Work and Social Science (Sociology) at the University of Michigan (Ann Arbor), the MSW (Masters in Social Work) degree in 1970 from Howard University, and the B.A. degree in Sociology from Xavier University of Louisiana in 1968.

Dr. Leashore is co-principal investigator of the National Resource Center on Permanency Planning at the Hunter College School of Social Work, funded by the Children's Bureau, U.S. Department of Health and Human Services. He is also principal investigator for state and city funded educational and training programs in social services. His scholarly and professional interests include clinical social work, child welfare, mental health, African American families, social welfare policies and services, and human service organizations. He has co-edited two books and has published numerous peer-reviewed journal articles, book chapters, book reviews and other publications. He regularly presents at major social work conferences.

Currently, Dr. Leashore is a member of the Commission on Accreditation of the Council on Social Work Education (CSWE), the national accrediting body for baccalaureate and masters degree programs in social work. He serves as Chair of the Commission's Subcommittee on Distance Education, and previously served as Co-Chair of the Commission. He is a member of the Editorial Board of *Social Work*, the nation's leading professional social work journal, as well as the Editorial Board of the journal of the National Association of Black Social Workers. He is a consulting editor for several other professional social work journals and previously served on the Book Committee of the National Association of Social Workers (NASW) Press. He is a member of the Board of Directors of the National Association of Deans and Directors of Schools of Social Work, and Vice-President of the New York State Deans Association.

Dr. Leashore serves on the Board of Trustees of the Children's Aid Society, New York City, and is a member of the Accountability Panel (formerly Child Fatality Panel) of the city's Administration for Children's Services. He was also a member of the Mayor's Commission on the city's Health and Hospitals Corporation. For his service to foster parents and to foster children, Dr. Leashore received two distinguished service awards from the Foster Parents Association, Washington, D.C.

APPENDIX F

Consultant Report: Optometry

Nova Southeastern University

CONSULTANT REPORT OF THE FIVE-YEAR REVIEW

Nova Southeastern University, College of Optometry
June 1, 1998

Optometric Consultant

Anthony F. Di Stefano, O.D., M.P.H.
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Nova Southeastern, College of Optometry participates in the Florida State program to offer optometric education to Florida residents at reduced tuition rates. The State partially funds the program to make up the difference between the College's tuition level and the amount paid by Florida students. Every five years, the Postsecondary Education Planning Commission is statutorily required to review such academic program contracts to establish the need for continuation and to assure that the program quality matches the quality of similar programs in state universities. The two focus areas for the review were quality and state workforce needs for the program.

This review was conducted by:

1. Dr. Anthony F. Di Stefano, optometric consultant, Pennsylvania College of Optometry
2. Dr. Cynthia P. Balogh, Education Policy Director, Postsecondary Education Planning Commission

Interviews were conducted with Dr. David S. Loshin, Dean of the College. The Dean made available a number of faculty students and administrators who graciously addressed a number of questions and issues posed by the interview team. The College participants included: Dr. Terrence Ingraham, Associate Dean for Student Affairs (phone conference); Ms. Adriana Stella (Optometry Admissions Counselor); Ms. Jodie Ropiccio (Optometry Admissions Administrative Secretary); Dr. Chris Woodruff (Student Placement); Drs. Scott Schatz, Stacy Coulter and Joe Pizzimenti, department chairs and directors; Ms. Kristy Canavan; Ms. Leslie Church, Mr. Jeff Oberg, Mr. Ben Naylor and Mr. Robert Rhodes (students); Dr. Kenneth H. Woodside, Dr. Lester E. Janoff, Dr. Stanley Grossman, Dr. Lynn Crespo, Dr. Pamela Oliver, Dr. Caryn Morrison, Dr. Bob Gilma and Dr. Mike Fendick (faculty); and Dr. Howard Braverman (preceptor).

