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1999 ANNUAL REPORT





The new millennium coincides with a time of unprecedented opportunity for research and graduate education at the University of Florida.

This year, the State University System designated UF as one of three Research I institutions, focusing on research and graduate education. This state designation reaffirms UF's long-standing national reputation for research and graduate education excellence. UF has been a member of the Association of American Universities for 15 years and has long been designated a Research I institution by the Carnegie Commission on Higher Education.

First-quality graduate students are essential to the university's research effort. They provide both innovative ideas and an eager workforce to assist the UF faculty. A host of new graduate funding initiatives, including the Alumni and Presidential fellowships, provide the university with expanded resources to compete with our peer institutions for the very best students.

The Division of Sponsored Research is committed to facilitating the efforts of our faculty to develop the most competitive grant proposals and to managing successful proposals in the most effective and efficient manner. These grants are the financial underpinnings of our research enterprise, providing the physical resources to turn faculty ideas into reality.

The Graduate School provides quality services to graduate programs, faculty and students with the goal of advancing the creation, promotion and administration of top-ranked graduate programs throughout the university. The essence of research, creativity and graduate education lies in the classroom, the laboratory, the studio and even thousands of miles from the campus at a field research site or through a distance learning program. The challenge is to facilitate this vast and heterogeneous set of activities through novel and flexible administrative policies and procedures.

Vital to the university's graduate education goals in the future will be an innovative and productive approach to nurturing a new generation of scholars and 21st-century scholarship for the economic and social welfare of Florida, the nation and the world.

Faculty, staff, students, alumni and supporters play a vital role in all of our education and research endeavors. Their promotion of the university to prospective research sponsors, graduate students and donors is a cornerstone of our progress. This annual report is produced on their behalf, providing a snapshot of their extensive, outstanding work.

Sincerely,

A handwritten signature in black ink that reads "Win Phillips". The signature is written in a cursive, flowing style.

Win Phillips
Vice President and Dean
Office of Research & Graduate Programs



Contents

Sponsored Research Overview	4
Research 1998-99 Statistics & Trends	6
Graduate Education Overview	10
Graduate Education 1998-99 Statistics & Trends	12
Contact Information	16

Research Overview

During the last two decades, American universities, the federal government and private industry have been redefining their roles in performing basic scientific research, applying that research to real-world problems, then transferring the solutions to the marketplace for the benefit of all people.

After years of growth, the share of U.S. university research supported by the federal government has declined steadily from about 70 percent in 1970 to between 59 and 60 percent in 1999. During that same period, industrial support for university research has grown faster than any other sector, from less than 3 percent in 1970 to 7 percent in 1998.

Nowhere are these new relationships illustrated better than at the University of Florida. Although federal support to UF has grown at a healthy 7.6 percent annually over the last 20 years, as a percentage of UF's total funding, the federal contribution has



The U.S. Department of Defense and the Electric Power

Research Institute (EPRI) are funding materials science and engineering Professor Stephen J. Pearton's research into the next generation of semiconductor and magnetic storage devices.

gotten smaller. In 1999, federal funds made up 53 percent of all research support to the university compared to 77 percent in 1977.

Conversely, non-federal funding has grown at an annual rate of 13.3 percent, led by dramatic increases in industry support. In 1977, industry awards made up just 7.54 percent of UF's total research support. This has grown to 18 percent in 1999. Between 1997-98 and 1998-99, in particular, industry funding increased by an unprecedented 38 percent to \$51.5 million.

As one of the country's most comprehensive universities, the University of Florida has much to offer industry. Its strong programs in engineering, the health sciences and agriculture provide many opportunities for relationships with industry.

Similarly, the arts benefit from and contribute to the state and national entertainment industry. For example,

Summary of Sponsored Research Activity FY 1998-99

Proposals Submitted	3,741
Grant and Contract Dollars Requested	\$430,191,103
Awards Received	4,666
New Awards Received	1,653
Continuations or Supplementals	2,721
Grant and Contract Dollars Awarded	\$280,105,590
Gifts for Research	\$15,802,840
Total Sponsored Research Funding	\$295,908,430
Grant and Contract Direct Expenditures	\$248,308,473
Recovered Indirect Cost Expenditures	\$32,099,744
Grant and Contract Dollars Expended	\$280,408,217
Projects Active During the Fiscal Year	3,535
Faculty Receiving Awards	1,656
Sponsors	903

Silicon Graphics, the computer company that created the dinosaurs in “Jurassic Park,” and Cinesite Visual Effects, a Kodak company that contributed to the special-effects for “The Mummy” and “Titanic,” are sponsors of the new Digital Arts & Sciences Program. This collaborative effort between the colleges of engineering and fine arts is a response to high demand for skilled workers in the growing digital effects industry behind movies, CD-ROM games and educational media.

The University of Florida Research Foundation Professors featured throughout this annual report are vital to the continued development of the university’s research funding relationships. The 30 UFRF Professors, selected annually by their college deans and supported by Research and Graduate Programs, are productive researchers and many have multiple government- and industry-sponsored grants.

For example, materials science and engineering Professor Stephen J. Pearton has a \$1 million grant from the U.S. Department of Defense and a \$541,000 grant from the Electric Power Research Institute (EPRI) to develop the next generation of semiconductor and magnetic storage devices. Potential applications for these devices include electric automobiles, advanced aircraft and ships and control of electricity distribution on the power grid.



Dr. Carl Pepine, chief of cardiovascular medicine in the College of Medicine, manages one of the largest private grants ever awarded to the university, a \$7.4 million grant from the German pharmaceutical giant Knoll AG.

Dr. Carl Pepine, chief of cardiovascular medicine in the College of Medicine, is supported by the National Institutes of Health (NIH) and 10 pharmaceutical companies. Pepine manages one of the largest private grants ever awarded to the university, a \$7.4 million grant from the German pharmaceutical firm Knoll AG to conduct Internet-based clinical trials comparing treatments for coronary artery disease in patients with hypertension.

