



Individuals with Baccalaureate Degrees Have Positive Outcomes; Increasing Production in Critical Areas Poses Challenges

at a glance

Individuals who received baccalaureate degrees from Florida universities secure jobs in the Florida workforce and experienced wage growth over time. Over time, the median wage of graduates with degrees that tend to lead to specific occupations, such as teaching or nursing, was less than the median wage of graduates with degrees, such as social science or business that lead to a variety of occupations. Baccalaureate degree holders also earned more over time than Associate of Science degree holders, even though most Associate of Science degrees led to high-wage health care occupations.

Universities' ability to increase the number of graduates with degrees that meet critical workforce needs is constrained by several factors:

- limited demand - due to market conditions or personal interests, students are not attracted to some fields of study;
- inadequate preparedness – students are often not academically prepared to take the advanced math or science courses required for some degrees;
- limited access – universities' ability to expand programs is limited by licensure or accreditation standards and shortages of qualified instructors; and
- high costs – degrees in technical fields cost more to provide due to higher faculty salaries, expensive laboratory equipment, and lower student/faculty ratios.

As these factors affect different degree fields in varying ways, different strategies are needed for increasing graduates with degrees in these areas.

Scope

As directed by the Florida Legislature, OPPAGA examined the extent to which persons who earn baccalaureate and graduate degrees from the state university system meet the state's workforce needs. We focused our review on two questions.

- What are the employment outcomes of persons who obtain baccalaureate and graduate degrees?
- What is being done to increase the number of graduates with critically needed degrees?

To conduct our analysis, we tracked cohorts of 1996 spring graduates into the workforce four and eight years after they graduated. We matched each graduate's degree information to wage data in the Florida Education and Training Placement Information Program (FETPIP) database, which maintains wage data for all Florida industries, but does not include individuals who are self-employed or work out of state. We also compared the wages earned by graduates in different fields of studies and different levels of degrees (Associate of Science, Bachelor of Arts, and advanced graduate degrees).¹ Finally, we examined efforts to produce more graduates with degrees that are critically needed to meet workforce or economic development needs and factors that affect those efforts.

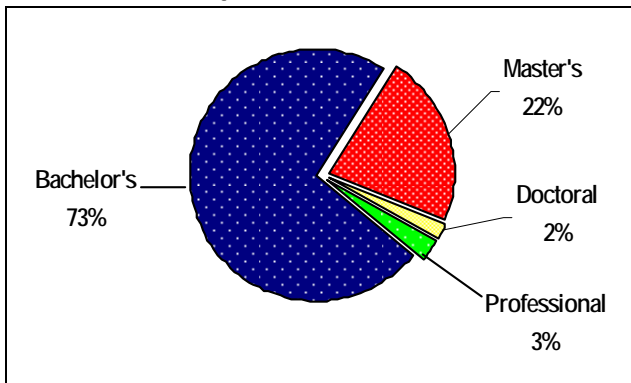
¹ A companion report provides data on the types of jobs held by persons who earn different degrees from different academic fields.

Background

The Legislature funds the State University System through a mix of general revenue and lottery appropriations. Universities also receive funds through student tuition and fees. For Fiscal Year 2005-06, the department reported it received \$1.84 billion from general revenue and lottery funds for university operations. In 2005, tuition averaged \$71.57 per credit hour for Florida resident undergraduates and an average of \$473.69 per credit hour for non-resident undergraduates. The total tuition paid by all students (undergraduate, graduate, and medical professional) provides approximately \$884 million for university operations.

Florida's 11 state universities awarded 61,538 undergraduate and graduate degrees to 59,771 graduates in the 2004-05 academic year. As shown in Exhibit 1, 73% of these degrees were awarded at the baccalaureate level, 22% were at the master's level, and 5% were at the doctoral or professional level.

Exhibit 1
Most 2004-05 Graduates Earned a Baccalaureate Degree



Source: Florida Board of Governors, Number of Degrees Awarded by the State University System.

Degrees awarded at Florida universities can be classified into two categories: degrees that prepare students for specific occupations and degrees that prepare students for a variety of occupations.² Degrees that prepare students for

² The category of specific occupation does not always guarantee that a student will go into a specific occupation. For example, a student receiving a teaching degree may go into a different occupation.

specific occupations include accounting, teacher preparation, engineering, or nursing. Degrees that prepare students for a variety of occupations include business administration, humanities, physical sciences, and social sciences.

A key issue in the State University System has been the extent to which it is producing graduates with the skills needed to meet the state's critical workforce needs. While the need for graduates with certain degrees, like teaching or nursing, is relatively easy to determine, the state's workforce need for graduates with degrees in areas such as psychology or English literature is not as apparent.

