

U.S. Psychology's Research-Doctorate Program Infrastructure in the 21st Century

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Organization of the Presentation

- Doctoral degree production in psychology and the age profile of the research-doctorate workforce
- Academic employment trends and the role of institutional “cluster hiring” strategies
- Perceived value of “older” programs in preparing research scholars and scientists in psychology and the shift towards the brain sciences
- Emerging research and policy questions

Background

“PhD-trained scientists and engineers are a **small but essential segment** of the U.S. workforce ... Yet, there has been a great deal of concern ... that **career prospects** for PhDs are becoming less rewarding, particularly in the **academic sector** ... [These] adverse conditions ... could put the U.S. research enterprise at risk ...”

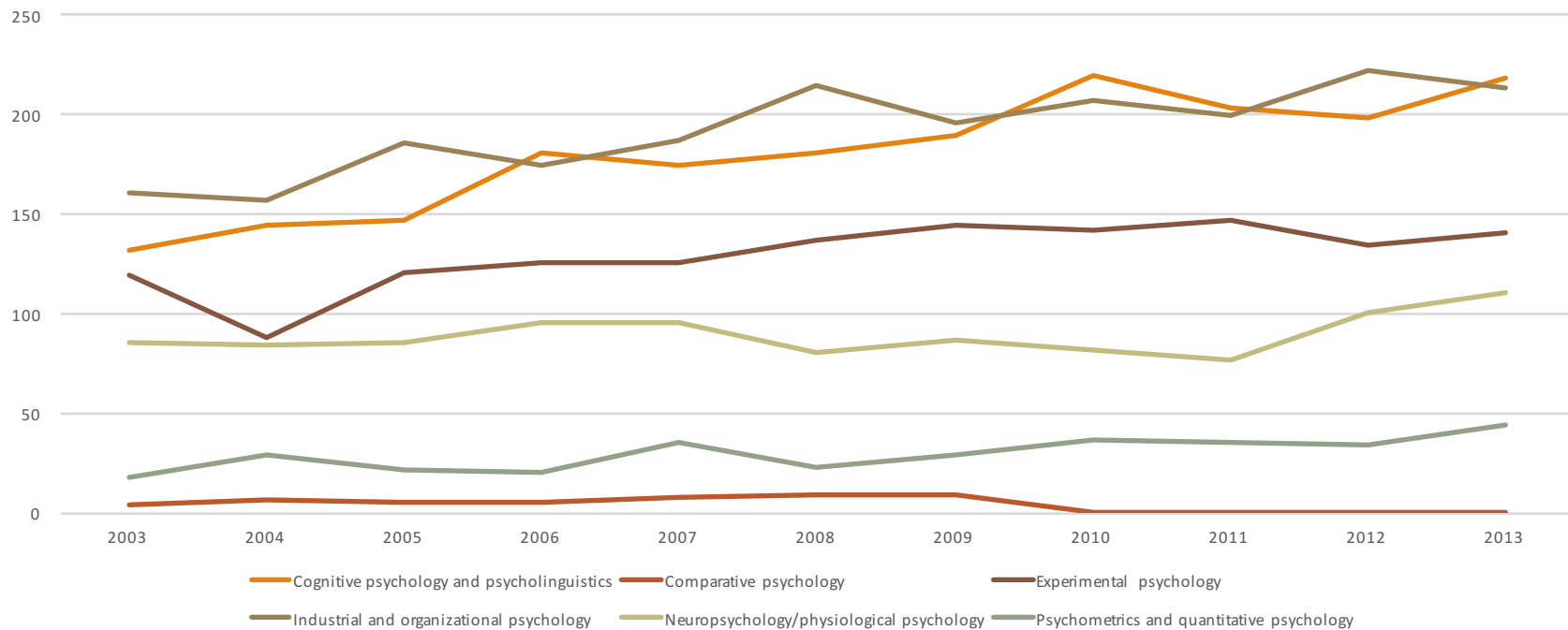
Revisiting the STEM Workforce: A Companion to Science and Engineering Indicators 2014

U.S. National Science Board

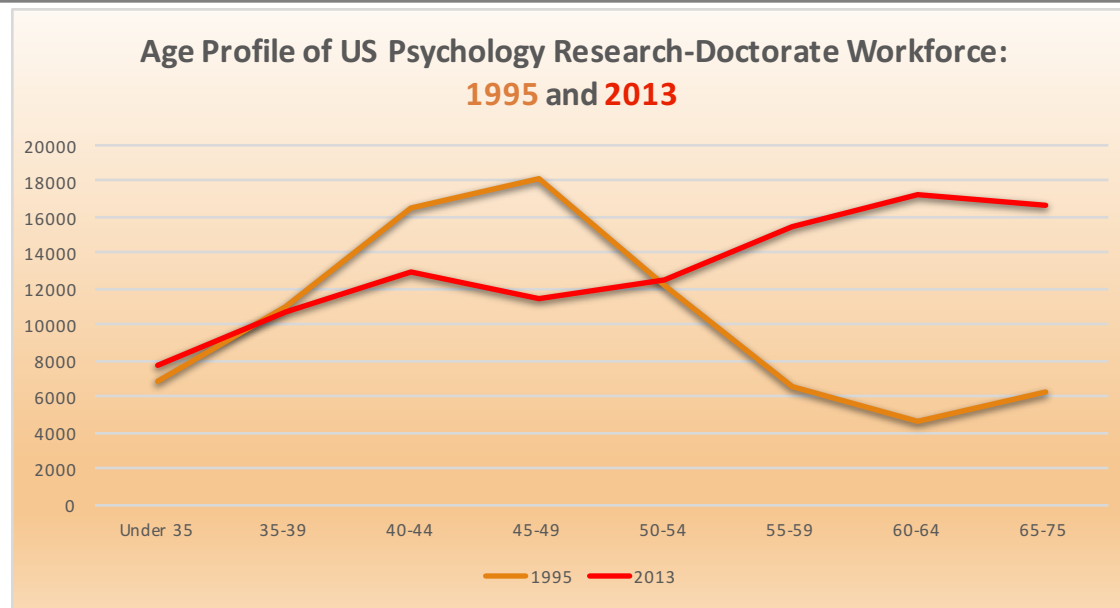
February 4, 2015

Every Year US Colleges and Universities Confer About 3,000 Psychology Research Doctorates, with Growth Evident Among the Laboratory and Applied Research Specialties