UF’s Institute of Food and Agricultural Sciences has identified water management, quality and allocation as one of its key research imperatives. K. Ramesh Reddy, graduate research professor of soil and water science, illustrates IFAS’ efforts to contribute to the protection of Florida’s water supply. Reddy’s research on phosphorous biogeochemistry in wetlands has drawn the support of private industry and the U.S. Environmental Protection Agency. Data he collected on the long-term phosphorous storage capacity of the soils in the Everglades played a pivotal role in the design of protective stormwater treatment areas.



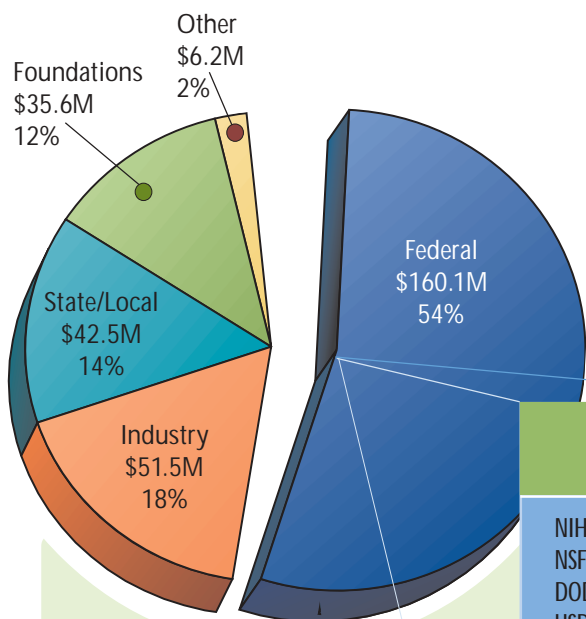
Ramesh Reddy, graduate research professor of soil and water science, collected data on the long-term phosphorous storage capacity of the soils in the Everglades that played a pivotal role in the design of protective stormwater treatment areas.

UF’s technology licensing program illustrates the potential for public and private partnerships that result in benefits for all. Royalty and licensing income from UF-developed intellectual property reached a record \$21.7 million in 1998-99. Trusopt™, a glaucoma drug licensed to Merck Pharmaceuticals, accounted for more than \$13 million.

The late Thomas Maren, a graduate research professor of medicinal chemistry, received years of basic research support from NIH before he began collaborating with Merck on Trusopt™, which has been hailed as a breakthrough in the treatment of glaucoma, the primary cause of blindness in African Americans and the second leading cause of blindness in the United States.

As much as licensing a product represents a successful result to the research process, it also represents a beginning, since much of the income the university receives from products such as Trusopt™ and Gatorade™ supports the university infrastructure to promote new research endeavors.

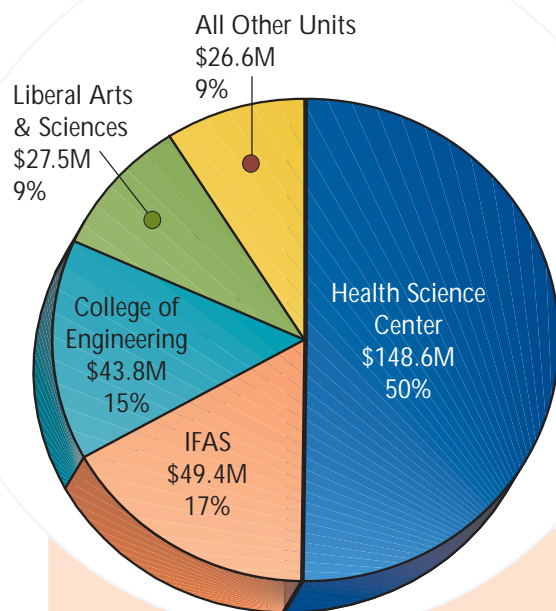
Research 1998-99



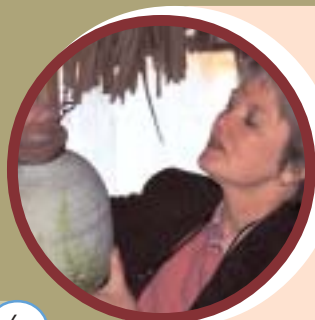
Research Awards
by Sponsor
FY 1998-1999

Federal Awards by Agency

NIH	\$63.2M
NSF	\$21.7M
DOD	\$12.7M
USDA	\$12.4M
Education	\$7.0M
Energy	\$6.4M
NASA	\$5.7M
Veteran's Affairs	\$4.7M
Commerce	\$4.3M
DOT	\$4.0M
HRS Administration	\$3.5M
US AID	\$3.3M
HHS	\$3.1M
Dept. of Labor	\$2.5M
Other Federal	\$2.3M
EPA	\$1.9M
Other HHS	\$1.4M
TOTAL	\$160.1M

