

WHITE PAPER
Are There Too Many Psychology Majors?

Prepared for the Staff of the
State University System of Florida Board of Governors
February 5, 2011

Jane S. Halonen, Ph.D.
Professor of Psychology & Dean of the College of Arts & Sciences
University of West Florida
In consultation with Chairs of Psychology Departments in Florida &
the American Psychological Association



Executive Summary of White Paper: Are There Too Many Psychology Majors?

The following report represents a synthesis of opinions from chairs of psychology departments across the state of Florida in response to inquiries from the staff of the Board of Governors of the State University System regarding the current status of the undergraduate major in psychology. The primary issues under consideration include the popularity, utility, and rigor of the psychology major.

On Popularity~

The psychology major is one of the most popular options at the undergraduate level across the country, and Florida is no exception. The major is typically among the top three choices nationally. In some of Florida's universities, the major is the top choice and it continues to grow. Although several universities have experimented with strategies to reduce the access, interest in the major remains robust.

On Utility~

Parents sometimes fret when they hear their children are choosing psychology as a major when they enter college. The fear derives from the assumption that, as graduates, they will not be able to find employment after graduation or that they will be trapped into having to pursue graduate training if they are going to be gainfully employed. We suggest that the fear about employability with a bachelor's degree is not completely justified. Although unemployment is a national problem right now against a background of a deep recession, the psychology major prepares students effectively for entry-level positions in the workforce. The emphasis of workforce preparation includes developing skills sets that are valuable to employers, including critical thinking, problem solving, project management, and interpersonal and team work skills, among others. In addition, a background in psychology produces important personal attributes that foster successful workplace behavior, including persistence in difficult situations, tolerance of ambiguity, and adaptability to change. Psychology majors are sought by future employers who understand the added value from studying both scientific methods and human differences.

On Rigor~

Some critics of psychology believe that the major is easy. The report disputes this conclusion, although it acknowledges that grade inflation, which is a factor in all disciplines during this era in higher education, is present in psychology as well. However, the central core of research methods and statistics as well as the overlap of content between psychology and the biological sciences ensures that a well designed and executed undergraduate major provides a rich and rigorous science experience, regardless of the students' ultimate career destination.

Context

Staff members of the Board of Governors of the State University System of Florida posed the question, “*Are there too many psychology majors?*” to state leaders in the discipline of psychology. This white paper provides some answers to that overt question and also attempts to address some of the underlying issues that commonly drive concerns about psychology as a discipline. We have opted to address the issues using a “Frequently Asked Questions” format to facilitate targeted review of the most relevant questions for different readers.

What role do psychology programs play in undergraduate education?

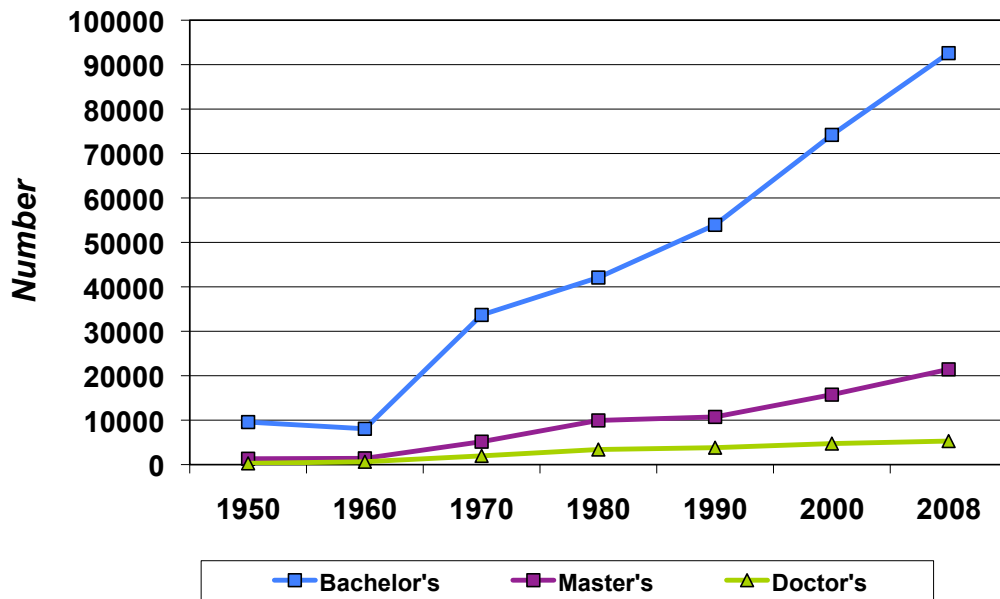
Undergraduate psychology courses fulfill four main functions in higher education:

1. ***General Studies Requirement.*** Many students elect introductory psychology to meet the social science distribution requirement in the SUS. This beginning course helps students understand that psychology has both natural or “hard” science content (oriented toward scientific problem-solving) and social or “soft” science content (focused on applied research aimed at treating and preventing interpersonal and social problems).
2. ***Other Service Options.*** Additional psychology courses are required in human services oriented majors, such as nursing, education and social work. For that reason, psychology is a popular minor, driving course seat numbers up well beyond the demand of the major itself. Most psychology minors tend to take the “soft” science courses offered in the program.
3. ***Workforce Major.*** The vast majority of students who major in psychology will be headed into the workforce after graduation. The major requires students to make selections of courses from both the natural science dimension (e.g., biological psychology, cognitive psychology, sensation and perception) as well as the social science dimension (e.g., social psychology, abnormal psychology, life span psychology). All majors must take research methods and statistics, which many students regard as intellectually challenging.
4. ***Graduate and Professional School Preparation.*** According to the National Center for Education Statistics (NACE), approximately 25% of students with undergraduate psychology degrees pursue graduate work with 4-6% going on to doctoral study and 20-22% working on master’s degrees in psychology; however, the major also prepares students for graduate work in medicine, law, social work, education and business. A recent study in *Academic Medicine* established that students who majored in the social sciences, including psychology, performed equivalently to those who majored in more traditional Pre-Med areas. Approximately 40% of psychology majors eventually achieve some form of graduate training. As such, psychology ranks the highest in post-graduate academic attainment for all undergraduate majors.

How does psychology compare to other undergraduate majors?

NACE reported that 1,524,000 bachelor's degrees were conferred in 2006–07. Business conferred the largest number of degrees (328,000), followed by social sciences and history (164,000), education (106,000), and health sciences (102,000). Included in social sciences category, 90,000 students received bachelor's degrees in psychology in 2006. See **Figure 1** for the growth in numbers of students obtaining psychology degrees across levels of training. The chart demonstrates that growth has been especially dramatic at the bachelor's level.

Figure 1
Number of Degrees Awarded in Psychology:
1950-2008



Source:
US Department of Education, National Center for Education Statistics.
Integrated Postsecondary Data System (IPEDS), "Completion" Survey.
Compiled by the APA Center for Workforce Studies. April, 2010.