MISSION AND GOALS

The Nova Southeastern University College of Optometry is the only institution in the State of Florida whose mission is to educate and train optometric physicians. The College was last evaluated by the Council on Optometric Education (COE) for professional accreditation in September 1997. It was granted the classification of "Accredited" in the COE's letter of October 20, 1997. The College is currently in the process of developing a strategic plan as well as an enhanced research plan consistent with the new University goals on scholarship. The College's optometric education philosophy is in harmony with the definition of an optometrist established by the American Optometric Association and includes a balance of basic and clinical sciences with a broad array of clinical experiences both on and off-campus.

MARKETPLACE NEEDS AND OPPORTUNITIES

The College is committed to promoting the career success of its graduates, who seek a variety of clinical practice opportunities upon completing the Doctor of Optometry program. It begins with career counseling on an informal basis during the first year and culminates with a web-based placement service that posts employment opportunities for new graduates. It also includes practice management course work and linkages to other employment services maintained by the American Optometric Association, the Association of Schools and Colleges of Optometry, the Florida Optometric Association and local optometric societies.

The College reports "little change in the demand for optometrists over the past few years in the State with the demand continuing to be strong." As an example, the College sites over forty employment opportunities posted on the Website at their last review. In addition, they postulate that managed care, the aging of the state population and the quality of their graduates will contribute to the continued strong demand for their graduates in Florida.

Additional information was gathered on the marketplace from the interviews. Dr. Ingraham (Student Affairs) projected a strong demand over the next five to ten years due to the proportionately large numbers of practitioners of retirement age. There also seems to be a special need for bi-lingual graduates (Hispanic). The distribution patterns of graduates seem to parallel national trends with a number of new graduates choosing a retail setting initially and then migrating to other forms of practice settings (e.g., private practice, partnerships, interdisciplinary and other group settings). Students noted greater career opportunities in northern and more rural settings in contrast to the southern and more urban locations. The College is to be complemented on its 1997 survey of recent graduates, which provides valuable insight and documentation of practice patterns and the factors that influence career decisions. Such studies should be continued on a regular basis.

Special consideration should be given to monitoring student indebtedness and its impact on career options. Increases in health professions student indebtedness is widespread and will influence marketplace dynamics. Student assistance on financial planning and debt management are encouraged. In addition, more detailed analyses of practitioner distribution in Florida, calculation of practitioner to population ratios by counties, and national comparisons are encouraged. The Florida Education, Training and Placement Information Program (a national model program) can also be utilized to help track the geographic distribution and income characteristics of graduates.

A recent study on "Location and Distribution of Eye Care Providers," conducted by Project Hope for the American Optometric Association, provides valuable data on national and state practitioner characteristics and distribution patterns (Schoenman, *et. al.*). Project HOPE reported that for the nation as a whole, there are about 12.3 optometrists per 100,000 population in contrast with ophthalmologists that have a ratio of 6.8 per 100,000 population. Thus, the number of optometrists exceeds the number of ophthalmologists by a factor of almost two to one. By comparison, Florida has a ratio of 11.2 optometrists per 100,000, slightly below the national average, but above the South Atlantic Region's average of 9.8. Similar comparisons with Florida ophthalmology data show that there are 8.0 ophthalmologists per 100,000 population, which is above the national and regional ratios of 6.8 and 7.0, respectively.

There is considerable geographic variability in the supply and relative availability of both providers. Specific analyses should take into account variations by county, metropolitan versus non-metropolitan areas, as well as optometry to ophthalmology ratios by geographic areas. Additional useful comparative information can be found in the 1995 RAND Study on "Estimating Eye Care Provider Supply and Workforce Requirements" (Lee, *et. al.*).

The American Optometric Association is conducting a follow-up study of workforce requirements that will provide additional insight on the nature of optometric practice and will yield a computer forecasting model that can be adapted to state needs. Given the sensitivity in some sectors of the profession on workforce issues, the College is encouraged to conduct ongoing workforce projections for the State.