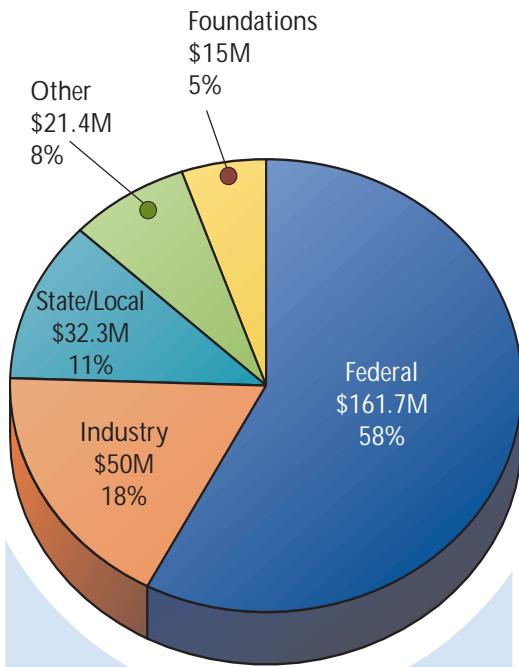


Research Awards by
Major Academic Unit
FY 1998-1999

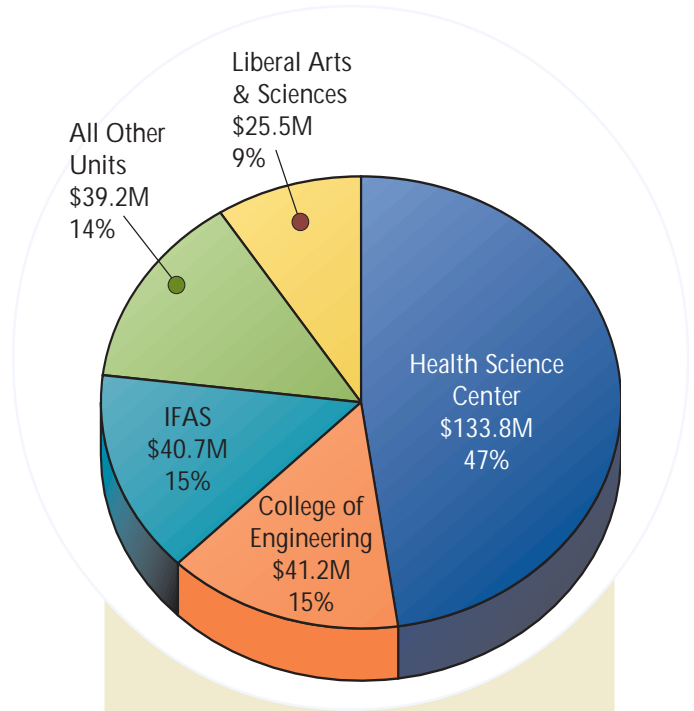


"My archaeological research program has been designed to elucidate the mechanisms and consequences of encounter and exchange among Spaniards, American Indians and Africans in the 16th-century American colonies."

Kathleen A. Deagan, Ph.D.
Distinguished Research Curator, Florida Museum of Natural History



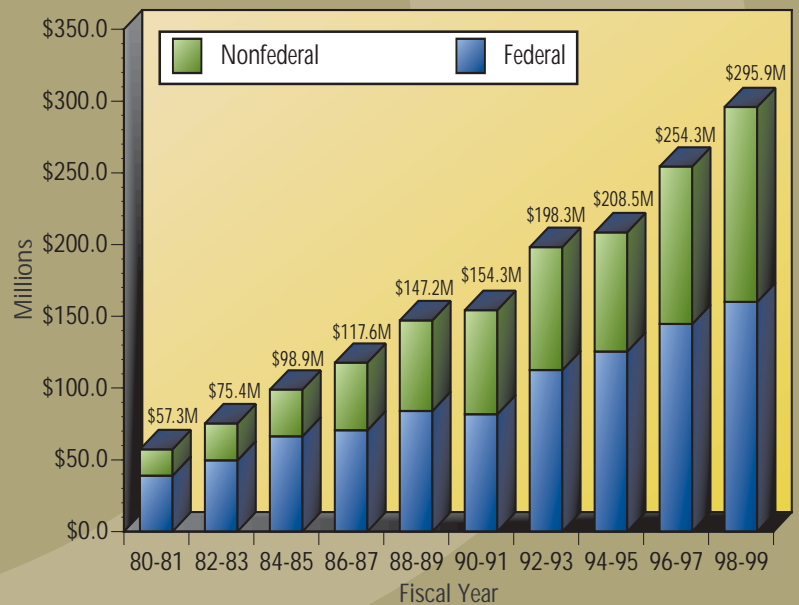
Research Expenditures
by Sponsor
FY 1998-1999

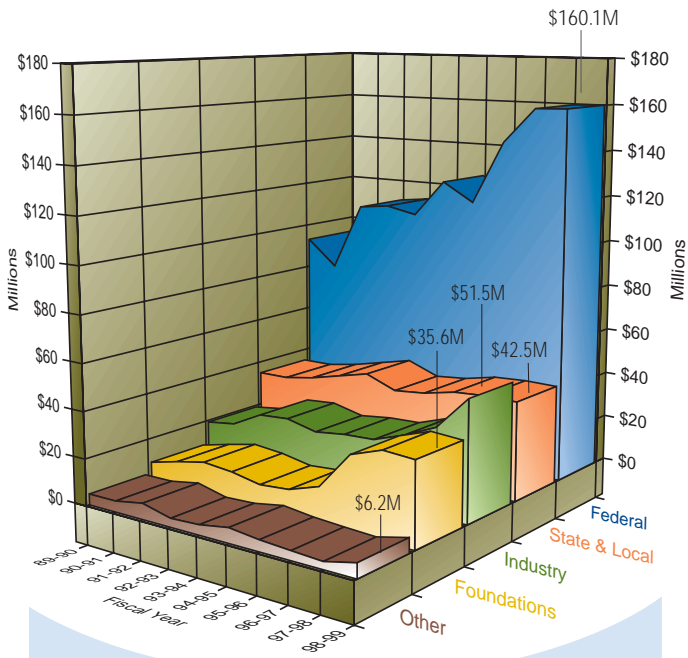


Research Expenditures by
Major Academic Unit
FY 1998-1999

Sponsored Research Awards Federal/Nonfederal FY 1981-1999

Since 1981, total sponsored research awards have grown more than fivefold. In FY 1998-99, federal sponsorship exceeded \$160 million, a figure that has nearly doubled in the last 10 years. In the past fiscal year, non-federal sponsorship grew 16.4 percent to \$139.8 million, more than double the FY 1989-90 level. In the last 20 years, federal sponsorship has increased an average of 7.6 percent annually while non-federal sponsorship has increased an average of 13.3 percent annually.