Evidence of Change in Research-doctorate Awards for Selected Psychology Subfields:2003-2013



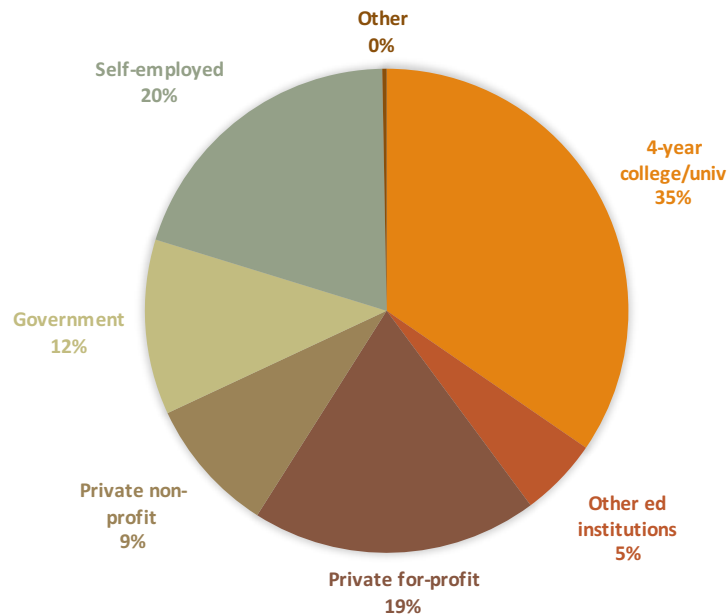
The Challenge: The Age Profile of the Research-Doctorate Workforce in Psychology Has Changed As Older Psychologists Dominate the Landscape in 2013 (60% Over 50 Years of Age)



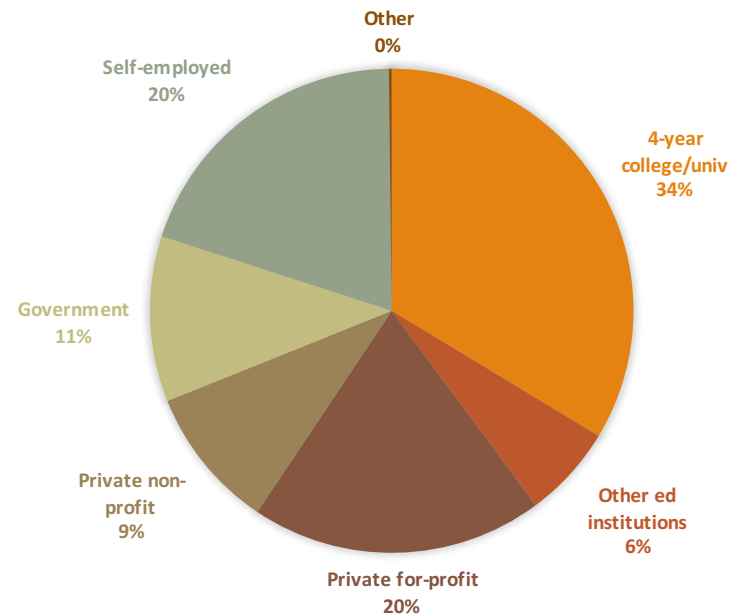
	Under 35	35-39	40-44	45-49	50-54	55-59	60-64	65-75
1995	6840	10950	16560	18170	12260	6480	4680	6190
2013	7800	10700	13000	11500	12500	15400	17300	16700

Nonetheless, Academia Continues to Account for Largest Share of Employed Research-Doctorates in Psychology: How Is This Possible?