Findings

What are the employment outcomes of persons who earn baccalaureate and graduate degrees?

Graduates with baccalaureate degrees have positive employment outcomes

Although median wages for different degrees varied, graduates with baccalaureate degrees in the cohorts we tracked were securing jobs and experiencing substantial salary growth over time. This indicates that these graduates were contributing to meeting state workforce needs. As shown in Exhibit 2, of the top 14 bachelor degree programs, the highest average salaries generally went to graduates with degrees that correspond to a specific occupation and require math and science courses.³ These degrees included engineering, computer and information sciences, and health professions. Nevertheless, graduates with degrees that correspond to a variety of occupations also did well in the market. For example, four years after graduation, graduates with business degrees had median incomes of over \$36,000, while those with degrees in public administration, security and protective services, and communications, journalism, and related degrees earned median incomes over \$30,000 per year.

However, the majority of graduates with these degrees go into an industry that is closely related to their degree.

³ The top 14 bachelor degree programs represent 89% of all bachelor degrees awarded by the state universities in the spring 1996.

Exhibit 2

Most 1996 Graduates of the Top 14 Bachelor's Degree Programs Who Were Found Employed in Florida During 1997, 2000, and 2004 Experienced Substantial Earning Growth

| Type of Degree Program ¹ | Number of Students | Median Earnings After Graduation | | | Average Annual Percentage Increase |
|---|--------------------|----------------------------------|----------------|----------------|------------------------------------|
| | | 1 Year - 1997 | 4 Years - 2000 | 8 Years - 2004 | |
| Degrees that tend to lead to a specific occupation | 3,377 | \$24,960 | \$32,654 | \$38,500 | 6.39% |
| Visual and Performing Arts-Related ² | 68 | 15,132 | 23,558 | 33,289 | 11.92% |
| Accounting | 280 | 24,399 | 38,689 | 52,314 | 11.51% |
| Engineering | 398 | 32,611 | 46,418 | 64,767 | 10.30% |
| Other ³ | 318 | 17,250 | 28,602 | 34,034 | 10.19% |
| Computer and Information Sciences | 122 | 30,605 | 50,085 | 60,345 | 10.18% |
| Business Other ⁴ | 61 | 23,133 | 34,159 | 41,788 | 8.81% |
| Health Professions | 684 | 31,655 | 39,303 | 50,392 | 6.87% |
| Education | 1,446 | 24,105 | 29,196 | 33,428 | 4.78% |
| Degrees that lead into a variety of occupations | 2,922 | 19,127 | 30,350 | 40,188 | 11.19% |
| Biological and Biomedical Sciences | 141 | 15,064 | 28,512 | 37,711 | 14.01% |
| Social Sciences | 542 | 16,097 | 29,174 | 39,352 | 13.62% |
| English Language | 220 | 14,439 | 27,184 | 34,751 | 13.37% |
| Liberal Arts and Sciences ⁵ | 87 | 13,751 | 26,210 | 31,624 | 12.63% |
| Psychology | 404 | 15,783 | 25,741 | 33,981 | 11.58% |
| Communication, Journalism, and Related Programs | 178 | 18,584 | 30,405 | 39,101 | 11.21% |
| Visual and Performing Arts | 106 | 15,825 | 24,911 | 32,754 | 10.95% |
| Business | 913 | 24,413 | 36,246 | 50,000 | 10.78% |
| Security and Protective Services | 312 | 19,855 | 31,396 | 39,746 | 10.42% |
| Public Administration | 19 | 28,154 | 34,804 | 43,892 | 6.55% |

¹ This analysis is from the degree inventory of 1996; there are many additional degrees in the 2005 degree inventory.

² 'Visual and Performing Arts-Related' includes dance; commercial and advertising art; interior design; drama and dramatics/theatre arts; film/cinema studies; cinematography and film/video production; and music performance.

³ 'Other' includes advertising; journalism; public relations and organizational communications; radio and television; biochemistry; microbiology/bacteriology; and social work.

⁴ 'Business Other' includes insurance and risk management; hospitality administration/management; and real estate.

⁵ Within the liberal arts education there is a liberal arts and sciences degree which is an interdisciplinary field that includes a combination of the arts, biological and physical sciences, social sciences, and humanities.

Source: OPPAGA analysis of 1996 spring SUS graduate and wage data.

Exhibit 2 also shows that most graduates with baccalaureate degrees experienced substantial growth in salary over time. The highest percentage increase in median salaries went to graduates with biological and biomedical science, social sciences, and English language degrees. The lowest percentage salary increase over time went to graduates with degrees in education, health professions, and public administration.