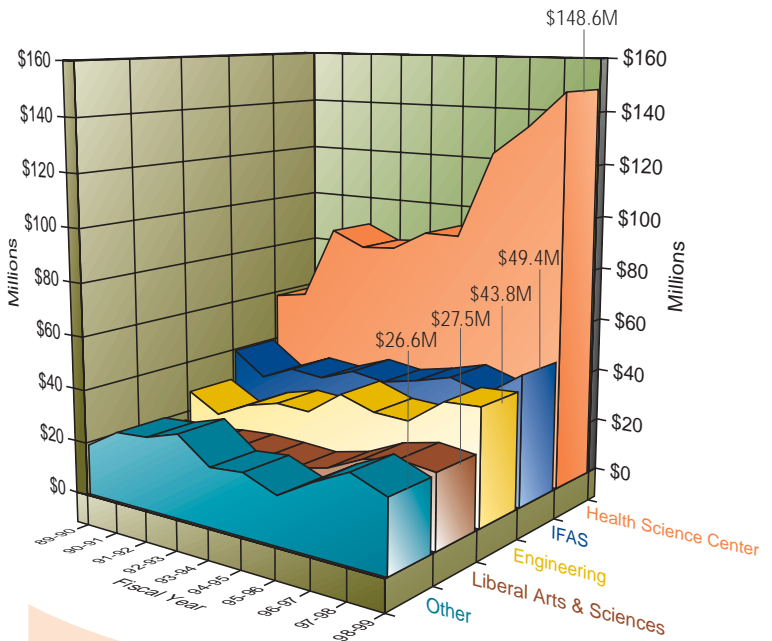


Research Awards by Sponsor Type FY 1990-1999

A dramatic increase in industry support helped push UF to record totals in 1998-99. Corporate funding increased 38 percent to a record \$51.5 million, accounting for much of the total increase in a year when funding from federal, state, local and foundation sources remained near 1997-98 levels.

The National Institutes of Health (NIH) and the National Science Foundation (NSF) accounted for 53 percent of the record \$160.1 million in UF federal awards. Funding from other sources (non-SUS universities, foreign donors and individuals) almost doubled to \$6.2 million.

Much of the increase in the industry and other categories can be attributed to more large awards. In the industry category, awards greater than \$7 million accounted for 31 percent of total corporate awards.

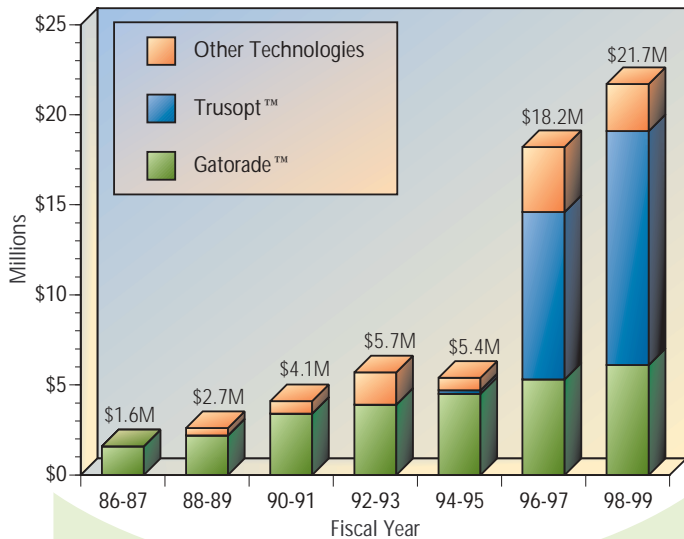


Research Awards by Major Academic Unit FY 1990-1999

Increases in health sciences, agriculture and engineering during FY 1998-99 offset modest decreases in other parts of the university.

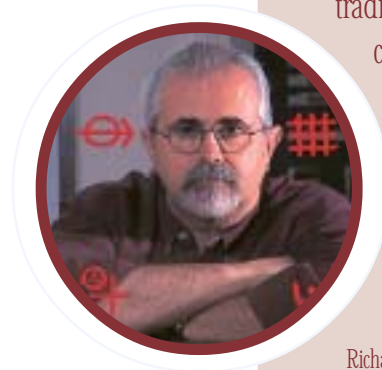
Awards to the health sciences reached a record \$148.6 million in 1998-99, a 10 percent increase over the previous year. Awards to the Institute of Food and Agricultural Sciences (IFAS) rose 23 percent from the previous year to \$49.4 million in 1998-99. Engineering awards remained about level from the previous year at \$43.8 million in 1999. Awards to the College of Liberal Arts and Sciences decreased about 6 percent to \$27.5 million. The \$26.6 million for all other academic units in FY 1998-99 represented a 16 percent decrease from last year.

Total sponsored research funding has increased 86 percent over the past 10 years. UF's health sciences funding is more than two and a half times the level it was in FY 1989-90. The College of Liberal Arts and Sciences increased funding 66.6 percent in the same period, while funding to the College of Engineering rose 59.4 percent during the 10 years. IFAS is up 27.4 percent for the decade, while all other academic units gained a total of 43.9 percent for the decade ending FY 1998-99.



Technology Transfer Income FY 1987-1999

This past year brought another significant increase in royalty and licensing income to a record total of \$21.7 million. The income generated came primarily from Trusopt™, a glaucoma drug licensed to Merck Pharmaceuticals, which accounted for 60 percent. The sports drink Gatorade™, licensed to Quaker Oats, continues to account for a significant 28 percent. The remainder of the revenue is generated from license fees, option payments and royalties from other technologies. The most recent survey by the Association of University Technology Managers (AUTM) ranked UF 7th among all U.S. universities in licensing income.



“My artwork incorporates large-scale, mixed-media installation projects which frequently involve scientific and art historical references that challenge notions of vision, belief and identity systems. My work employs elements of traditional painting and computer-aided fabrication and design, as well as sculptural and lighting components.”