Why is psychology such a popular major?

According to the American Psychological Association, psychology is usually one of the top three majors on American campuses. Students have several motivations for majoring or taking courses in psychology. Although prospective majors may not be fully aware of their motivations, many are initially drawn to the content out of a desire to understand themselves better; they often state their primary motivation is “to help people.” Although traditional introductory course design quickly disabuses students of the belief that psychology is solely about understanding and treating human abnormality, the breadth of introductory course content remains intrinsically interesting to most students.

An operational benefit for the department that grows out of this intense interest is that the high demand for popular non-majors courses provides significant FTE generation, earning the psychology program the reputation of being a curricular “cash cow.” Generating undergraduate FTE produces a great deal of enrollment management activity in the SUS. During lean fiscal conditions or declining state support, failing to optimize the numbers of students served can cost departments faculty lines that may not be replaced due to retirement or attrition. To some degree, psychology departments then feel forced to offer popular courses to provide some financial security. However, this balancing act also means that resources must be devoted to popular and/or service courses in competition with the more specialized major course offerings.

Does the high number of majors in Florida schools typify the national pattern?

Yes. In the SUS, psychology routinely produces among the highest number of graduates per program in the state. Many SUS departments reports psychology is the premier major either in their college or on the campus. Among science majors, only biology rivals the number of majors in psychology.

Is psychology really a science?

Yes. Psychology is often defined as the *scientific* study of mind and behavior. As a consequence, students must learn and demonstrate skill sets that stress critical thinking, scientific problem solving, technical writing and speaking, and research ethics. Undergraduate programs may vary in their emphasis on the scientific components; however, the core requirements of any psychology program will include coursework in methods and statistics. Nearly every course in psychology deals with the scientific method. Undergraduates must spend a significant portion of their coursework examining research methods and statistics. Many content courses stress the overlap with the biological sciences (e.g., cognition, sensation and perception).

Psychology faculty responsibilities parallel those found in other sciences. For example, both biologists and psychologists target humans, mice, and other organisms as the focus of their study. Psychologists publish in and edit top-rated scientific journals and volunteer their time as judges in science fairs.

In his presidential address for the Association for Psychological Science (APS), John Cacioppo identified psychology as a “hub science,” along with mathematics, physics, chemistry, earth science, medicine, and social science.

Cacioppo also reported that the *Scientific American* never gets protests from physical or biological scientists when they publish social science articles. He explained, "They are the first to point out that the natural universe, for all its complexity, is easier to understand than the human being. If social science seems mushy, it is largely because the subject matter is so difficult, not because humans are somehow unworthy of scientific inquiry."

Is psychology more oriented to liberal arts or professional training?

Although it has elements of both, psychology is typically classified as a liberal arts major. Although many hold a negative stereotype that liberal arts majors fail to prepare students for the workforce, one bright spot in the otherwise depressing 2011 critique of higher education called *Academically Adrift: Limited Learning on College Campuses* was the recognition of the "value added" of the liberal arts degree. According to the College of Letters and Sciences at University of California at Berkeley, the true value of a liberal arts degree is the preparation it provides for access to a broad range of careers rather than fulfilling narrower training needs for a specific career goal. What counts for most employers according to NACE is the right "skill set," regardless of the origin of the skills, rather than a specific major. NACE claims that the hallmarks of liberal arts education involve strong communication skills, the ability to grapple with and solve complicated problems, teamwork skills, flexibility, tolerance of ambiguity, and adaptability to rapid change. These qualities may be especially important in view of the technologically-driven changes that predict changing careers many times over the lifespan in the future.

What's the relationship between psychology and the other STEM disciplines?

The American Psychological Association Board of Scientific Affairs recently mounted a conference to address psychology's legitimacy as a STEM discipline. Technically, the National Science Foundation has classified psychology as a STEM discipline since psychology relies on scientific practices. Both the NSF and National Institute of Health (NIH) welcome psychology to compete for prestigious funding opportunities and often encourages psychologists to participate in multi-disciplinary research collaborations to strengthen grant applications. In addition, some subspecialties of psychology present as "hard" science due to the overlap with biological foundations. The President's Council of Advisors on Science and Technology recently confused the issue by excluding social and behavioral sciences from STEM classification in relation to K-12 issues; however, at the same time the PCAST endorsed STEM status for undergraduate and graduate education.

Programs in the state of Florida differ in their emphasis of psychology as a STEM discipline. Some programs play the "STEM card" to be competitive in grant pursuits. Some programs insist on being at the table when STEM initiatives are under consideration because they recognize these conversations will drive resource allocation. Other programs may be more focused on the preparation of human services personnel, downplaying STEM considerations.

What's the difference between a B.A. and B.S. in psychology?

Where both options exist on campus, it usually represents a “leaning” in the design and delivery of the major that affects course selection at the advanced level. The B.A. typically has a humanities or social science focus. In contrast, the B.S. has a natural science emphasis. Although critics sometime review the B.A. as less rigorous than the B.S., that conclusion is not necessarily valid. For example at Florida Atlantic University, the B.A. requires additional math and biological science cognates.

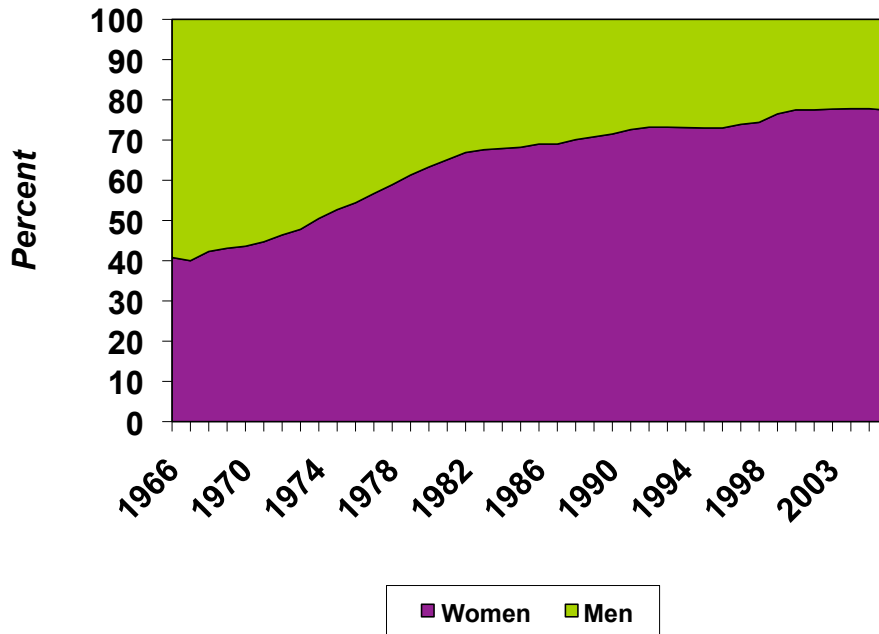
What misconceptions do prospective majors have about the discipline?