Over time, baccalaureate degree holders have higher average earnings than Associate of Science degree holders

Even though most Associate of Science degrees are designed to meet specific workforce needs, on average, bachelor's degree holders earned more over time than Associate of Science degree holders. As shown in Exhibit 3, while an Associate of Science graduate started out making more on average than a university baccalaureate degree recipient, somewhere between four and eight years after graduation the baccalaureate degree recipient surpassed the associate degree recipient in earning power. The Associate of Science

degrees earned higher wages initially because 60% of the degrees were concentrated in health occupations that were in high demand in the labor market.

Exhibit 3
Over Time, Baccalaureate Degree Holders Have Higher Earnings Than Associate of Science Degree Holders

| | Median Wages of 1996 Spring Graduates | |
|------|---------------------------------------|---|
| | Baccalaureate Degrees (N=6,904) | Associate of Science Degrees (N=2,426) |
| 1997 | \$22,433 | \$27,298 |
| 2000 | 31,668 | 32,255 |
| 2004 | 39,402 | 39,234 |

Note: The number of graduates only includes those who were employed in each of the following years after graduation: 1997, 2000, and 2004.

Source: OPPAGA analysis of 1996 spring SUS and community college graduate and wage data.

One reason baccalaureate degree holders may have higher wages over time than associate degree holders is the versatility they gain from a liberal arts education. While some baccalaureate degrees may not correlate directly to a specific type of job, graduates with these degrees gain skills that are useful and valued by employers in a variety of occupations. These skills include problem solving, interpersonal relations, communications, and analytical techniques. Some employers prefer to hire these graduates due to their analytical and communication skills and their ability to adapt to new situations over time. Due to their versatility, graduates with these skills secure jobs in many different occupations and industries. Appendix A shows the industries in which graduates of various degree programs obtain employment.

Graduates with advanced degrees or multiple majors earn higher salaries

Across all degree fields, students who earned advanced degrees or multiple majors earned more on average than students with baccalaureate degrees in a single major. As shown in Exhibit 4, graduates with advanced degrees earned higher wages than graduates with baccalaureate degrees.

Exhibit 4
Graduates With Advanced Degrees Earn Substantially More Than Graduates Who Have Only Baccalaureate Degrees

| | Median Annual Earnings Eight Years After Graduation | |
|-----------------------|---|----------|
| | Graduates | Wages |
| Bachelor's | 6,904 | \$39,402 |
| Master's | 1,455 | 47,569 |
| Doctoral ¹ | 90 | 58,976 |
| Professional | 310 | 83,015 |

¹ Only 31% of the 1996 doctoral graduates were found employed in Florida in 2004.

Note: The number of graduates only includes those who were employed in each of the following years after graduation: 1997, 2000, and 2004.

Source: OPPAGA analysis of 1996 spring SUS and community college graduate and wage data.

Similarly, graduates who had more than one major were more attractive to employers over time than other baccalaureate degree holders. Exhibit 5 shows that graduates with double majors earned a median of almost \$4,000 more than those with single majors eight years after their graduation.

Exhibit 5
Baccalaureate Degree Holders With Multiple Degrees Earn More Than Those With Only One Major

| | Number of 1996 Spring Graduates Employed in 2004 | 2004 Annual Median Salary |
|----------------------------|--|---------------------------|
| Single Degree | 8,202 | \$38,861 |
| Double Majors ¹ | 209 | 42,500 |

¹ Most of the double majors were in the same broad degree field, such as two areas within the business field.

Source: OPPAGA analysis of 1996 spring SUS graduate and wage data.

In a likely response to these market conditions, more students are earning advanced degrees or degrees with dual majors. In 1991, one-fifth of university graduates earned either a master's or doctoral degree; this grew to a quarter of graduates in 2005. Similarly, in 1991, approximately 0.5% of the undergraduate students earned dual bachelor's degrees, compared to about 2% the undergraduate students in 2005.

Students also can improve their marketability by demonstrating their proficiency in certain skills in a certificate program. Although universities have increased certificate offerings, we could not assess the effectiveness of certificate programs in meeting workforce needs because the number of students enrolled in and receiving certificates from these programs is not currently tracked on a statewide level.

In addition to meeting workforce needs, graduates with baccalaureate degrees benefit the state in other ways. Graduates with baccalaureate degrees provide other societal benefits to Florida. According to national studies, individuals with baccalaureate or higher degrees are less likely to be unemployed or on public assistance; and more likely to be in good health, volunteer, and vote. Exhibit 6 shows these societal benefits for Florida baccalaureate degree graduates.