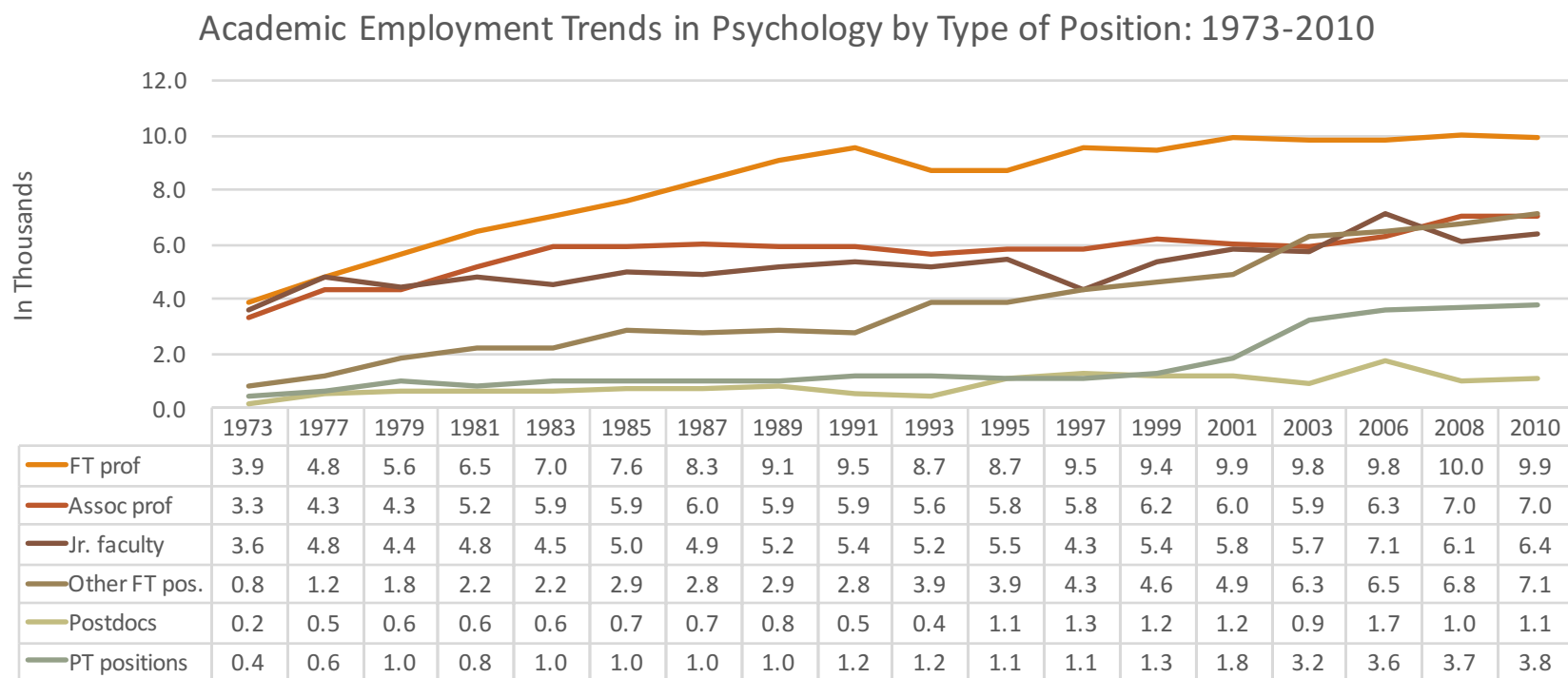
DISTRIBUTION OF PHD PSYCHOLOGISTS BY
EMPLOYMENT SECTOR: 1995
(N = 75,810)



DISTRIBUTION OF PHD PSYCHOLOGISTS BY
EMPLOYMENT SECTOR: 2013
(N = 104,900)



Academic Employment Trends in Psychology Reflect a Doubling of “PT” and “Other Full-Time” Positions Between 2000 and 2010



“Cluster Hiring” Has Emerged in Many Academic Settings as an Option to Recruit and Retain Needed Talent, Including in the Behavioral Sciences

Doing 'Cluster Hiring' Right

September 30, 2013

By [Laura Severin](#)

"Cluster hiring," or hiring multiple faculty into interdisciplinary research areas, is becoming a trend that is changing the dynamics of an institution. North Carolina State University, University of Iowa, University of North Texas and other institutions have implemented cluster hiring initiatives.

Initially, institutions may be lured to new interdisciplinary initiatives by the promise of federal funding. Other equally important motivators are the demand for academic programs focused on

UNIVERSITY OF WISCONSIN-MADISON



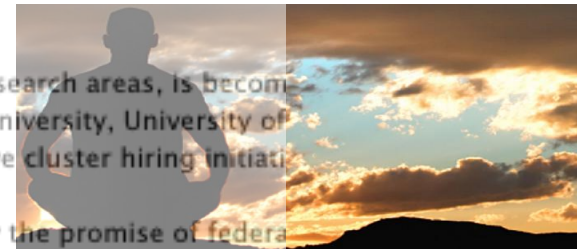
Cluster Hiring Initiative

HOME CURRENT CLUSTERS CLUSTER ARCHIVES POLICIES

Cluster Hiring Initiative

In 1998, UW-Madison launched an innovative university/state partnership—the Cluster Hiring Initiative (CHI). This bold effort was designed to foster collaborative research, education and outreach by creating new interdisciplinary areas of knowledge that crossed the boundaries of existing academic departments. The faculty hired within the 49 newly funded areas, or “clusters,” have approached their work with excitement and optimism. This Web site explains the program and highlights the faculty’s accomplishments.

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University of Minnesota to hire 16 new faculty to form collaborative clusters that will address global health and environmental challenges

August 30, 2012

(Re)Framing the Policy Science Questions

- What is the history of doctoral research training in psychology in the United States?
- How has the mix of US colleges and universities offering research-doctorates in psychology changed over time?
- What changes have occurred in the “perceived quality” of research training in psychology given the expansion of the U.S. institution base?
- What research and policy questions remain in light of these trends?

What is the history of doctoral research training in
psychology in the United States?

Historical Insights into the Origins of Psychology in Higher Education in the United States: 1883-1893

Psychological laboratories were located in higher education institutions that were already awarding PhDs in the sciences, engineering and humanities – or would soon be doing so.

However, not all institutions with early psychology laboratories eventually awarded PhD degrees in psychology.

Year of 1st Research Doctorate in Psychology

Year of 1 st Psychology Laboratory	Laboratory Location [L. Benjamin (2000)]	Year of 1st Inst. Res. Doc. (USOE)	<i>Per R. S. Harper (1949)</i>	US NSF DRF (1920+)
1883	JHU	1897	1886	
1887	Indiana U	*	1912	
1887	Penn	1880		1921
1888	U Wisc	1892		1922
1889	Clark	1891	1891	
1889	U Kansas	1895		1930
1889	U Neb	1896		1930
1890	Columbia	1882		1921
1890	U Iowa	1903	1907	
1890	U Michigan	1876	1913	
1891	Catholic U	1897	1909	
1891	Cornell	1872	1894	
1891	<i>Wellesley</i>			
1892	Brown	1889		1923
1892	Harvard	1873		1924
1892	U Illinois	1903	1916	
1892	<i>Trenton State</i>			
1892	Yale	1860		1923
1893	U Chicago	1893	1899	
1893	Princeton	1879	1909	
1893	<i>Randolph-Macon</i>			
1893	Stanford	1894		1923

Historical Origins: 1894- 1900 (Continued)

Not all institutions that established psychology laboratories on or before 1900 were also early to confer research-doctorates in psychology; and some remained baccalaureate institutions.