CURRICULUM, PROGRAM AND CLINICAL PLACEMENTS

During the last ten years since its founding in 1988, the College of Optometry has made steady improvement in the overall quality of its academic programs and clinical placements. The culmination of this effort was its achievement of "full accreditation" in 1997 by the Council on Optometric Education. This accomplishment reflects the profession's public acknowledgement that the College has met the high standards expected by its accrediting body.

The recent appointment of the new Dean, Dr. David S. Loshin, has brought new administrative leadership to the institution and has energized the academic community to further strengthen its academic programs. Recent accomplishments include: reorganization of clinical management to permit the Dean greater control of operations and clinical education; new clinical management software that will enhance patient scheduling and marketing; purchase of computers and new clinical automated equipment for faculty; greater research support for faculty; greater use of new instructional technology in key courses; and expansion of its continuing education programs including a 110 hour Therapeutic Drug course.

Very significant is the recent expansion of the externship program to four three-month rotations that will include an elective clinical placement. This will help strengthen the clinical education program by providing a greater variety of off-campus training sites that will expose students to a rich mix of patient experiences in settings that approximate possible career choices. This program complements the internal clinic that is primarily for third year students. The College continues to seek ways to increase the number and types of experiences available in the on-campus clinical program.

A number of challenges in the academic program persist and were underscored by both the Dean and the faculty. For the most part, these needs are consistent with the recommendations of the COE in its last site visit. These include: a system to define and monitor the entry level expectations and experiences of the students; the more cost-effective and efficient management of the clinics; greater space and resources for faculty to meet the new scholarship and research expectations of the university; and filling a number of vacant faculty positions as well as recruiting an Associate Dean for Academic affairs.

Overall, the College is to be complemented for its continued academic growth. Although a number of challenges remain, it seems that the college has the administrative leadership, faculty dedication and university support to continue to improve its academic programs.

STUDENTS

The quality of students has risen consistently over the past five years. This is reflected in both entering GPA as well as performance in the standardized Optometry Admission Test Scores. The College has a comprehensive recruitment and admission system that promotes choosing students that have the probability of achieving, at a minimum, academic success. The steady increase in the program applicants from 341 in 1993 to 609 in 1997 is just one measure of the success of the College's efforts in this regard.

The College reported success in a number of formative and summative outcome measures. These include year by year comparisons of grade distribution by individual courses, attrition rate of students, and general performance in the National Board of Examiners in Optometry (NBEO) examinations. In particular, the College should be complemented for its increasing success in Part I (Basic Science) that is considered the most difficult of the

Boards. The College's pass rate over the past three years has been well over the national average. There has been some variability on student performance in Part II (Clinical Sciences) over the past five years and the College is taking steps to analyze this occurrence.

Students were interviewed and demonstrated a positive view of the College and its programs. They felt they were being well prepared for their careers especially through the expanded externship programs. This response was generally consistent with the outcome feedback obtained from recent graduates who responded to the College's 1997 alumni survey. The students were quite articulate and openly presented their perspectives on areas of possible improvement. These included: more and earlier financial planning support; the need for graduate housing; and the need for a greater number of third year clinical experiences. Increasing student debt, again, is an area that needs continued attention.

The College recognizes the need to strengthen and expand its minority recruitment program. This sentiment was consistently echoed at all levels – administration, faculty and students. In particular, special efforts are being made to increase the College's Hispanic and African American population. The Office of Student affairs has developed a broad-based approach from early identification programs at the high school level to targeted recruitment at historically black colleges. The lack of significant scholarship funds for these groups is a major obstacle that should be addressed.

FACULTY

The College has a core of 33 full-time faculty that is complemented by a good mix of part-time, interdepartmental and adjunct faculty. The faculty is relatively young, reflecting the recent founding of the institution. Interviews with faculty and department chairs reflected a positive orientation and strong commitment to the academic program and student achievement.