**Exhibit 6
Baccalaureate Degree Holders Have More Positive Social Outcomes**

| | Educational Attainment in 2003 for Florida Residents 25 and Older | | | |
|-------------------------------|---|-------------|----------------------|-------------------|
| | Less Than High School | High School | Some College (AA/AS) | Bachelor's Degree |
| Unemployed | 6.9% | 4.8% | 4.8% | 2.3% |
| On Public Assistance | 1.0% | 0.4% | 0.3% | 0.3% |
| Have Good Health ¹ | 69.4% | 80.9% | 87.1% | 91.6% |
| Volunteer | 13.4% | 22.9% | 29.9% | 29.4% |
| Vote | 41.0% | 57.3% | 66.5% | 76.9% |

¹ Respondents in good health reported that they were in "excellent, very good, or good" health on the March 2004 U.S. Census Bureau's Current Population Survey.

Source: The Investment Payoff: Institute for Higher Education, February 2005.

What is being done to increase the number of graduates with critically needed degrees?

The Board of Governors and universities are working to increase the number of graduates with critically needed degrees. In response to projected shortages of graduates with critically needed degrees, the Florida Board of Governors developed a strategic plan that directs the universities to increase degree production in these areas. In addition, the board identified areas in

which degree production should be expanded to facilitate future economic development. The board's recommendations for degree production focus on three areas:

- critical needs – fields in which a demonstrated shortage of professionals in Florida already exists, including education and health;
- emerging technologies – fields that are important to the economic development of Florida and in which the state already has an advantage or critical mass, including engineering and computer sciences; and
- high wage / high demand – fields that are in high demand by state or national employers as evident by initial high wages to attract qualified applicants. These include the fields of architecture, accounting, and international business management.

Universities are working to expand the number of graduates with these targeted degrees in a number of ways. For example, they are increasing tutoring and other academic support resources to increase retention of students in engineering, nursing, and other high-priority areas that require advanced math and science courses. Universities also are increasing partnerships with clinical facilities and using alternative teaching methods to expand nursing programs.

The need for teachers and nurses is higher than the number of graduates with nursing or teacher preparation degrees. Despite these efforts, the state university system is not producing sufficient graduates with degrees that are highly demanded in Florida's workforce. For example, as illustrated by the most recent comparable data in Exhibit 7, the number of graduates earning education and nursing degrees in 2003-04 fell far short of the projected demand for teachers and nurses in 2004-05.⁴

⁴ Due to class size reduction at the class level, the Department of Education projects that the gap between degree production and need for teachers will widen substantially. It is projected that 31,791 teaching vacancies will need to be filled in 2006-07, of which over 11,000 are due to the classroom size reduction requirement. After accounting for new graduates, out-of-state hires, and teachers from other approved routes, the Department of Education projects that a shortage of 8,642 teaching jobs will exist and still need to be filled.

**Exhibit 7
Projected 2003-04 Openings for Teachers and Nurses Were Greater Than Number of Nursing and Education Graduates**

| | Registered Nurses | Education |
|--|--------------------|---------------------------|
| Projected Openings | 7,158 ² | 18,667 ³ |
| Degrees Awarded 2003-04¹ | | |
| Community Colleges | 3,595 | N/A |
| Independent Colleges and Universities | 500 | 4,325 |
| State Universities | 1,639 | 6,854 |
| Total Degrees Awarded | 5,734 | 11,179⁴ |

¹ We used 2003-04 since it was the most recent year for degree completion data for all three institution types.

² Average Annual Openings 2004-2012 (separations and growth), Agency for Workforce Innovation.

³ The Department of Education 2004-05 projection of teacher position openings (21,313) was adjusted by the department’s estimate that at least 12% of the openings would be filled by teachers who are moving between school districts or coming back into the workforce. The 18,667 represents the positions that need to be filled after teachers move between districts.

⁴ Total education degrees include other positions in addition to classroom teachers. New K-12 classroom teachers (non-special education) represent 58% of the 2003-04 education graduates.

Source: OPPAGA analysis of SUS degree data, AWI occupation projections, and Department of Education projections.

Several factors adversely affect university ability to increase the number of graduates in education and health. University ability to produce graduates that meet the board’s criteria are constrained by low student demand, stringent program requirements, restrictive licensure or accreditation requirements, and the high cost of expanding some programs.

- Low student demand. Since students have freedom of choice when deciding a major and career, universities have limited ability to direct students into a particular program. In selecting majors, students consider not only the job market but also their personal interests and skill sets. Considering these factors, a student may decide that a particular career path is not very promising or does not fit his or her interests.
- Stringent program requirements. Some degree programs have strict course requirements for which students are unprepared—engineering degrees, for example, generally require four years of calculus. Students who initially declare major in these programs may change their

majors to degree programs with less demanding requirements.