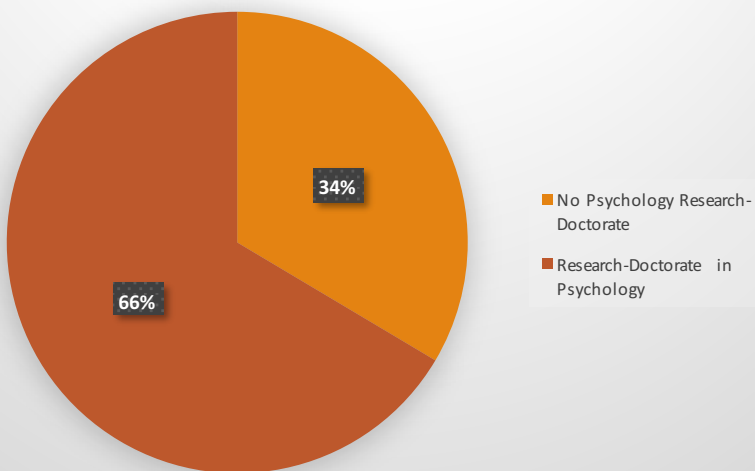
Year of 1st Research Doctorate in
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Year of 1 st Psychology Laboratory	Laboratory Location [L. Benjamin (2000)]	Year of 1st Inst. Res. Doc. (USOE)	<i>per R. S. Harper (1949)</i>	US NSF DRF (1920+)
1894	<i>Amherst</i>			
1894	<i>Denison U</i>			
1894	U Minnesota	1888		1921
1894	U City of NY	CUNY 1965		1965
1894	Penn State	1926		1934
1894	<i>Wesleyan</i>	1965		
1894	Western Reserve	1895		1932
1895	<i>Smith</i>			
1896	U Cal - Berkeley	1885		1921
1896	<i>Wilson College</i>			
1897	Ohio State	1890	<i>1917</i>	
1898	Bryn Mawr	1888		1922
1898	U Texas- Austin	1916		1932
1899	U Oregon	1926		1938
1900	U Maine	1960		1963
1900	U Missouri -Col	1899		1925
1900	NYU	1866	<i>1898</i>	
1900	Northwestern	1896		1925
1900	U Wyoming	1947		1958

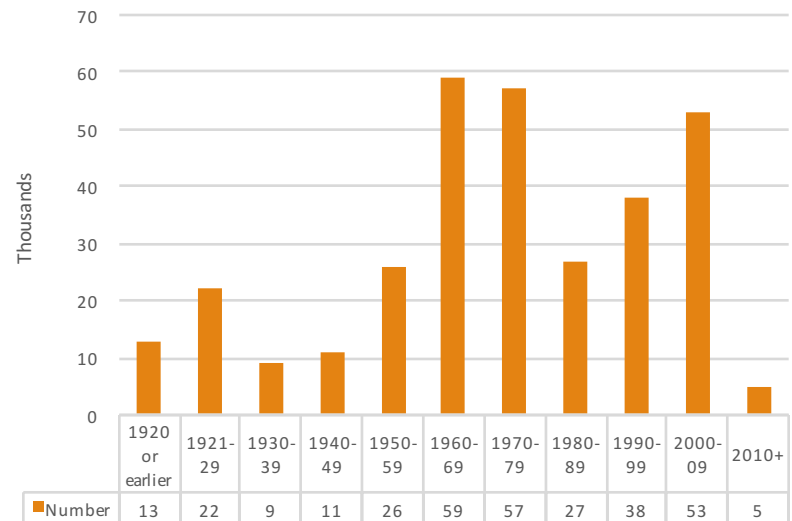
How has the mix of US colleges and universities offering research-doctorates in psychology changed over time?

Not All US Colleges and Universities Offering Research Doctorates Confer Them in Psychology and Three-Quarters Who Do Awarded Them for the First Time After 1960

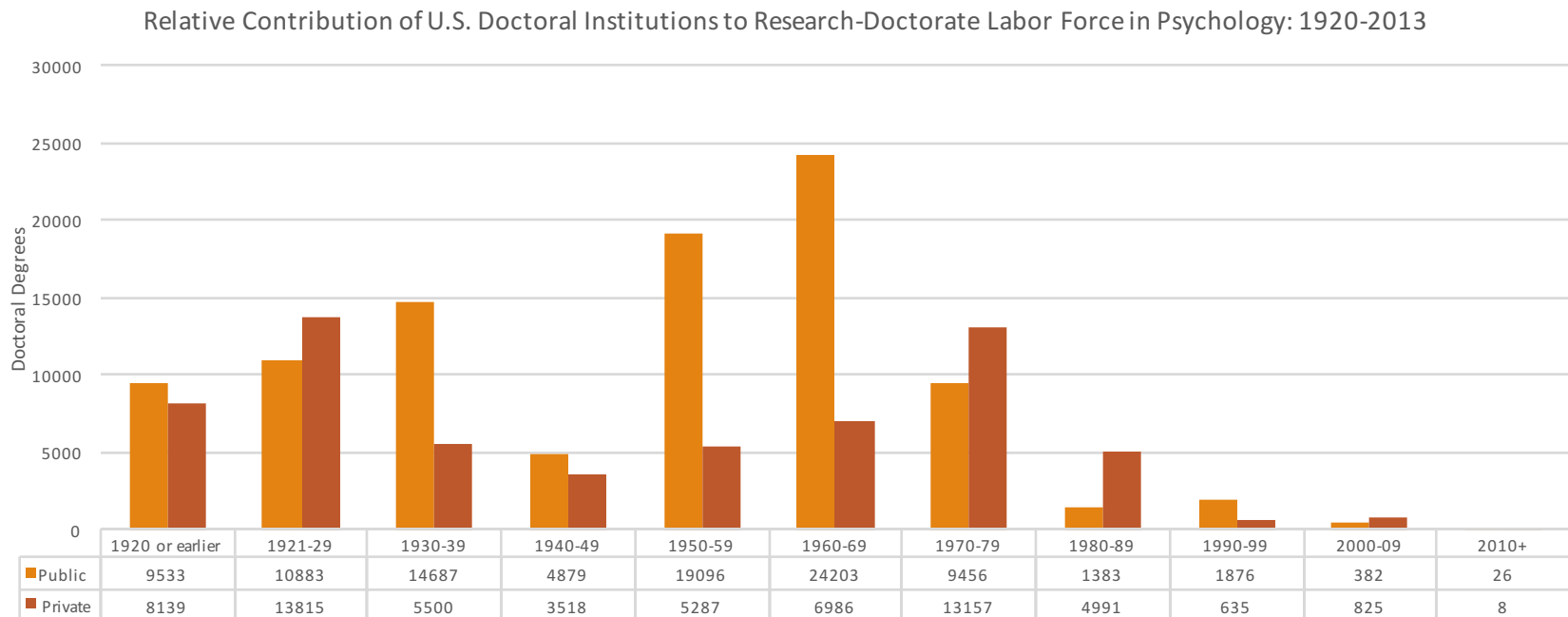
Distribution of Psychology Degrees Offered by US Research-Doctorate Institutions: 2012