A number of challenges exist with faculty. As noted in discussions with the Dean and departmental chairs, there is a significant need for mid-career faculty who would bring additional academic experience and mentoring skills to help younger faculty develop. There is also a need to recruitment individuals with research experience and commitment in order to respond to the new expectation for greater scholarship and research. The lack of tenure and research facilities poses significant obstacles in this area. The development of a multi-year contract system and additional attention to increasing research resources should help to alleviate this problem.

The faculty seems to be responding positively to the increased expectation in scholarship and research, as well as to the new criteria for evaluation of performance. The College will need to attend to the transition challenges in this regard. Shifting job expectations, the need for greater research support and its integration into the academic culture, all could contribute to potential faculty anxiety and uncertainty. The administration seems sensitive

to these issues and has taken steps to encourage faculty empowerment and involvement in the academic development process.

The faculty expressed very positive feelings about the overall academic environment, especially being a part of the multidisciplinary Health Professions Division of the University. This setting provides a unique opportunity for faculty cross-fertilization across disciplines, as well as team-teaching across departments. The faculty seems very motivated to maximize the opportunity for more formal interdisciplinary curriculum planning that would enhance future integration and coordination of the various health care disciplines. The faculty also seems prepared to energetically participate in new pedagogical strategies in problem-based learning and in the use of instructional technology.

FACILITIES

The College has outstanding teaching, clinical and instructional support facilities. The recent merger and new campus has provided the academic program with state-of-the-art physical resources. The College is part of a 21 acre Health Professions Division of the University. A tour was conducted of the facilities and not surprisingly, all College groups – students, faculty and administration, found the setting, location and overall physical resources of the College to be outstanding. This achievement was made possible through the merger of Southeastern University with Nova University in 1994 to form the current institution, Nova Southeastern University. The move in 1996 of the Health Professions Division to its new 50 million dollar complex accorded the College of Optometry its current home alongside osteopathic medicine, pharmacy, allied health and medical sciences. The University is to be complemented on this unique achievement.

SUMMARY

The College of Optometry has made considerable strides over the past several years which have yielded full accreditation by the Council on Optometric Education. The quality of students is high and the faculty is positive and dedicated to continued academic achievement. The administration is leading the program and its faculty through an important period of both curricular and organizational change. It seems sensitive and responsive to the many challenges articulated in the previous sections.

The College needs to pay special attention to the needs of improved faculty recruitment and development, especially in the context of shifting job expectations. The introduction of multi-year contracts should be closely monitored in order to assess their suitability and impact as an alternative to tenure. Continued attention to the recruitment of quality students is necessary in order to sustain the significant improvements over the past several years. Special attention should be devoted to improved minority recruitment and retention of qualified African-American and Hispanic students.

The College is to be commended for its improvements in outcome measures of institutional performance. Its apparent increased attention to outcome studies as reflected in its 1997 alumni survey will serve to better monitor the impact of the program on its graduates. Additional effort should be devoted to workforce planning and analysis, utilizing national and state resources in order to assure the program's responsiveness to changing marketplace needs.

It is clear from the results of the recent alumni survey that the College of Optometry plays a very valuable role in meeting the needs of Florida's optometric workforce requirements. A significant portion of the College's enrollment is from Florida. As stated in the Executive Summary of the survey findings, "...nearly three-quarters of all survey respondents indicated that they would have moved away from Florida to pursue their professional education in another state if they had not attended the University." This finding, in combination with the fact that the retention of Florida students in the State is extremely high, contributes to the very positive impact that the College has had on Florida optometric services.

I recommend that this program of State support for the College of Optometry be continued. As discussed with the Dean during the exit interview, special consideration should be given to the possibility of targeting some of the State funds for additional minority recruitment efforts, faculty development programs and possible research enhancement, especially as it relates to the improvement of the academic program and student learning performance.

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