- **They can go into therapy practice after bachelors training.**
Working as a clinician requires graduate training and licensure.
- **Psychology is more art than science.**
Although some aspects of psychology have artistic elements, most educators agree that the orientation of psychology is science.
- **Psychology is merely applied common sense.**
Research in psychology is rampant with demonstrations of how common sense can produce inaccurate conclusions. One whole sector of psychology (cognitive) deals with the distortions and accuracies that attend human decision-making and perception.
- **You can't get a psychology-related job with a bachelor's degree.**
A graduate can't get a job with the title of *psychologist*, but can get a workforce position that will take advantage of the skills learned while being an undergraduate major *in* psychology. An undergraduate degree, whether it is in psychology or another discipline, remains a requirement for most entry level jobs. Employers especially appreciate the skills sets developed in the psychology major.
- **Psychology is easy.**
Most serious students in psychology affirm that the discipline is rigorous and challenging when the major is designed and executed well by the program.

Do significantly more women major in psychology than men?

Yes. According to the American Psychological Association, the current ratio of women to men is approximately 3:1. **[See Figure 2]**. Historians of psychology point out how dramatically different this trend is compared to the early days of psychology when women were denied access to the field. Across undergraduate majors in 2008, women represented a majority of first-time, full time freshmen at 57%. The percentage of women electing a psychology major out of all major options in college was 7.2% compared to 2.5% of men. The proportion of women in psychology out of all undergraduate majors is comparable to other high-demand areas for women (cf. Nursing 7.5%; Elementary education 6.1%; and General Biology 5.9%).

Figure 2
Psychology Bachelor's Degrees by Gender:
1966-2006



Source: U.S Department of Education, National Center for Education Statistics, Higher Education General Information Survey (HEGIS), “Degrees and Other Formal Awards Conferred” surveys, and Integrated Postsecondary Education Data System (IPEDS) “Completion” surveys.
 Compiled by the APA Center for Workforce Studies, September 2009

What is the job outlook for psychologists?

Prospects for employment differ according to level and type of training. [See **Appendix 1** for examples of job titles across levels of training]. Unlike majors such as chemistry or engineering, students will not be designated as “psychologists” upon graduation with an undergraduate degree. The term “psychologist” is generally restricted to those who have achieved graduate training and/or passed licensure requirements. *The Occupational Outlook Handbook* predicts an average growth rate for doctoral degrees over the next decade of 12%. In the next few years, the strongest growth in opportunity at the doctoral level should be seen in counseling, school, industrial-organizational, and health psychology.

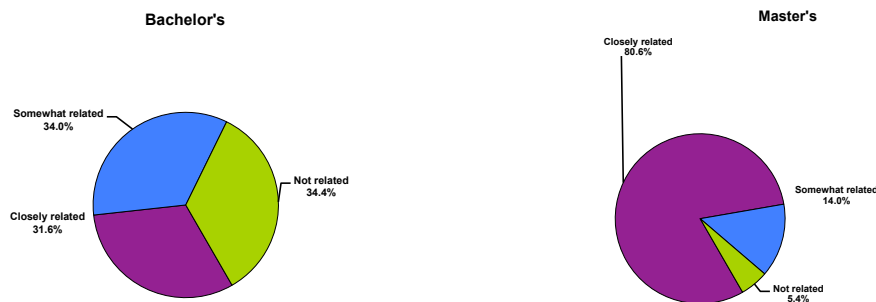
Are there any especially promising subfields for job prospects at the doctoral level?

Renowned physicist Dr. Carl Wieman, Associate Director for Science, White House Office of Technology, spoke recently at the January 2011 Course Curriculum and Laboratory Improvement (CCLI) Transforming Undergraduate Education in STEM conference. He discussed how new findings in cognitive science, an emerging subfield of psychology, promise to transform undergraduate education across disciplines. The emphasis of this new field is examining how novice learners evolve to expert status, regardless of the discipline.

What are the prospects for master's-level training?

Competition for psychology-related jobs intensifies for individuals trained at the master's level. Master's-level individuals can work in clinical or industrial-organizational settings, sometimes under the direction and supervision of a licensed (doctoral) psychologist. Master's level employment provides greater opportunity for graduates to work directly in psychology-related jobs. See Figure 3 for a comparison of master's and bachelor's employment as directly linked to psychology.

Figure 3
Relationship of Job to Highest Degree Reported by Bachelor and Master Recipients in Psychology



Source:

National Science Foundation/Division of Science Resources Statistics, *National Survey of Recent College Graduates*: (2003).

Compiled by the APA Center for Workforce Studies, April 2009.

Note. The use of NSF data does not imply NSF endorsement of the research, research methods, or conclusions contained in this report.

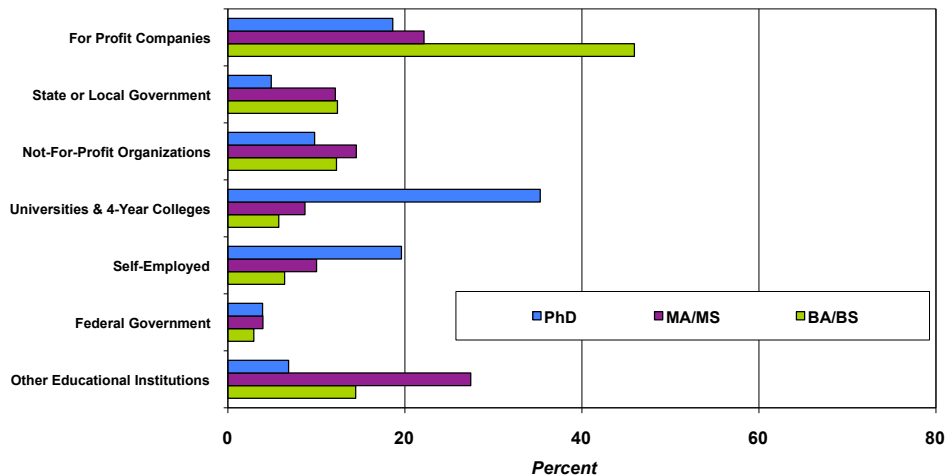
Can graduates get a job with a bachelor's degree?

Yes, but not a *psychologist's* job. Fewer than 25% work directly in a psychology field following graduation. They qualify for *entry level* positions in a variety of fields, including marketing, case management, sales, advertising, labor relations, rehabilitation services, psychiatric technician, real estate, social work, child care specialists, writers, probation/parole, and career counseling. Additional training in research methods and technology increases employability. Undergraduates who do not pursue graduate school usually move to career options within one year that are not directly related to psychology professions. **See Appendix 2** for the “Top Ten Occupations” that employ those earning a bachelor’s degree.

Where are baccalaureate level majors employed?