Distribution of Institutions Offering Research-Doctorates in Psychology by Year of 1st Doctorate: 1920-2012



Between 1920 and 2012, U.S. Public Research Universities Contributed a Preponderance of Psychology Research-Doctorates



What changes have occurred in the “perceived quality” of research training in psychology given the expansion of the U.S. institution base?

Surveys Reveal that Faculty Peers Favor Research-Training Provided by Older Degree-Granting Programs

Conference Board of Associated Research Councils Series

- Scholarly quality of program faculty
- Effectiveness of program in preparing research scholars/scientists

(Note emergence of cognitive and/or brain sciences in department names)

Psychology Research
Doctorate "Scoring"
Faculty Quality/Program
Effectiveness (NRC)

Institution	Year of 1 st Research Doctorate in Psychology [incl. L. Benjamin]	1993	2006 (S/2)	2015 Department Name
JHU	1886	S/S	11	Psychological & Brain Sciences
Clark	1891		129	Psychology
Cornell	1894	D/D	79	Psychology
NYU	1898	S/S	42.5	Psychology
U Chicago	1899	S/S	19.5	Psychology
U Iowa	1907	S/S	34.5	Psychology
Catholic U	1909		190	Psychology
Princeton	1909	D/D	3.5	Psychology
U Michigan	1913	D/D	12.5	Psychology
U Illinois	1916	D/D	38.5	Psychology
Ohio State	1917	S/S	47.5	Psychology
Indiana U	1912	S/D	26	Psychology & Brain Sciences

Distinguished and Strong Ratings Fairly Consistent Across Survey Years for Older Degree Programs

Conference Board of Associated Research Councils Series: 1993 and 2006 surveys

(Note emergence of cognitive and/or brain sciences in department names)

Psychology Research Doctorate "Scoring"
Faculty Quality/Program Effectiveness
(NRC)

Institution	Year of 1 st Research Doctorate in Psychology [incl. L Benjamin]	1993	2006 (S/2)	2015 Department Name
U Minnesota	1921	D/D	35.5	Psychology*
U Cal - Berkeley	1921	D/D	41.5	Psychology
Penn	1921	D/D	24.5	Psychology
Columbia	1921	D/S	18	Psychology
Carnegie Mellon	1921		7	Psychology
Vanderbilt	1921	S/S	35	
U Wisconsin-Madison	1922	D/S	10	Psychology
Bryn Mawr	1922			Psychology
Brown	1923	S/S		Cognitive, Linguistics & Psych Sci
Yale	1923	D/D	8.5	Psychology
Stanford	1923	D/D	5	Psychology
Fordham	1923			
Harvard	1924	D/D	2.5	Psychology
Marquette	1924			
U Missouri -Col	1925		73.5	Psychological Sciences
Northwestern	1925	S/S	50	Psychology
U Washington-Seattle	1925	D/S	55.5	Psychology
UNC-Chapel Hill	1926	S/S	46.5	Psychology
USC	1927	S/S	48	Psychology
Syracuse University	1928			
U Colorado-Boulder	1928	S/S	19.5	
U Kansas	1930			Psychology
U Neb	1930		94	Psychology
U Pittsburgh	1930		25.5	Psychology
American University	1930		205.5	Psychology
Duke University	1930	S/S	21.5	Psychology

Proportionately Fewer Distinguished Ratings for a Sample of “Newer” Degree Programs

Scoring procedure changes with the 2006 survey: “On a scale from 1 to 6, where 1 equals not adequate for doctoral education and 6 equals a distinguished program, how would you rate this program?”