Richard Heipp, M.F.A. Professor of Painting,
College of Fine Arts

Patent and Licensing Activity — FY 1990-1999

The University of Florida, Office of Technology Licensing (OTL) has an active program to assist faculty members in patenting and licensing their discoveries for the mutual benefit of all parties. During the past year, the number of U.S. patents filed by OTL increased more than 50 percent, with many of these technologies either licensed or under negotiation. The university also holds an extensive portfolio of international patents.

Fiscal Year	Invention Disclosures Received	U.S. Patent Applications Filed	U.S. Patents Issued	Licenses Generating Royalties
1998/99	134	106	51	49
1997/98	139	68	51	58
1996/97	103	101	47	61
1995/96	90	61	34	69
1994/95	84	100	24	64
1993/94	75	66	45	20
1992/93	90	41	45	46
1991/92	74	34	50	35
1990/91	105	45	40	18
1989/90	68	29	36	14

Note: Data for patent applications filed and patents issued include new filings, continuations-in-part (CIP), continuations, divisionals, and reissues.

Graduate PROGRAMS Overview

More funding for fellowships and a host of innovative new degree programs are leading to record graduate enrollment at the University of Florida that is expected to continue growing well into the next century.

Overall, the university achieved its 1998-1999 graduate enrollment growth objectives. Fall 1998 enrollment was 7,503 with 3,001 doctoral students and 4,502 master's students. From August 1998 through May 1999, 446 doctoral degrees (Ph.D./Ed.D) were awarded, along with 54 Engineer and Specialist in Education degrees, and 2,013 master's degrees. The university now offers 78 doctoral degree programs and more than 110 master's programs supported by the efforts of some 2,500 graduate faculty. Graduate education at the University of Florida continues to be among the largest and strongest in the nation.

This past year was very active in terms of graduate program innovation. In response to advances in technology, evolution in research patterns, and student and industry demand, the Graduate School approved 53 new programs, concentrations, certificates, and joint degree programs in 1998-1999.

Recent endowment gifts and increased funding from the Florida Legislature afford the university a unique opportunity through its Graduate Fellowship Initiative to recruit outstanding new graduate students with full support packages. Alumni Graduate Fellowships, the premier fellowships for students pursuing terminal degrees, provide four total years of support, including full tuition and fees plus a nationally competitive stipend.

The Named Presidential Fellowship program was conceived as a mechanism to help the university attract top doctoral applicants by funding high-level, long-term stipend support. The second cohort of 10 Named Presidential Fellows matriculated in Fall 1998. The Named Presidential Fellows already are paying dividends for

the university, collaborating with the Graduate School to launch a series of professional development workshops for graduate students campuswide.

The Graduate School has worked closely with central administration, colleges and departments to aggressively market UF graduate fellowship opportunities. Among the promotions developed by the Graduate School and underwritten by the Provost's Office are full-color recruiting posters customized with text for individual colleges and departments; banner advertisements on the Petersons.com and gradschools.com websites; a mailing to prospective master's students statewide based on the GRE Search Service; and a national advertising campaign in the *Chronicle of Higher Education*, peer

"My role as a graduate faculty member in the Department of Special Education is to prepare educational leaders who can promote the successful inclusion of individuals with disabilities in schools. For me, setting high expectations for scholarship, providing high-quality experiences and coaching students to develop the necessary skills are at the core of quality graduate education."

Mary T. Brownell, Ph.D.
Associate Professor of Special Education
College of Education





“I try to create a rich and varied research learning environment within which students can develop their own expertise. Graduate students contribute to an enriched collective knowledge base that reaches well beyond my own training and expertise. I want everyone working in my laboratory to fully avail themselves of the tremendous capacity of the extended UF community.”

Robert J. Ferl, Ph.D.
Professor of Horticultural Sciences and
Assistant Director of The
Biotechnology Program
Institute of Food and
Agricultural Sciences

African-American enrollment increased 16 percent and Hispanic enrollment increased 15 percent. Continuing a trend, females enrolled at a greater rate than males and women now make up 45 percent of the graduate student population.

The university awarded a record 2,513 graduate degrees in 1998-99, up from 2,403 in 1997-98. About 80 percent of these were master's degrees, 18 percent Ph.D.s and 2 percent Doctor of Education, Specialist in Education and Engineer degrees.

institution student newspapers and other media.

Demographically, the incoming class of graduate students at the University of Florida included more minority students and more women than ever before. Asian/Pacific Island enrollment increased 21 percent,

Since many professions now require the master's as the entry-level degree, the University of Florida has been developing more combined bachelor's/master's degree programs. These programs permit up to 12 hours of graduate-level course work to be counted for both degrees. In addition to shortening the time it takes to earn a master's degree by a full semester, these programs provide departments with a previously untapped source of outstanding students. Of the 32 such programs at the university, 23 were approved in the past year and several more are currently under development.

Another program the university is testing is the co-major. The Department of Statistics and the Fisher School of Accounting are offering doctoral students the opportunity to simultaneously complete a Ph.D. in each discipline. This co-major is intended to



“One of the most important responsibilities for any professor is to provide

students with the necessary analytical and expressive skills to enable them to freely question popular beliefs and social conventions. This includes offering students the opportunity to exercise their oral and written skills through an exchange of dialogue with the instructor.”

Mark A. Reid, Ph.D.
Professor of English
College of Liberal Arts and
Sciences

allow students to develop an explicit specialization that will enhance their marketability and scholarship. If successful, this initial co-major program will serve as a model for other disciplinary Ph.D. combinations.

Another innovation in UF graduate education is the option for theses and dissertations to be submitted electronically. The university has established a dedicated electronic theses and dissertations (ETD) computer laboratory through which more than a dozen

students completed ETDs during Fall 1998. Based on that success, the Graduate Council approved a campuswide option for ETD submission beginning in January 1999. Another dozen students submitted ETDs in Spring 1999 and that number is projected to continue to grow. ETDs to date can be viewed online at www.uflib.ufl.edu/etd.html.