At a large public comprehensive university (Indiana University-Purdue University at Indianapolis), a recent job fair hosted diverse employers who specifically listed *psychology* among the majors from which they wanted to conduct interviews. These organizations included companies related to insurance, home building, financial management, cash registers, cell phones, and web sites. Representatives also sought majors for Walmart, Target, Pizza Hut and Sears. Other interviewers came from a county human service agency, a children’s home, the juvenile division of a superior court, social service agencies, and the Federal Bureau of Investigation. **See Figure 4** for a similar breakdown of bachelor’s employment by type of employer.

Figure 4
Work Settings for Psychology Degrees: 2006



Source: National Science Foundation/Division of Science Resources Statistics, Various Surveys (2006). Compiled by the APA Center for Workforce Studies, January 2010.

What are the most important skills that the major provides?

Two years ago, the American Psychological Association sponsored a national gathering of psychology educators at the Puget Sound Conference to review the status of the undergraduate major. Emerging from the conference was the importance of promoting *psychological literacy*. This concept entails developing expertise in the broad knowledge base of psychology. However, it also includes the promotion of critical thinking, careful observation, insightful reflection, and “amiable skepticism.” The conference participants discussed the importance of applying psychological knowledge and skills to address the array of behavior-based problems that dominate our attention in the 21st century. Since psychology courses capture the attention of so many students, the educators committed to improving psychological literacy as a shared goal to improve society as a whole.

What other psychology skills link to success in the workplace?

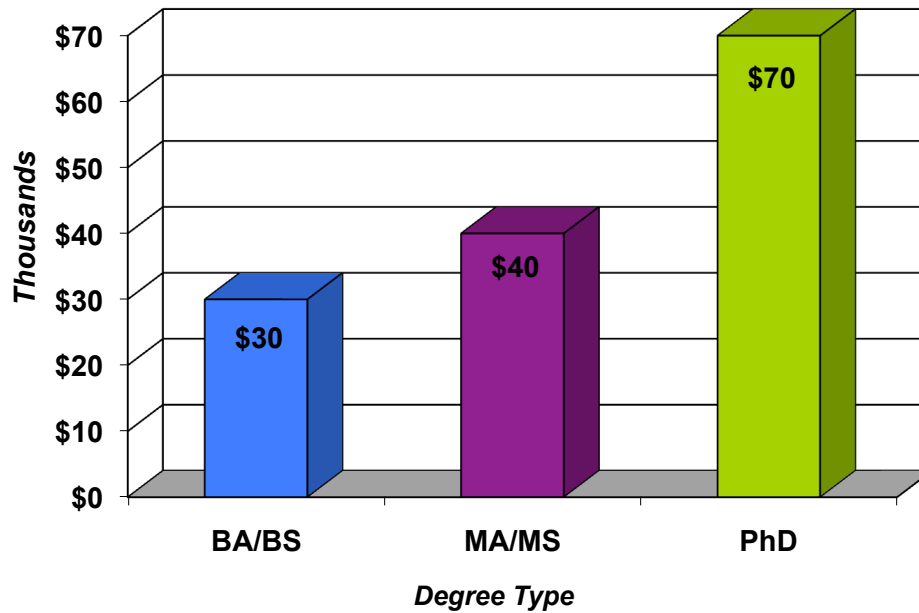
Other outcomes and characteristics fostered by psychology that appear to be particularly useful in the job market are the following:

- knowing how to predict and understand individual and group behavior;
- understanding the use and interpretation of data;
- evaluating the legitimacy of claims about behavior;
- knowing how learning and memory function;
- having insight into problematic behaviors;
- demonstrating the capacity to adapt to change;
- understanding and operating effectively in informal and formal channels of an organization;
- managing difficult situations and high stress environments;
- starting and executing projects with limited information or experience; and
- exhibiting persistence in challenging circumstances

How do median salaries compare across levels of psychology training?

According to the APA Center for Workforce Studies (2009), the median annual salary for degree level in 2006 demonstrated predictable increases with training. With a bachelor’s degree, the median was \$30,000. The master’s degree was \$40,000. Ph.D annual median was \$70,000. **See Figure 5.**

Figure 5
Median Annual Full-time Salaries in Psychology
By Degree Type: 2006



Source:

Data derived from National Science Foundation/Division of Science Resources Statistics, 2006 National Survey of Recent College Graduates, and 2006 Survey of Doctorate Recipients. Compiled by the APA Center for Workforce Studies, April 2009.

What kind of income is associated with specific doctoral subfields?

(2006-7 Income Levels Reported)

Clinical	\$63,000	Experimental	\$56,000
Career Spec	\$46,000	Forensic	\$59,000
Cognitive	\$55,000	Health	\$63,000
Counseling	\$47,000	Industrial/Org.	\$98,000
Developmental	\$57,000	Neuropsychologist	\$80,000
Engineering Psych	\$80,000	School	\$59,000
Sports	\$54,000	Abuse Specialist	\$59,000

What income levels are anticipated with positions related to master's-level training?

See Appendix 4 for some examples of incomes and growth rate at this level.

How do starting salaries in psychology compare with other bachelor's degrees?

Research from the APA Center for Workforce Studies (April, 2010) illustrates that psychology produces the lowest average starting salary among the science disciplines, slightly lower salaries than business disciplines and nursing, and salaries comparable to humanities.

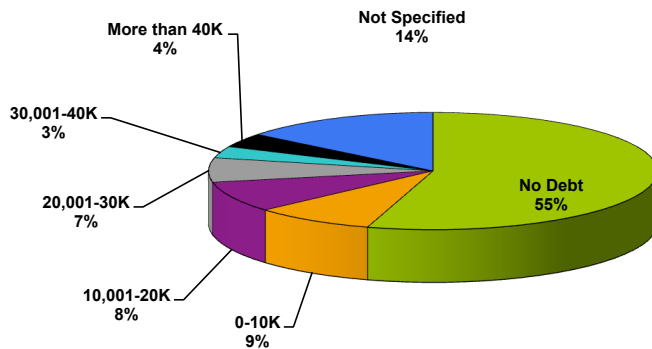
	Psychology		\$36,400
Mechanical Engineering	\$51,000	Finance	\$42,200
Chemical Engineering	\$50,000	Accounting	\$41,300
Civil Engineering	\$47,600	Marketing	\$38,300
Computer Science	\$47,500	Agriculture	\$37,300
Mathematics	\$43,600	Advertising	\$35,500
Electrical Engineering	\$51,600	Nursing	\$42,300

Income details are available according to specific job titles in Appendix 5.

What kind of debt do undergraduate students accumulate by the time they graduate?

According to the NSF, the majority (55%) of students complete their undergraduate education with no debt [See Figure 6]. High levels of debt, defined as exceeding \$40,000, account for only 5% of students with bachelor's degrees in psychology.