(Note emergence of cognitive and/or brain sciences in department names)

Psychology Research Doctorate
“Scoring” Faculty
Quality/Program Effectiveness
(NRC)

Institution	Year of 1 st Research Doctorate in Psychology [incl. Benjamin]	1995	2006	2015 Department Name
U North Dakota	1931		138	Psychology
Western Reserve	1932		94.5	Psychological Sciences
U Texas- Austin	1932	D/S	54	Psychology
Washington U - St Louis	1932		33	Psychology
Saint Louis U	1933		na	
U Kentucky	1933			
Penn State	1934	S/S	65.5	Psychology
U Virginia	1934	S/S	36.5	Psychology
U Rochester	1937	S/S	12.5	Brain & Cognitive Sciences*
U Oregon	1938	S/S	40.5	Psychology
Boston University	1939		61	Psychology
Purdue	1939	S/S	106	Psychological Sciences
UCLA	1939	D/D	16	Psychology

In Summary

- Doctoral degree production in psychology remains steady at about 3,000 per year, with evidence of a trend towards laboratory and applied research training
- About 60% of psychology research doctorates in the US workforce were over the age of 50 in 2013
- Academia continues to be the primary sector of employment for psychology research doctorates, largely as a result of growing numbers of part-time and “other” fulltime employed faculty
- A number of universities have implemented “cluster hiring” in part to promote interdisciplinary research and teaching
- Universities which established psychology laboratories before 1900 were also among the first to confer research-doctorates in psychology
- The vast majority (75%) of research-doctorate programs in psychology were established after 1960
- Peers generally value “older” research doctorate programs in psychology over those established in the past few decades

Emerging Research and Policy Questions

- How extensive is the practice of “cluster hiring” across research-doctorate programs in psychology?
 - With what other departments/centers do psychology departments tend to collaborate when participating in “cluster hiring”?
 - What are the implications of cluster hiring for the design of the NSF Survey of Doctorate Recipients (SDR)?
- Can an argument be made for redefining the length of an S&E career given the age profile of the research-doctorate workforce in the social and behavioral sciences?
 - What is the age profile of the psychology workforce employed in academia?
 - What are the implications of age trends for the SDR sampling plan and/or longitudinal tracking of research-doctorates for purposes of policy and planning?
- What does the trend towards renaming of psychology departments to reflect greater emphasis on the cognitive and neurosciences imply for degree specialty training in those departments and within the field?
 - What are the employment outcomes for graduates of research-doctorate programs emphasizing training in the cognitive and brain sciences?
 - Are there implications of these outcomes for graduate and/or postdoctoral research training support by the US federal government (i.e., the White House Brain Initiative)?

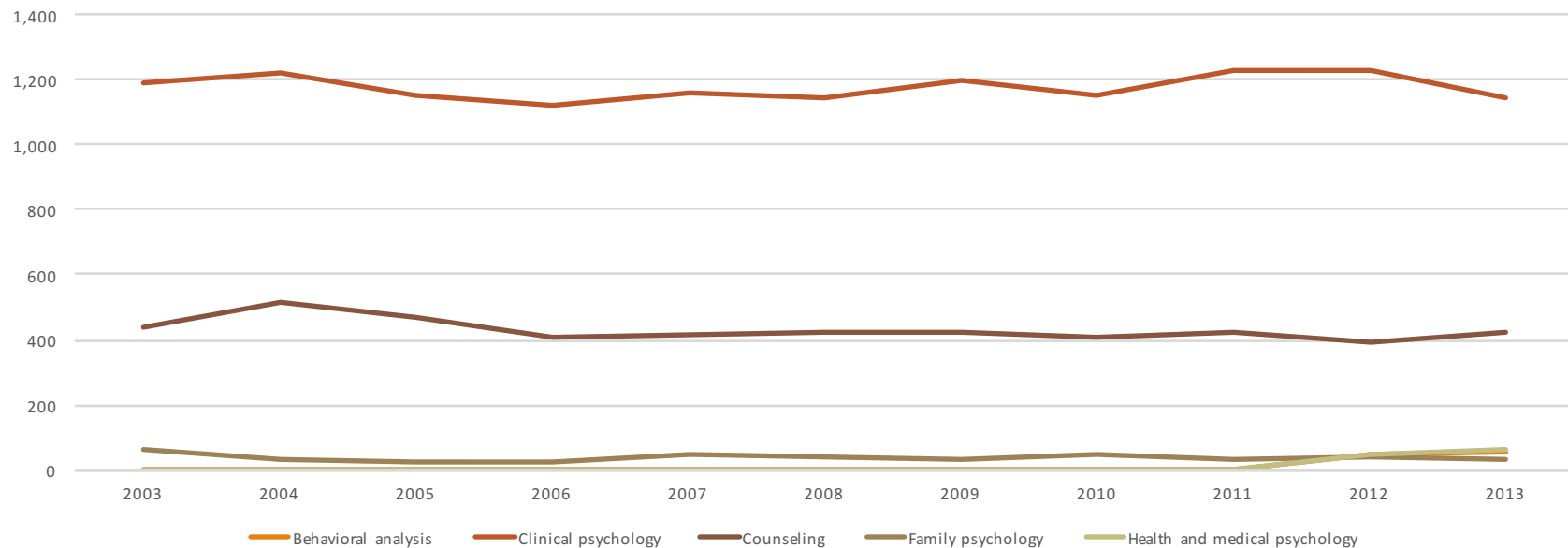
Back-up Slides

Changes Have Occurred in the Specialties List for Psychology Utilized by the Survey of Earned Doctorates: 2000 – 2013