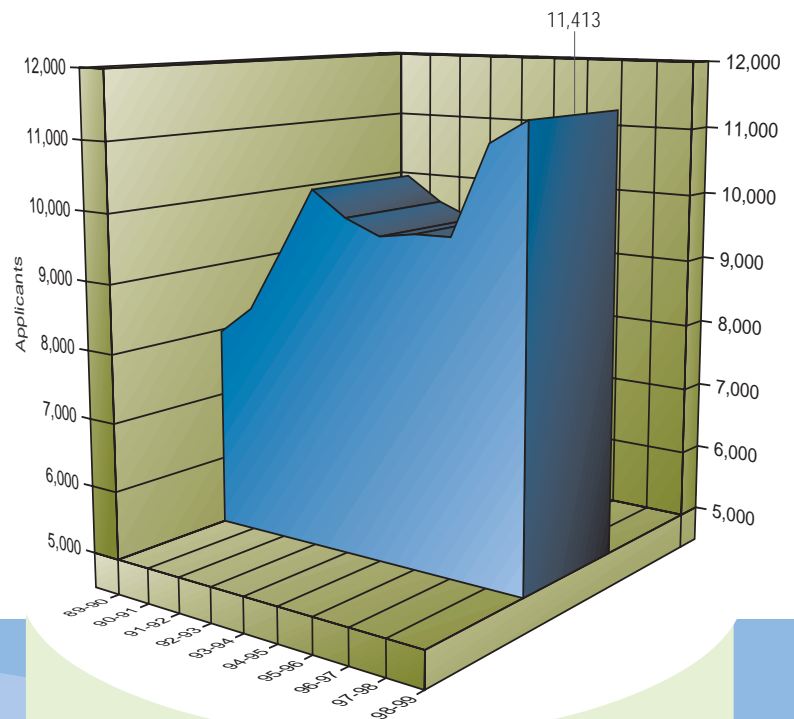
Graduate PROGRAMS

1998-99



“I try to provide my students with a practical tool kit that enables them to analyze economic trends, current events and major developments. I do this by treating the students as though they were colleagues working with me to write a research paper. The students learn by doing. It’s a slow process, but it’s the only way I know that works.”

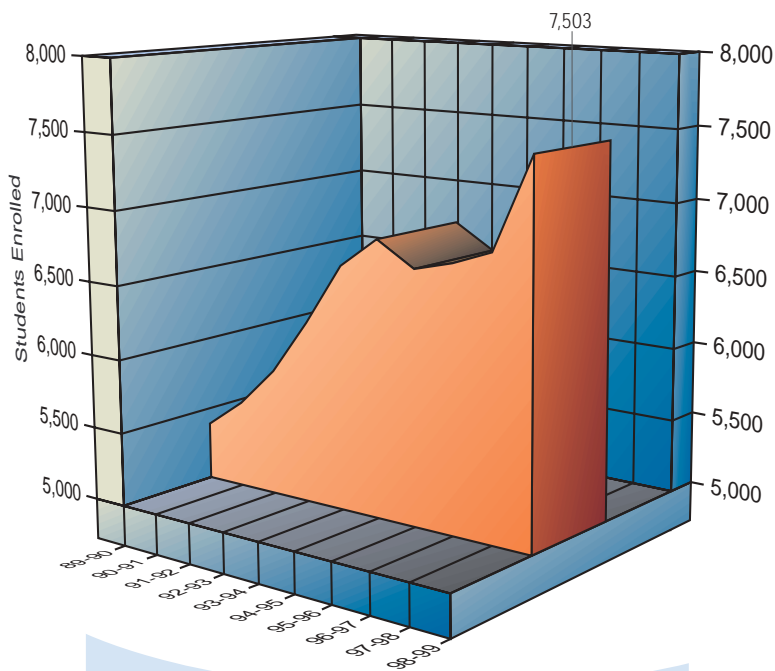
Tracy R. Lewis, Ph.D.
James Walter Eminent Scholar in
Economics
and Associate Director of the Public
Utilities Research Center
Warrington College of Business
Administration



Applicants 1990-1999

During 1998-99, the university received 11,413 graduate applications and offered 5,628 admissions. Compared to 1997-98, applications increased by 3 percent and acceptances grew by 17 percent. The proportion of doctoral to master’s applicants was 35:65 and the ratio of U.S. applicants to international applicants was 56:44.

Technology is enhancing the university’s ability to communicate with applicants earlier and process admissions materials more efficiently. About 19 percent of applicants applied using the online application, available since February 1998, in addition to printing documents from the web and communicating with departments through e-mail.



Graduate Enrollment 1990-1999

Since 1997, the university has been actively pursuing an increase in graduate enrollment by providing more financial support to colleges and departments.

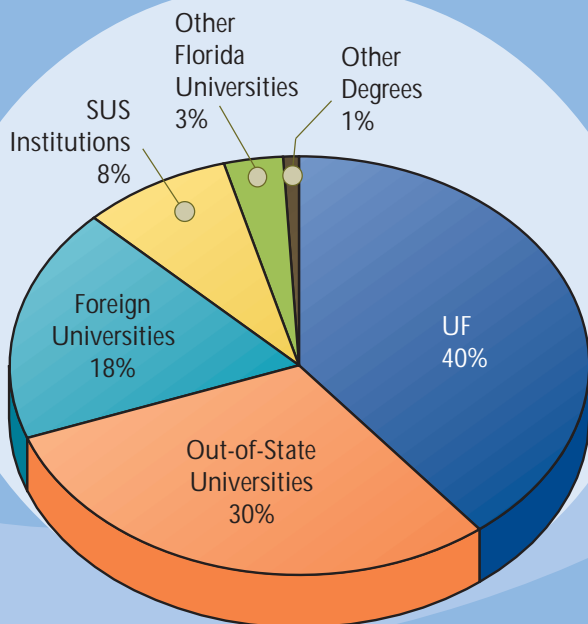
A record 7,503 graduate students were enrolled at UF in Fall 1998, a 9 percent increase over Fall 1997. This growth trend is contrary to the national graduate enrollment trend of decline or stagnation.