Figure 6
Level of Undergraduate Debt for Psychology PhD Recipients in HSP Subfields: 2006



Source:
 NSF/NIH/USED/NEH/USDA/NASA; 2006 Survey of Earned Doctorates.
 Compiled by APA Center for Workforce Studies, February 2009.

Why does psychology have a reputation as an “easy” major?

One Florida chair stated, “Psychology is easy for some and incomprehensible to others.” Some courses in the major may seem easy, particularly if individual courses match student abilities. For example, students who show gifts in interpersonal relations may have some natural skills that facilitate top performance in clinically oriented courses. Similarly, students who are gifted in mathematics and logic will find the research courses to be closely aligned with their interests and easier than courses where they have no intrinsic interest. However, the centrality of statistics and the heavy presence of biologically oriented classes as major requirements ground the psychology major in hard science content that most undergraduates find challenging.

What steps do psychology programs take to ensure rigorous standards?

The majority of psychology programs in Florida incorporate into their curricular planning the *National Guidelines for Undergraduate Psychology Learning Goals and Outcomes* that the American Psychological Association (APA) formulated and published in 2002 (**See Appendix 5** for complete listing). These guidelines divide the curriculum in psychology into two general categories: science-based skills and liberal arts-based skills. The Guidelines advocate assessment of program effectiveness, consistent with the SUS requirement of regular academic program review. Many reviewers adopt the APA guidelines as a framework for benchmarking performance and offering developmental feedback.

The skills sets predate but compare favorably to the recent American Association of College and University “Liberal Education and American’s Promise” (LEAP) project that explicated the outcomes expected from basic liberal arts (**See Appendix 6** for complete listing). Chairs point to the value of these skills not just for workplace success but to fulfill the responsibilities of well-informed voters. In addition, the skills correspond to the list of abilities that employers reliably say they value in their employees (e.g., critical thinking, communication, problem-solving).

Beyond learning outcomes, what other strategies are currently being used (or could be used) in Florida psychology programs to reinforce achievement of quality as well as strengthen the rigor in the undergraduate major?

- Require additional lab-based courses or add lab components to existing courses to reinforce the science base;
- Require two statistics classes rather than the more standard single class requirement;
- Assess student learning outcome results regularly and use the data for program refinement;
- Designate Experimental Psychology, where students learn detailed research methods, as a prerequisite for advanced level courses;
- Incorporate an assessment of rigor or estimate of quality formally in the feedback from academic program reviews;
- Provide discipline-related internship opportunities that promote the opportunity to apply learning;

- Eliminate the B.A. option (however, UCF has not found this strategy to be effective in reducing high numbers of majors)
- Require exit exams, such as the Major Field Test, that provide comparison to national benchmarks;
- Showcase student research where the students must “stand and deliver;”
- Increase minimum GPA requirement either to enter or be retained in the major; requirements across the state ranged from none to 2.0 to 2.8.
- Strongly encourage students who do not have a 2.5 in psychology after 15 credits to seek another major;
- Stimulate an active and engaging presence of Psi Chi, the national scholastic honorary society;
- Monitor student ratings of instructional quality and compare to benchmarks on the campus or across comparable departments at peer institutions;
- Compare graduate school acceptance rates with those of comparable departments at peer institutions;
- Control access to higher level classes based on demonstrated proficiency at lower levels;
- Compare the GPA in psychology with the overall GPA for comparability;
- Conduct exit self-report assessments, including Senior Exit Survey of Experience (SESE), to verify student satisfaction and self-assessments of growth; and
- Promote opportunities for undergraduate research with centers of excellence (e.g., FAU’s relationship with the Max Planck Institute).

Are grade distributions higher in psychology than other disciplines?

Inflated grade distributions appear to be standard across disciplines in American higher education; Florida psychology chairs were mixed in their reports about whether psychology produced inflated grade distributions. Where higher distributions exist, one chair noted that lax grading standards might not to blame; doing well in the discipline may simply reflect the inherent motivating factors of the discipline rather than lax grading standards. However, a few Florida chairs expressed concern that psychology’s grade distributions may be noticeably more charitable than the national or the campus average.

One other consideration is the variable entrance requirements that exist across the system’s universities. Those programs that limit their access by requiring higher entrance standards might logically be expected to realize higher grade point averages.

What have Florida universities done or what could they do to manage the size of the undergraduate population in the major?

Chairs reported strategies for managing the high demand major by manipulating the grade point average requirements for entrance or retention in the major. Currently some SUS chairs reported moving programs to a *limited access* status. However, waiting lists for available spaces build quickly when the resources are not present to accommodate the need. Where small faculty-to-student ratios exist, a labor-intensive thesis requirement may keep numbers down. For example, New College requires a thesis conducted over a two-term Senior Seminar with individual tutorials for all undergraduate majors.

What impact would restricting access to psychology courses have on university operations?

Restricted access could

- Potentially reduce availability for allied disciplines that require psychology, including those that have been identified as high priority in the state, such as nursing;
- Produce an adverse impact on the departments' abilities to secure faculty lines. In a period of shrinking state resources, it seems counter-intuitive to turn away high demand for courses that build student credit hours; and
- Inadvertently fuel more popular non-major courses to draw students and make up the slack, which paradoxically could stimulate more public criticism about absence of rigor in psychology.

If programs reduced majors through limited access, where would the denied students go for a major?

Since most students originally get into the major to help people, chairs predict that students would transfer to other human service-oriented majors, such as criminal justice, social work and education. Psychology majors can already work in human services with their current degree so that action merely shifts their path to their desired workforce destination. One contributor astutely observed that we would undermine the quality of professional care delivered by therapists, who, without benefit of psychology's orientation, would be less likely to use a scientific approach in choosing treatment strategies. One chair reported the majority of transfers to Philosophy, Economics, and International Relations. Few go to high-need STEM areas. In an analysis of change of major data from spring semester 2010 to 2011 at the University of West Florida, students who left psychology primarily chose non-STEM areas (74%) versus STEM choices (26%). Of the 19 students who went into high-need STEM areas, biology, health science, and computer science drew the most transfers. One chair suggested that true interest in other high-need STEM areas as a career choice must be initiated in grade school, not in college. Another chair noted that the drive to study psychology is strong enough that being denied could simply drive the student to enroll outside the state of Florida. Finally, students in high-need areas, such as nursing and education, could have their own graduation timelines delayed due to wait times for required courses.

What creative ideas could work to enhance meeting the vision for more STEM majors in the state of Florida?

- Recognize that counting psychology majors among STEM students would provide a bigger footprint in the student population.
- Create and support cutting edge interdisciplinary majors between psych and more traditional stem areas (e.g., Psychological Engineering (Human Factors), Statistical Psychology, Cyber Psychology, Psychobiology).
- Develop incentives (e.g., scholarships, grants) to encourage students to pursue high need STEM areas or these hybrid areas.

The Wall Street Journal recently (October 11, 2010) reported that psychology majors claimed the least satisfaction with their chosen major. How could this be?