- Licensure or accreditation requirements. Restrictive licensure or accreditation standards can result in shortages of faculty, laboratory space, or intern slots. This limits the number of students who can be admitted to a program. For example, accreditation standards for nursing programs limit the number of students faculty can supervise in clinical settings. This has likely contributed to a nationwide shortage of nursing faculty.
- High program costs. Due to the nature and complexity of the program, some degrees in fields such as engineering carry high costs. Given limited resources, universities need to carefully consider which degree programs to expand in order to best meet the needs of their students. Exhibit 8 shows that many of the programs targeted by the Board of Governors have above average expenditures per student credit hour.

**Exhibit 8
Targeted Degree Programs Are More Expensive Than the Average Bachelor’s Degree**

| Undergraduate – Upper Division (2003-04) | |
|--|-------------------------------------|
| | Expenditure Per Student Credit Hour |
| Engineering | \$404.14 |
| Liberal Arts and Sciences ¹ | 376.68 |
| Visual and Performing Arts | 360.73 |
| Computer and Information Sciences | 322.80 |
| Health Professions | 283.58 |
| Biological and Biomedical Sciences ² | 265.36 |
| Education | 259.69 |
| Average for All Degree Fields | 242.77 |
| Public Administration and Social Service Professions | 237.06 |
| English Language / Letters | 217.28 |
| Social Sciences | 203.69 |
| Psychology | 194.65 |
| Communication, Journalism, and Related Programs | 191.90 |
| Business | 180.80 |
| Security and Protective Services | 146.48 |

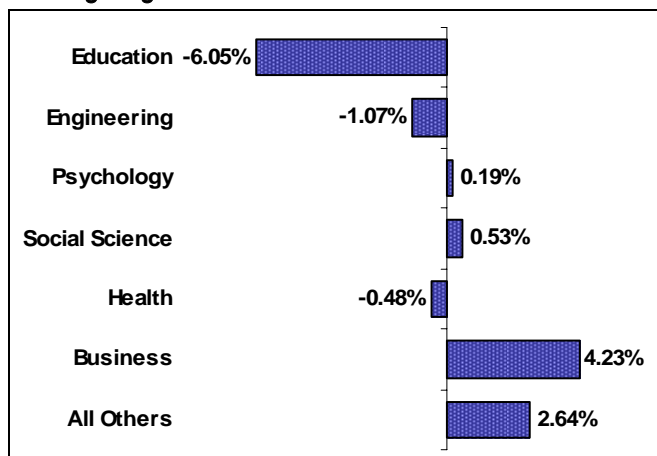
¹ Since this is an interdisciplinary program, students may be taking more science courses than in other programs.

² These courses are also referred to as the Life Sciences.

Source: 2003-04, State University System Expenditure Analysis.

The effects of these constraints are illustrated by three degree programs. The effect of these constraints can be illustrated by three degree programs—education, nursing, and business. The percentage of students graduating from education and nursing programs has declined in recent years, while the percentage of students opting for business programs increased. (See Exhibit 9.)

Exhibit 9
Since 1996, a Smaller Proportion of Students Are Earning Degrees in Education and Health Fields



Note: Figures are percentage point difference of graduates from 1996 to 2005.

Source: OPPAGA analysis of state university degree data.

Education. Although teachers are critically needed by the workforce, teacher preparation programs have a difficult time attracting students. The number of students graduating from teacher preparation programs within schools of education has fallen from a high of 4,915 in 1998-99 to 3,842 in 2004-05, a decline of about 22%.^{5,6} This contributed to the field’s decreasing share of total college graduates, which declined by 6% as shown in Exhibit 9.

⁵ Some of these students may opt not to become certified to teach in the classroom.

⁶ The Department of Education includes other teacher preparation programs outside of schools of education when calculating degree production of teacher preparation programs. Of the graduates in our cohort who became employed in the education industry, 42% had degrees in fields other than education. (See Report No. 05-59,) Of course, not all of these graduates may be employed as teachers. For example, psychology majors could be employed as school psychologists.

The declining student demand for teacher preparation programs within schools of education can be attributed in part to the market. As shown in Exhibit 2 on page 3, education graduates had below-average median earning growth compared to other types of degree holders over the 1996 through 2004 period. In addition, under current state administrative rules, students who wish to become teachers must take 45 hours of general education classes instead of the 36 hours normally required for other undergraduate degrees.⁷ If students are not aware of this requirement or have not chosen a teacher preparation major when they enter college, they may take courses that do not meet graduation requirements. This can lengthen the time students need to earn their degrees and discourage some students from majoring in teacher preparation programs.