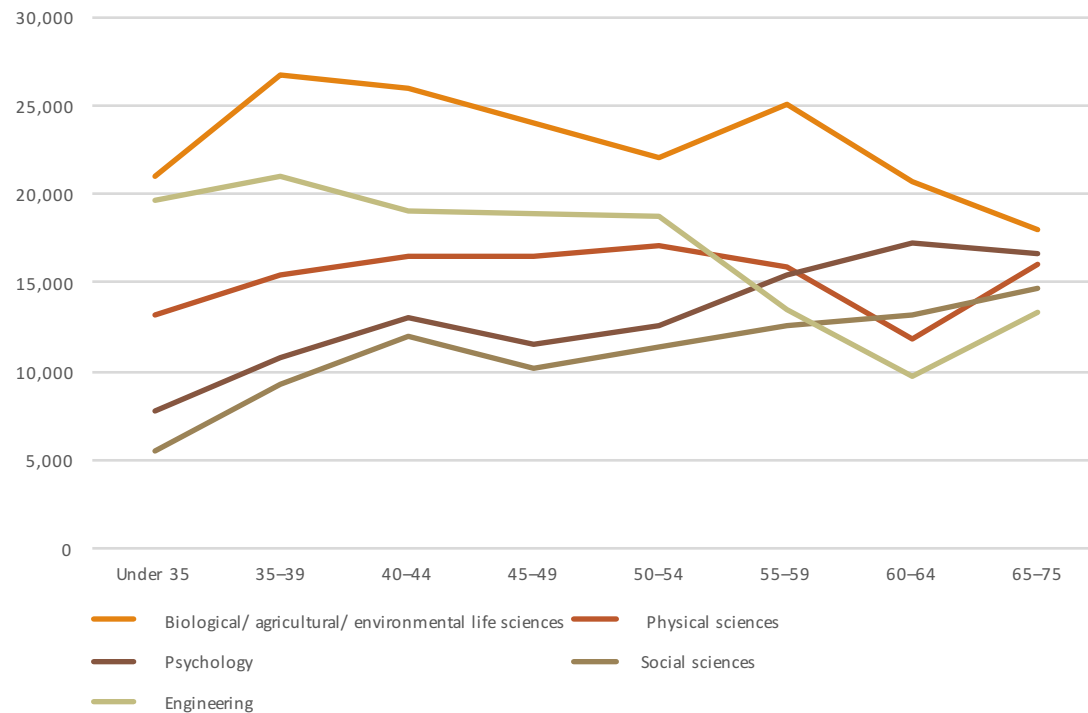
2000	2005	2010	2013*
Clinical	Clinical	Clinical Psychology	Behavioral Analysis
Cognitive & Psycholinguistics	Cognitive & Psycholinguistics	Cognitive Psychology & Psycholinguistics	Clinical Psychology Cognitive Psychology & Psycholinguistics
Comparative	Comparative	Counseling	Counseling
Counseling	Counseling	Developmental & Child Psychology	Developmental & Child Psychology
Developmental & Child	Development & Child	Educational Psychology	Educational Psychology
Human/Indiv. & Family Dev.	Human Dev. & Family Studies	Experimental Psychology	Educational Psychology
Experimental	Experimental	Family Psychology	Experimental Psychology
Educational	Educational	Human Dev. & Family Studies	Family Psychology
Family & Marriage Counseling	Family Psychology	I/O	Health & Medical Psychology Human Development & Family Studies
I/O	I/O	Personality Psychology	Human Development & Family Studies
Personality	Personality	Physiological/Psychobiology Psychology	I/O
Psychometrics Quantitative	Psychometrics and Quantitative Psychology School	Psychometrics & Quantitative Psychology School Psychology	Neuropsychology/Physiological Psychology Personality Psychology
School	Social	Social Psychology	Psychometrics & Quantitative Psychology
Social	Psychology, Gen.	Psychology, Gen.	School Psychology
Psychology, Gen. Psychology, Other	Psychology, Other	Psychology, Other	Social Psychology Psychology, Gen. Psychology, Other

Among the 3,000 Psychology Research Doctorates Conferred Each Year, the Number in the Clinical Sciences (Broadly Defined) Remained Steady Between 2003 and 2013

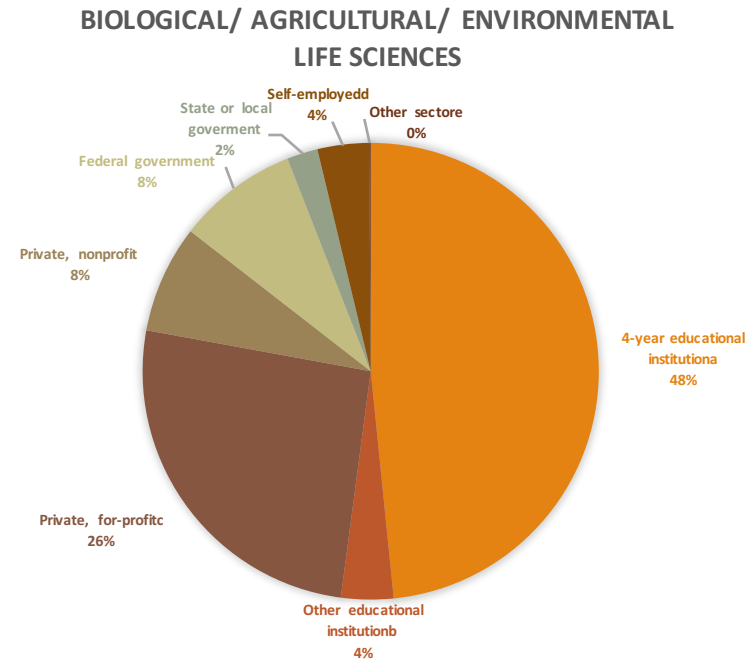
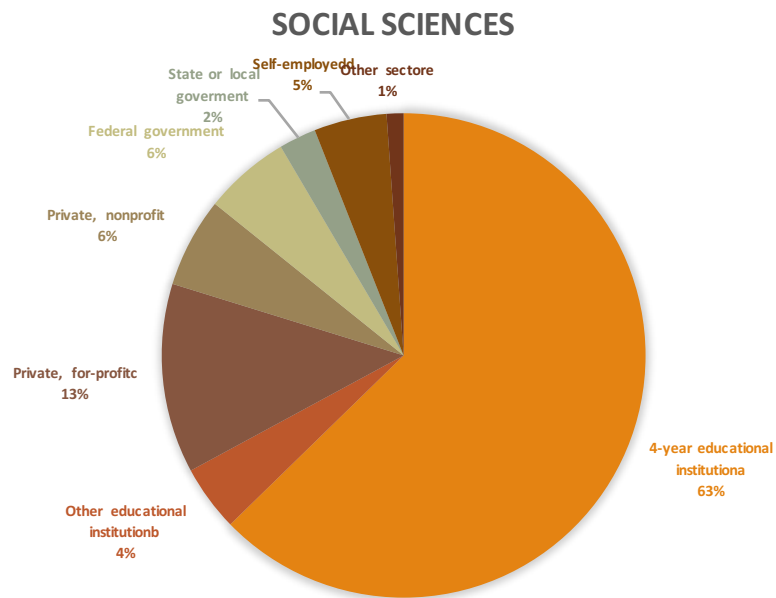
Steady-state Trends in Research-doctorate Awards for Selected Psychology Subfields: 2003 - 2013