The WSJ reported that one year into their jobs only 26% of employed psychology majors are “satisfied” or “very satisfied” with the major they had chosen in college. This percentage, the lowest reported of all the majors surveyed, seems paradoxical, given psychology’s popularity. We offer five explanations to resolve the paradox:

1. The majority of students who go into the workforce are not typically in psychology-related fields. Although they benefit from the skill sets the major provided, students do not always see the connection even after they are graduated. They may claim “I don’t really use my major” because their work isn’t directly in psychology. They fail to give credit to the skill sets they learned in psychology that helped them land them the job.
2. The design of the survey reported by WSJ appears to be flawed. The researchers concentrated on the group of graduates who took positions that relate indirectly to psychology. This approach constitutes what psychologists call a participant selection error because the conclusions are built upon a biased sample. A better design would have been systematic inclusion of the opinions of students who were also in graduate or professional school; presumably, the satisfaction rating would be much higher with this correction.
3. A third explanation involves the negative mindset of the disheartened major. Sometimes students come into the major expecting they can become full-fledged counselors by graduation. When they are finally convinced that won’t happen at the undergraduate level, they may feel too invested in the major, from the standpoint of both time and money, to leave it. They stay in the major, but are not happy when they fully realize that the major alone won’t get them where they want to go.
4. Academic program reviewers in psychology sometimes find that faculty in psychology programs invest greater attention with students who have embraced going on to graduate school. Such faculty may even reinforce the falsehood that students with bachelor’s degrees “can’t get a job.” In the worst case situations, students who plan to go into the workforce can end up feeling “second tier” during the completion of the major. Reports of dissatisfaction with their experiences are understandable if departments

don't provide equitable attention and don't take career counseling for the workforce seriously. Workforce-prepared students represent the majority of students majoring in psychology, and departments should take their advising and career needs seriously.

5. Not all students take advantage of the rich learning opportunities available to them during the major that might have led to greater satisfaction after graduation.

How could satisfaction be improved?

1. Departments need to be more explicit about tying learning outcomes to coursework. Students, who are conversant in the outcomes of their major, interview more effectively for positions and are more likely to attribute their success on the job to the major rather than reporting a disconnect between their major in psychology and their career choice.
2. Many departments sponsor a "careers in psychology" course early in the major to help students recognize the realities of the low starting salaries at the baccalaureate level and of job options that are not as closely tied to psychology. The reality "crash course" could help the disheartened major change before the investment is too great.
3. Departments can facilitate better career advisement, including maintaining an up-to-date roster or bulletin board displaying where their graduates are getting jobs. This, and similar, practices would foster more realistic occupational aspirations.
4. Develop a purposefully tiered curriculum (cf. University of Miami) to assist students to understand the level of demand that will be required in relation to their professional goals; however, students in all tiers should be treated with equal respect and seriousness.

What are some examples of contributions made by individuals with psychology background?

People with a background in psychology have made enormous contributions to our society and culture. A small sample includes the following:

- Alan Leshner, CEO of the American Association for the Advancement of Science
- Nobel Prize winners Herb Simon, Daniel Kahneman, Roger Sperry, Ivan Pavlov, and George von Bekesey who won the Nobel Prize for their distinguished work in various fields including cognitive, physiological, and neuroscience
- Martin Seligman, who helped to establish the field of positive psychology
- Elizabeth Loftus for her groundbreaking work in recovered memories
- Kenneth and Mamie Phipps Clark, who contributed substantial research to the study of racial inferiority, which ultimately shaped public educational policy
- Actresses Katherine Hepburn (Bryn Mawr) and Natalie Portman (Harvard)
- Facebook creator Mark Zuckerberg (Harvard), *Time Magazine's* Person of the Year

- Entrepreneurs Guy Kawasaki (Apple) and Jim McCann (1-800-Flowers)
- Entertainer Gloria Estafan (University of Miami)
- Filmmakers Jerry Bruckheimer and Wes Craven
- Political satirist Jon Stewart

What creative ideas could help SUS programs address psychology's negative reputation for quality and rigor?

Psychologist Keith Stanovich claimed that psychology was the “Rodney Dangerfield of the Sciences,” implying that psychology struggles to be fully accepted and respected as a legitimate science. The following could help:

- Improve and collaborate with the production of writers and journalists who can do a better job of interpreting behavior science to the public.
- Adopt a “Distinguished Majors” option to intensify competitiveness of high-end performers for graduate school (e.g., University of Virginia)
- Help the public understand how many of society’s ills have a behavioral component that warrants attention and funding (c.f., psychology used to focus on cancer prevention lifestyle changes rather than cancer cures)
- Develop a media campaign to clarify the nature of psychology similar to the national “Decade of Behavior (2000-2010)” multidisciplinary campaign initiated a few years ago.
- Promote collaborations among the SUS institutions to bring talents and interests together to assist the state in addressing challenging behavioral questions at the state level.

What difference can psychological knowledge and skills make in our lives?

We face an abundance of behavioral challenges in the 21st century and equipping our citizens with the critical thinking skills to address them should not only improve the functionality of the culture, but enhance individual quality of life. Although we have a great deal of technical know-how, we need better applications of psychological principles to inform and motivate people to take appropriate, healthy action. Some examples include the following:

- Knowing developmental principles can assist people to raise healthier children and live in more functional families.
- Understanding the roots of prejudice and the human tendency to protect our own tribe can make us more effective about navigating human differences.
- Research in health psychology may help us understand the dynamics of the major causes of death, including automobile accidents, heart disease, homicide, obesity, and smoking.
- Exploration of behavioral and psychological interventions to change children’s exercise and nutrition habits to reduce childhood obesity and diabetes risk.
- Knowing organizational theory can help businesses improve efficiencies and effectiveness.

One psychologist educator, Bruce Henderson put the advantages of studying psychology quite simply: “You study psychology so you won’t be a jerk.” Obviously,

to limit the science that has such potential for personal transformation could have far-reaching, negative consequences.

How can psychology educators help legislators better understand what we do?

- Break the stereotype that psychology is solely a training ground for “shrinks.”
- Arrange visits to the Psych department at FSU in Tallahassee during an official BOG meeting;
- Clarify the ways in which knowledge of psychology can contribute to a healthy democracy;
- Gather testimony of the value of our students’ contributions to community-based internships;
- Identify and support high interest initiatives in which psychologists could contribute through research. For example, the use of Ritalin and Adderall among college students to enhance study skills or the suspected link between autism and MMR vaccinations;
- Provide each legislator with a copy of a physiological psychology textbook;
- Present evidence of the impact of our community outreach. For example, FGCU conducts an annual conference on autism, which is strongly supported by the community. <http://www.fgcu.edu/events/promisingpathways/>
- Explore the ways in which psychology’s “brain based learning” framework can enhance teacher effectiveness by increasing learning retention and information transfer.
- Stage a high profile state conference on student research achievements with legislators offering awards.
- Link psychology’s efforts in working with the military through treatment of PTSD, addressing family stress during soldiers’ absence, improving surveillance techniques, and many other applied research topics.
- Have a “rally in Tally” in which a Psychology Day could highlight what our undergraduates do and why their contributions will be valuable.
- Write a grant to the David Myers Foundation to sponsor an SUS-wide “Science of Psychology” Conference
- Align the SUS with STEM initiatives as just one means of helping to differentiate universities from the state colleges which would not be able to offer research opportunities to undergraduates
- Focus our efforts on getting the public/legislators/BOG to understand that our primary mission in training students to think critically in psychology is to help them spot and defend against charlatans and pseudoscience.