Nursing. Unlike teaching, nursing does not have a shortage of applicants. High salaries and guaranteed jobs are effective in stimulating demand for nursing programs. However, stringent program requirements limit the state’s ability to quickly expand these programs. In 2003-04, baccalaureate nursing programs turned away 2,326 qualified applicants.⁸

The shortage of space in nursing programs is due to a number of related factors. The high demand for nurses coupled with licensure requirements that limit the number of students per faculty in clinical settings has likely contributed to the nationwide shortage of nursing faculty.⁹ This has driven up the salary requirements for nursing faculty, which when added to the high cost of laboratories and small class sizes, makes nursing programs relatively expensive. This limits university ability to expand these programs without affecting other programs.

⁷ The rules for students in elementary teacher preparation programs were made more restrictive in 1999, while the rules for secondary teacher preparation program were made more restrictive in 2001.

⁸ Florida Center for Nursing: Nurse Education in Florida January 2005 Survey.

⁹ This ratio is established by the Florida Board of Nursing. Colleges and universities may have lower ratios based on university or clinical facility requirements.

In addition to these constraints, hospitals and other healthcare facilities have limited clinical space for nursing students. While universities may be able to expand nursing programs on their campuses, they have less control over capacity at clinical settings, which restricts their ability to increase production of nursing graduates.

Business. In contrast to the critically needed graduates of nursing and teacher preparation programs, students have flocked to business programs, and universities have been able to accommodate this demand. Between 1997 and 2004, enrollment in business programs increased by 40%. Furthermore, the proportion of all college graduates who earned business degrees between 1996 and 2005 increased as shown in Exhibit 9.

Students likely find business programs attractive for two reasons. First, over time, business graduates earn more than graduates from most other degree programs. While 1996 education and business graduates earned similar salaries four years after their graduation; after eight years, business graduates' salaries doubled while education graduates' salaries increased at half this rate. (See Exhibit 2.) Second, students may find business degree programs attractive because they typically do not require advanced math or science courses.

Further, because business degrees are relatively inexpensive to produce, universities may be better able to expand these programs to meet growing student demand. For example, if the two programs had the same credit hour requirement, the difference between the cost of business and health care programs allows universities to serve

1.5 business students for every student in a health care program.

The Legislature has taken steps to produce more critically needed degrees

During the 2005 legislative session, the Legislature created the SUCCEED Florida grant program which provided \$15 million to state and private institutions to expand nursing and teaching programs.¹⁰ The Department of Education administers the program and evaluated and awarded universities grant funding based on the strategies they proposed to produce more graduates of teacher preparation and nursing programs. The department expects the SUCCEED program to graduate 2,000 more teachers and 700 more nurses over the next three years.

SUCCEED Nursing Programs. As shown in Exhibit 10, five state universities received SUCCEED grants for nursing programs. These universities intend to use the grant funding to implement a variety of strategies to produce more nursing graduates with advanced degrees, who can then become nursing instructors. These strategies include increasing the availability and use of distance learning programs for advanced nursing degrees, purchasing patient simulators and other technology to help alleviate the need for clinical space, developing new clinical laboratory facilities, and developing accelerated graduate programs.

¹⁰ State and private universities, community colleges, and school districts were all eligible to apply for the SUCCEED grants.

**Exhibit 10
Five of the 11 Universities Received a SUCCEED Florida Grant for Nursing Programs**

| University | Amount | Purpose |
|--|--------------------|--|
| Florida International University (FIU) | \$1,282,500 | Partnership with Miami Dade College for an Registered Nurse (RN) to Master of Science in Nursing (MSN) program |
| Florida State University (FSU) | 366,300 | RN to MSN partnership with community colleges to produce more faculty |
| University of Central Florida (UCF) | 420,397 | RN to MSN, PhD fast track programs |
| University of North Florida (UNF) | 1,194,378 | Partnership with UF Hospital for MSN degrees |
| University of South Florida (USF) | 1,280,794 | Fast track MSN to PhD program |
| Total | \$4,544,369 | |

Source: Florida Department of Education.

SUCCEED Teacher Preparation Programs. As shown in Exhibit 11, six state universities received SUCCEED grants for teacher preparation programs. These universities will use grant funds primarily to increase their efforts to recruit students into teacher preparation programs and to provide scholarships for students entering into these programs, particularly in areas where the need is highest, such as secondary math and science and special student education. Recruitment strategies vary by institution and include establishing freshmen learning communities for teacher preparation students, going into high schools to interest students in becoming teachers, encouraging unsuccessful science and engineering majors to switch to a teacher preparation program, and providing accelerated certification programs for students who have already earned a bachelor’s degree.

Grant funding is beneficial in responding to workforce issues. Using grants to expand critically needed higher education programs has two advantages. First, since the challenges that must be overcome to produce additional graduates in critically needed areas vary, the solutions must also vary. Because of the flexibility of the granting process, grants allow universities to develop different solutions for different degrees.