In addition to benefitting from increased financial support through the university's Graduate Fellowship Initiative, graduate enrollment growth was spurred by numerous innovative new programs, particularly joint-degree programs.

Graduate Enrollment by College/School, 1998-99

College/School	Graduate Enrollment
Agriculture	687
School of Forest Resources & Conservation	58
Architecture	220
School of Building Construction	51
Business Administration	537
School of Accounting	240
Dentistry	25
Education	1,001
Engineering	1,531
Fine Arts	150
Health & Human Performance	209
Health Professions	176
Journalism & Communications	182
Law	73
Liberal Arts & Sciences	1,517
Medicine	202
Nursing	289
Pharmacy	62
Veterinary Medicine	58
Special Programs*	235

*Programs offered through more than one college.



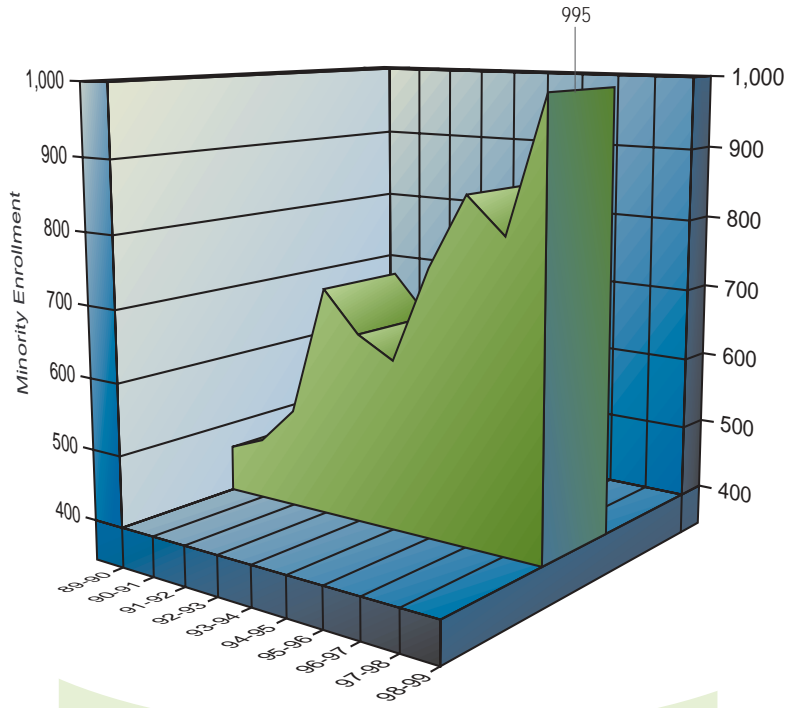
Graduate Students by Source of Previous Degree, 1998-99

A study of where first-time enrolled graduate students received their bachelor's degrees shows that 1,070 newly enrolled graduate students in 1998-99 graduated from the University of Florida. This group includes juniors or seniors at UF who were enrolled in bachelor's/master's combined degree programs. The second largest source of bachelor's degrees was from out-of-state institutions in the U.S., 818. Graduates of foreign universities accounted for 493. The remainder were from other State University System (SUS) institutions, non-SUS institutions in Florida and other degrees.

“Currently, I advise two Ph.D. students and three master’s students, all conducting innovative research ranging from a focus on minority populations and nature centers in Florida to communication needs for wildlife management by the Florida water management districts. Overseeing the development of these bright, young scholars is one of the delights of my work and a valuable multiplier of new knowledge in the field of human dimensions of wildlife management.”

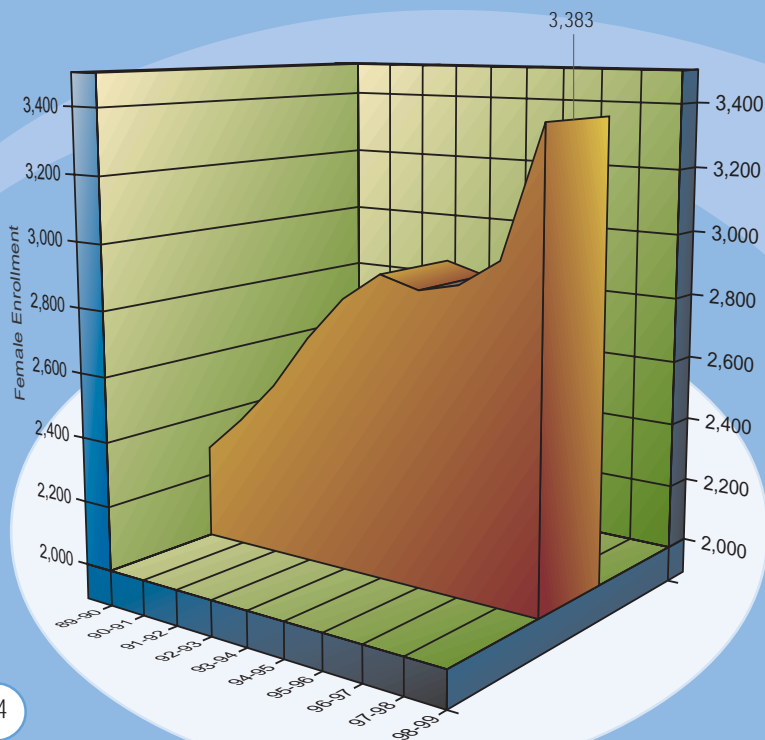


Susan K. Jacobson, Ph.D.
Associate Professor of Wildlife Ecology and Conservation