What’s the best way psychology can collaborate with the Florida legislature to serve the citizenry?

Since the psychology major represents only a portion of the total content of the liberal arts curriculum, challenging the value of psychology also challenges the legitimacy of liberal arts education as a whole. However, the concerns expressed by some legislators specific to psychology suggest that psychology educators need to do a better job of communicating our accomplishments and attending to criticisms

in which we are vulnerable. This conclusion leads to some possible action items for psychology educators in Florida:

- Improve communication across Florida's departments of psychology to see where shared interests can produce some new efficiencies and opportunities that reflect top-notch education.
- Develop a joint vision with legislators about Florida being a state not just friendly to and supportive of psychology, but proud of the high caliber, rigorous psychology education being delivered across the state.

Appendix 1

Job Titles Across Levels of Training

(Examples from University of Central Florida)

Account representative	Circulation manager (Tampa Tribune)
Addictions counselor	Civil Services Claims Adjudicator
Administrative assistant	Claims Manager
Mortgage broker	Clergy
Administrative Behavioral analyst	Clerk
Admissions Specialist	Clinical Director
Assistant Director of Residential Life	Clinical Psychologist
Associate Professor (University of Wisconsin-Oshkosh)	Code Enforcement Officer
Assistant Professor (Clemson University)	College Counselor
Athletic Director	Computer Programmer
Attorney	Computer Specialist
Audiologist	Computer Technician
Bank Officer	Computer Network Engineer
Behavior Specialist	Computer Operator
Behavior Technician	Consultant
Behavioral Neuroscience Professor	Controller
Behavioral Scientist	Coordinator Student Affairs
Benefits Administrator	Correctional Officer
Bookkeeper	Cost Accountant
Bookseller	Correction Probation Officer
Broker/Executive Vice President	Corporate Owner (A. W. Peterson Gun Shop)
Bus Driver	CPA
Business Owner	Crime Analyst
Cake Decorator	Credit Manager
Case Manager	Critical Care Nurse
Case Worker	Custodian
CEO (Sanborn Properties)	Customer Service Manager
CFO (Orlando utilities commission)	Deputy Sheriff
Certified Adult Nurse Practitioner	Deputy Chief of Police (Florida State University)
Certified Family Mediator/Therapist	Director of Human Resources (Dual Incorporated)
Certified Mental Heal Consultant	Director of Marketing (Health South Medical and Rehabilitation)
Certified Occupational Therapy Asst Chair, Department of Management (Florida Gulf Coast U.)	Director of Sales
Child Mental Health Coordinator	Director Congressional Affairs
Child Protective Specialist	District Sales Manager (Solvay America, LLC)
Chief Systems Engineer (Federal Aviation Administration)	Editor (Direct Response Publications)
Chiropractor	

Education Coordinator (Virginia Medical Center)
Educations Specialist (Kennedy Space Center)
Elementary Guidance Counselor (Brevard Public Schools)
Employment and Training Representative (Department of Labor)
Employee Relations Consultant (AAA)
Engineer (Uniroyal)
Environmental Services Manager (City of Orlando)
Exceptional Student Education Teacher (Orange County Public Schools)
Executive Director (Brevard County Legal Assn.)
Executive Assistant (Boy Scouts of America)
Fighter Pilot
Finance Manager
Flight Attendant
Forensic Case manager
Forensic Psychologist
Forensic Technician
Free-lance writer/Film and Video Producer
General Manager
General Surgeon
Gerontologist
Homemaker
Human Factors Engineer
Human Resources Analyst
Hypnotherapist
Insurance Agent
Installer of communication equipment
Investigator III (State of Florida)
Legal Assistant
Librarian
Nurse
Nurse Practitioner
Occupational Therapist

Owner (e.g., Fiore Music, Family Solutions, Blupers Restaurant, Brad's Creative Images, inc)
Partner (Burr & Forman LLP)
Pastor
Personnel Management Specialist
Pharmaceutical Representative
President (e.g., Woodlawn Memorium, Millennium Transportation, Inc., Hardline, Inc, Living Rationally, Inc., Alliance International Management & Marketing, Aviation Research, Training, & Services, Inc, Aon Corporation, Center for Drug Free Living, Pegasus Financing, Inc)
Professor (e.g., Stetson University, University of Texas, Georgia College)
Project Scientist (University of California, San Diego)
Psychiatric Nurse
Psychiatric Screener
Psychiatric Hospital Administrator
Psychiatric Caseworker
Psychologist
Psychotherapist
Quality Assurance Coordinator
Real Estate Agent
Research Assistant (e.g., Harvard Graduate School of Education, Essex Corporation)
School Psychologist
Systems Analyst
Teacher
Vice President (e.g., Harcourt School Publishers, North American Office Solutions, Inc., M&I Wealth Management, Autopower, Charles Schwab Corp)
Web Designer
Web Developer
Wedding Consulting
Wellness Coordinator
Worker's Compensation Adjuster

Appendix 2

Top 10 occupations that employ persons with only a bachelor's degree in psychology

- 1.) Top- and mid-level managers, executives, administrators
- 2.) Sales occupations, including retail
- 3.) Social workers
- 4.) Other management-related occupations
- 5.) Personnel, training, labor-relations specialists
- 6.) Other administrative (record clerks, telephone operators)
- 7.) Insurance, securities, real estate, business services
- 8.) Other marketing and sales occupations
- 9.) Registered nurses, pharmacists, therapists, physician assistants
- 10.) Accountants, auditors, other financial specialists

Source: The College Majors Handbook



Psychology Professor Steve Kass conducting driver safety research in the Human Factors Lab at the UWF Center of Applied Psychology.



Department of Psychology
University of West Florida

Appendix 3

Career Options/Income for Psychology MASTERS'

Mental Health Counselor

Median wage in 2006 was \$34,380
Projected job outlook: expected to rise by 30%

Marriage & Family Therapists

Median wage in 2006 was \$43,210
Projected job outlook: expected to rise by 30%

Rehabilitation Counselors

Median wage in 2006 was \$29,200
Projected job outlook: expected to rise by 23%

Educational, Vocational, and School Counselors

Median wage in 2006 was \$47,530
Projected job outlook: expected to rise by 13%

Substance Abuse & Behavioral Disorder Counselors

Median wage in 2006 was \$34,040
Projected job outlook: expected to rise by 34%

Human Resource Managers

e.g., director of human resources, employee benefits manager, training coordinator & employee relations manager.