Second, the granting process also allows grant funds to be shifted to new areas as workforce needs change. Demand for various higher education degrees is often cyclical. A grant program design allows the Legislature to easily shift funds when workforce needs change. However, grants from non-recurring funds may inhibit universities from hiring new staff or faculty. With the uncertainty of non-recurring grant award amounts from year to year, universities may find it difficult to use grant money to support faculty salaries or sustain programs over time.

Exhibit 11

Six of the 11 Universities Received a SUCCEED Florida Grant for Teaching Preparation Programs

| University | Amount | Type of Education |
|---|--------------------|-------------------------------------|
| Florida Agricultural and Mechanical University (FAMU) | \$ 252,000 | Math and Science Programs |
| Florida Gulf Coast University (FGCU) | 252,000 | Math, Science, and Reading Programs |
| Florida State University (FSU) | 216,224 | All Education Programs |
| University of Central Florida (UCF) | 251,396 | ESE Graduate Programs |
| University of North Florida (UNF) | 252,000 | New Educator Preparation Institute |
| University of West Florida (UWF) | 191,835 | New Educator Preparation Institute |
| Total | \$1,415,455 | |

Source: Florida Department of Education.

OPPAGA supports the Florida Legislature by providing evaluative research and objective analyses to promote government accountability and the efficient and effective use of public resources. This project was conducted in accordance with applicable evaluation standards. Copies of this report in print or alternate accessible format may be obtained by telephone (850/488-0021 or 800/531-2477), by FAX (850/487-3804), in person, or by mail (OPPAGA Report Production, Claude Pepper Building, Room 312, 111 W. Madison St., Tallahassee, FL 32399-1475). Cover photo by Mark Foley.

Florida Monitor: www.oppaga.state.fl.us

Project supervised by Jane Fletcher (850/487-9255)

Project conducted by Emily Dendy (850/487-9227), Brian Underhill (850/410-4793), and Martha Wellman (850/487-2977)

Gary R. VanLandingham, OPPAGA Director

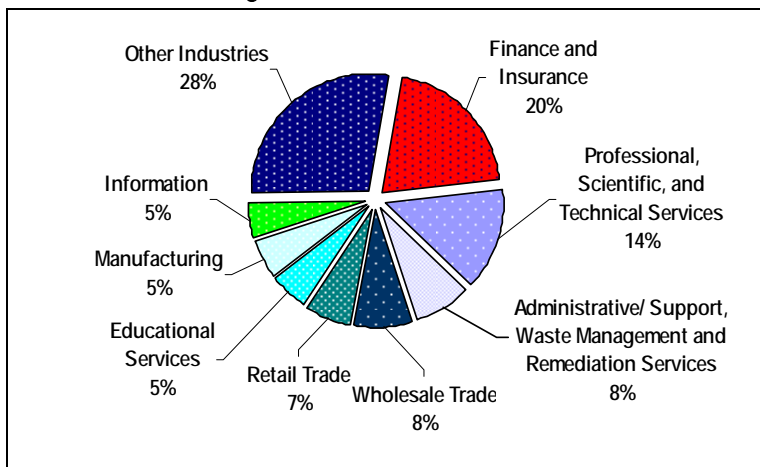
Appendix A

Industries in Which University Graduates from Degrees That Correspond to a Variety of Occupations Are Employed

The following graphs illustrate in which industries the 1996 spring baccalaureate graduates from degrees that correspond to a variety of occupations were employed eight years after graduation. Many of these degree recipients were employed in industries of critical need: educational services and healthcare.

Due to the versatility of the degree, business majors tended to find employment in a wide variety of industries in Florida, with a large concentration in the finance and insurance, and professional, scientific, and technical services industries (see Table A-1).

**Table A-1
Business and Management Graduates**



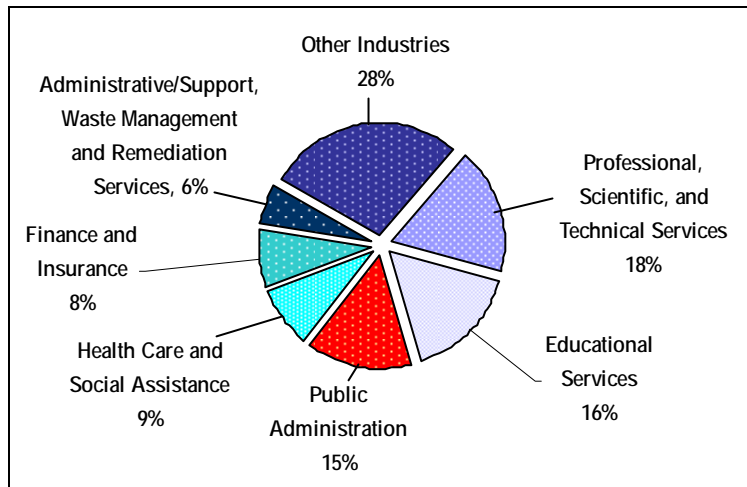
Note 1: Some of the main 'Other Industries' include information (4%); health care and social assistance (4%); construction (3%); real estate, rental, and leasing (3%); accommodation and food services (3%); management of companies and enterprises (1%); and transportation and warehousing (2%).