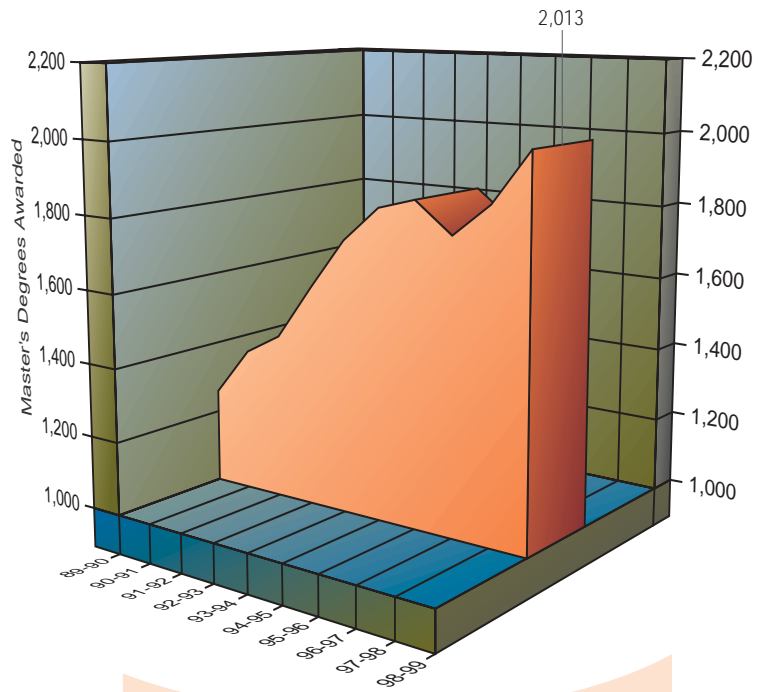
Total Minority Enrollment 1990-1999

Most minority groups showed a strong gain in enrollment between 1997-98 and 1998-99. Asian/Pacific Island enrollment was up by 21 percent, African American enrollment increased by 16 percent, and Hispanic enrollment grew by 15 percent. Overall, minority students accounted for 13.3 percent of the graduate population in 1998-99.



Enrollment of Women 1990-99

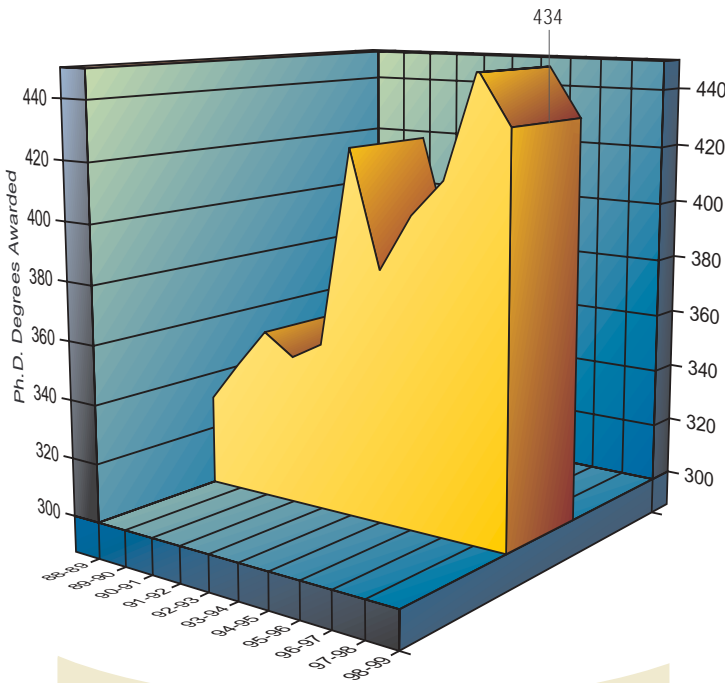
Continuing a trend, female graduate student enrollment grew 13 percent over the previous year, while male enrollment increased only 6 percent. The share of women among the overall graduate student population reached 45 percent from 43 percent in 1996 and 44 percent in 1997. About one-third of female graduate students at UF are enrolled in doctoral programs. Women account for 76 percent of graduate enrollment in the College of Education, 72 percent in the College of Health Professions, 61 percent in the College of Journalism and Communications, and 92 percent in the College of Nursing. Traditionally, women are underrepresented in engineering, but their rate of enrollment is increasing rapidly. The female graduate student population in the College of Engineering increased from 11 percent in 1992 to 18 percent this year. The number of women in this college has more than doubled during the 1990s



Master's Degrees Awarded 1990-1999

Nonthesis master's degrees account for much of the increase in total number of graduate degrees awarded in recent years. Compared to five years ago, nonthesis master's degrees increased by 23 percent while thesis master's degrees declined by 7 percent. During the same period, the total number of master's degrees grew by 12 percent. Forty-eight percent of the master's degrees awarded in 1998-99 were awarded to women. This proportion has remained at the same level since 1995-96.

Of all UF master's degrees granted in 1998-99, 87 percent were awarded to U.S. students. Among the 2,013 UF master's degree recipients, 197 were underrepresented minorities.



Ph.D. Degrees Awarded 1990-99

The university awarded 434 Ph.D. degrees in 1998-99, a slight decrease from the record 452 Ph.D. degrees awarded in 1997-98. During the past 10 years, the number of Ph.D. degrees conferred has increased by more than 30 percent. The largest gain was in engineering. The number of Ph.D. degrees awarded to women in 1998-99 was higher than any previous year and a 40 percent increase over 1996-97. The university awarded 30 doctoral degrees in 1998-99 to underrepresented minority students.

Degrees Awarded

In 1998-99, the University of Florida set a new record in numbers of graduate degrees awarded.

Of 2,513, about 80 percent were master's degrees, 18 percent Ph.D.s, and the remaining 2 percent Doctor of Education, Specialist in Education, and Engineer degrees.

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