Median wage in 2006 was \$88,510
Projected job outlook: faster growth but more competitive

Advertising & Promotions Managers

e.g. advertising director, marketing director, advertising sales manager, account executive

Median wage in 2006 was \$73,060
Projected job outlook: about as fast as the national average

Training and Development Specialists

e.g. Training specialist, training manager, corporate trainer, job training specialist, management development specialist.

Median wage in 2006 was \$47,830
Projected job outlook: expected to rise by 17 %



Department of Psychology
University of West Florida

Appendix 4

Career Options/Income for Psychology BACHELORS'

High School Psychology Teachers

Median wage in 2006 was \$31,753
Projected job outlook: field should grow as fast as national average

Social & Human Services Assistants

e.g. caseworkers, case manager, community support worker, mental health aide, community outreach worker, independent living specialist, activities of daily living specialist, family development specialist

Projected job outlook: rapidly growth through 2014

Psychiatric Aides

e.g., residential counselor, mental health worker, mental health technician, psychiatric nursing aide

Median hourly wage in 2006 was \$11.49
Projected job outlook: slow growth is expected

Medical and Health Services Managers

e.g., office manager, health and social service manager, program manager, medical records manager, mental health program manager, nutrition services manager, and health information manager

Median wage in 2006 was \$73,340
Projected job outlook: faster growth than average through 2014.

Health Educators

e.g., instructional coordinator, health promotion specialist, family educator, or wellness specialist

Median wage in 2006 was \$41,330
Projected job outlook: much faster growth than national average

Preschool Teachers/Teacher Assistants

Median wage in 2006 was \$20,740
Projected job outlook: growth as fast as the national average.

Correction Officers

Median wage in 2006 was \$35,760
Projected job outlook: faster growth than national average

Probation Officers & Correctional Treatment Specialists

Median wage in 2006 was \$42,500
Projected job outlook: growth as fast as national average

Appendix 5

APA GUIDELINES FOR THE UNDERGRADUATE PSYCHOLOGY MAJOR

Structure of the Guidelines

The APA Guidelines for the Undergraduate Psychology Major provides details for 10 suggested goals and related learning outcomes for the psychology major, grouped into two major categories.

Categories of Learning Goals and Outcomes

I. Knowledge, Skills, and Values Consistent With the Science and Application of Psychology

This category represents activities that provide hallmarks of psychology education. Responsibility for development in and assessment of these areas rests primarily with the psychology faculty in coursework or psychology advising.

II. Knowledge, Skills, and Values Consistent With Liberal Arts Education That Are Further Developed in Psychology

This category includes activities that are usually part of a general education program or liberal education. Responsibility for student development in these areas and assessment of students' achievements tend to be shared across a broader range of disciplines than just psychology; however, psychology coursework can contribute to and expand upon these general education goals in significant ways. In turn, well-developed liberal education skills can contribute to student achievement within the psychology major.

Learning Goals

I. Knowledge, Skills, and Values Consistent With the Science and Application of Psychology

Goal 1: Knowledge Base of Psychology

Students will demonstrate familiarity with the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.

Goal 2: Research Methods in Psychology

Students will understand and apply basic research methods in psychology, including research design, data analysis, and interpretation.

Goal 3: Critical Thinking Skills in Psychology

Students will respect and use critical and creative thinking, skeptical inquiry, and, when possible, the scientific approach to solve problems related to behavior and mental processes.

Goal 4: Application of Psychology

Students will understand and apply psychological principles to personal, social, and organizational issues.

Goal 5: Values in Psychology

Students will be able to weigh evidence, tolerate ambiguity, act ethically, and reflect other values that are the underpinnings of psychology as a discipline.

II. Knowledge, Skills, and Values Consistent With Liberal Arts Education That Are Further Developed in Psychology

Goal 6: Information and Technological Literacy

Students will demonstrate information competence and the ability to use computers and other technology for many purposes.

Goal 7: Communication Skills

Students will be able to communicate effectively in a variety of formats.

Goal 8: Sociocultural and International Awareness

Students will recognize, understand, and respect the complexity of sociocultural and international diversity.

Goal 9: Personal Development

Students will develop insight into their own and others' behavior and mental processes and apply effective strategies for self-management and self-improvement.

Goal 10: Career Planning and Development

Students will emerge from the major with realistic ideas about how to implement their psychological knowledge, skills, and values in occupational pursuits in a variety of settings.

Appendix 6

American Association of College & University's

Liberal Education and American's Promise (LEAP) Essential Outcomes

Knowledge of Human Cultures & the Physical & Natural World

- Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts

Focused by engagement with big questions, both contemporary and enduring

Intellectual & Practical Skills, Including

- Inquiry and analysis
- Critical and creative thinking
- Written and oral communication
- Quantitative and information literacy
- Teamwork and problem solving

Practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance

Personal & Social Responsibility, Including

- Civic knowledge and engagement—local and global
- Intercultural knowledge and competence
- Ethical reasoning and action
- Foundations and skills for lifelong learning

Anchored through active involvement with diverse communities and real-world challenges

Integrative & Applied Learning, Including

- Synthesis and advanced accomplishment across general and specialized studies

Demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems

Acknowledgements

Recognition should go to chairs around the state of Florida for the prompt response to the call for contributions that helped build the paper. For their especially helpful comments, I'd particularly like to thank

Gordon Bauer (New College)

Mike Brannick (USF)

Robert Dipboye (UCF)

Janet Kistner (FSU)

Laura Koppes (UWF)

Huberta Jackson-Lowman (FAMU)

Jennifer Peluso (FAU)

Eric Strahorn, (FGCU)

Rod Wellens & Victoria Noriega (University of Miami)

Thanks also go to Martha Boneau, Robin Hailstorks, and Jessica Kohout of the American Psychological Association for their data and graphics wrangling on short notice.

Jane S. Halonen, Ph.D.

Professor of Psychology/Dean of the College of Arts and Sciences
University of West Florida

Jane S. Halonen has been involved in national projects related to psychology curricula for nearly three decades. She chaired the Task Force on Undergraduate Learning Goals and Outcomes for the American Psychological Association and served as a consultant on nearly every other standards-setting process for APA over the last twenty years. In 2000, she won the American Psychological Foundation's Distinguished Psychology Teaching Award. She served for five years as the Chief Reader of the Advanced Placement Examination in Psychology. She is also the author of numerous books and articles on faculty development, assessment, critical thinking, and college success. Jane has also been an academic program reviewer for 12 psychology departments. Her latest work is a co-authored text for Jossey-Bass "Using Quality Benchmarks for Assessing and Developing Undergraduate Programs."