Note 2: The 'Administrative/Support, Waste Management and Remediation Services' category includes employment services; credit bureaus; telemarketing bureaus; investigation services; collection agencies; court reporting services; convention and visitors bureaus; and waste management services.

Source: OPPAGA 1996 spring cohort analysis.

Students who graduated with a social services degree were more likely to be employed in industries connected to the public or nonprofit sector. Almost 25% of these graduates were employed in the education or healthcare industry (see Table A-2).

**Table A-2
Social Services Graduates**

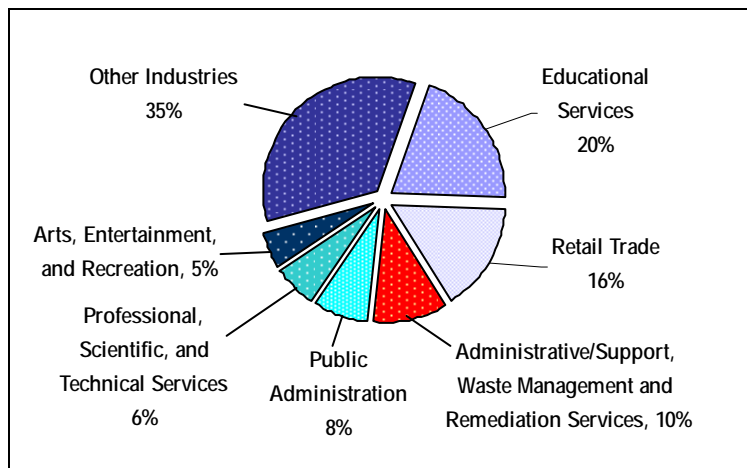


Note: Some of the main 'Other Industries' include retail trade (4%); wholesale trade (3%); information (3%); accommodation and food services (2%); manufacturing (2%); transportation and warehousing (2%); and arts, entertainment, and recreation (2%).

Source: OPPAGA 1996 spring cohort analysis.

The largest portion of those graduating from the interdisciplinary field of liberal arts was employed in the education services industry. The remaining graduates were employed in a variety of industries (see Table A-3).

**Table A-3
Liberal Arts Graduates**

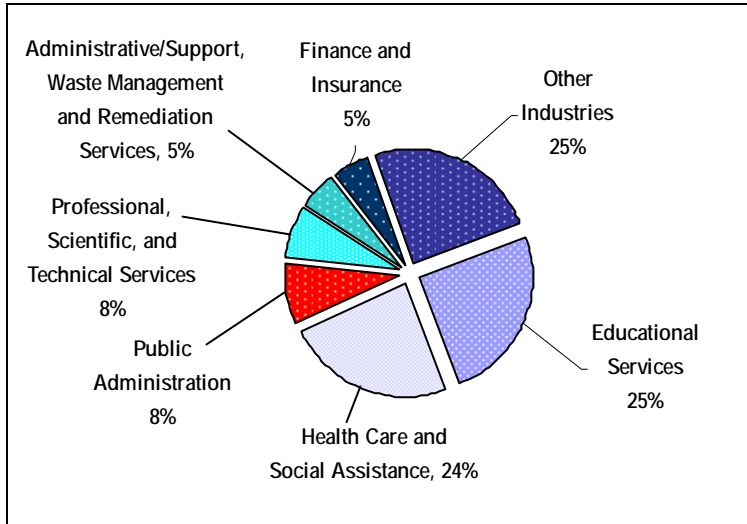


Note: Some of the main 'Other Industries' include finance and insurance (4%); accommodation and food services (4%); construction (3%); wholesale trade (3%); health care and social assistance (3%); manufacturing (3%); agriculture, forestry, fishing, and hunting (2%); and information (2%).

Source: OPPAGA 1996 spring cohort analysis.

Psychology graduates mainly found employment in the two critical need areas of the state: education and health. The remaining half was employed in a variety of industries (see Table A-4).

**Table A-4
Psychology Graduates**



Note: Some of the main 'Other Industries' include retail trade (4%); wholesale trade (3%); information (3%); accommodation and food services (2%); and manufacturing (2%).

Source: OPPAGA 1996 spring cohort analysis.