Like the Social Sciences, Around 60% of the Psychology Research-Doctorate Workforce Was Over 50 Years of Age in 2013, in Contrast to the Physical Sciences (50%), Biosciences (47%) or Engineering (41%)

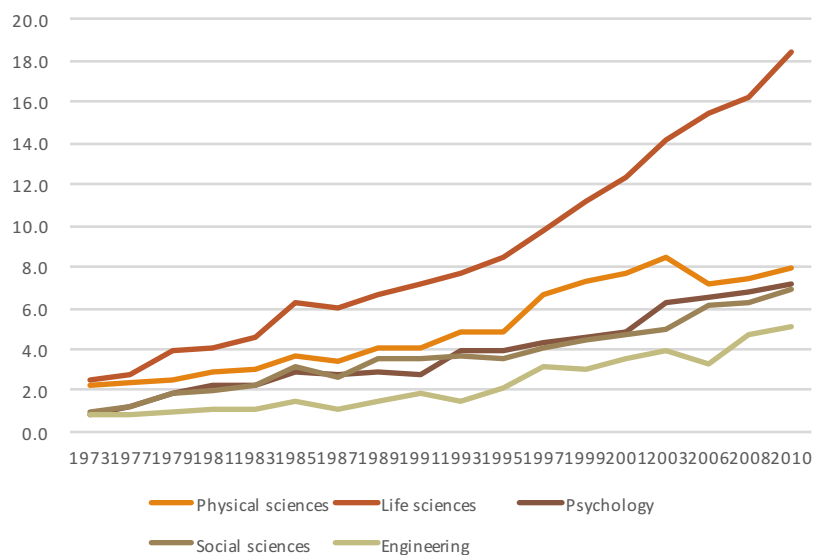


Academia also Represents a Significant Share of Employed Research-Doctorates in the Social Sciences and the Biosciences in 2013

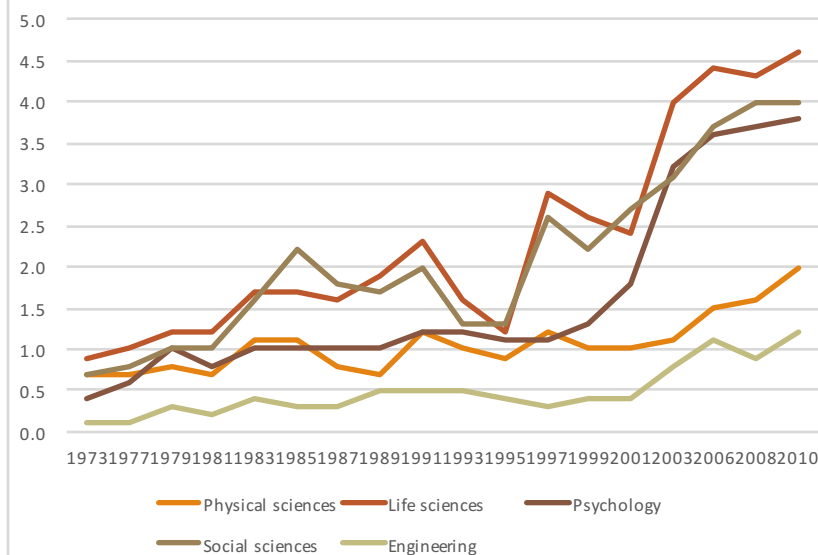


However, the Life Sciences Lead in the Growth of “PT” and “Other FT” Positions in Academia

Trends in "Other FT Positions" in Academia by Selected Doctoral Degree Field, 1973-2010



Trends in “PT Positions” in Academia by Selected Doctoral Degree Field, 1973-2010



Several “Newer”
Research-Doctorate
Programs Were Rated as
Distinguished/Strong in
2006 NRC Survey

*From P. Flattau presentation at the
Annual Meeting of the American
Psychological Association, Washington
DC August 2014*

Overall Program Ranking	Institution	Program Name	<i>E.g.: Avg. # Pubs (2000-2006) per Faculty</i>
In Top 50 Programs	Florida State University	Psychology	2.36
	University of California-Santa Barbara	Psychology	1.66
	University of Miami	Psychology	1.16
	SUNY-Binghamton	Behavioral Neuroscience	2.18
	SUNY-Stony Brook	Psychology	1.36
In Next 30	Arizona State University	Psychology	1.55
	SUNY-Albany	Social-Personality Psychology	1.05
	University of Alabama	Psychology	0.76
	SUNY-Albany	Clinical Psychology	2.3
	SUNY-Albany	Biopsychology	2.93
	SUNY-Binghamton	Cognitive Psychology	1.81
	University of California - Irvine	Psychology	0.95
	Brandeis University	Psychology	1.05
	Northeastern University	Psychology	1.05
	University of California - Riverside	Psychology	1.18
	Auburn University	Human Development & Family Studies	1.03
<i>Selection of Programs Ranked in Bottom 30</i>	<i>Southern Methodist University</i>	<i>Psychology</i>	<i>0.62</i>
	<i>Wright State University</i>	<i>Human Factors and Industrial/Organizational Psychology</i>	<i>0.37</i>
	<i>Brigham Young University</i>	<i>Psychology</i>	<i>0.76</i>
	<i>University of North Texas</i>	<i>Health Psychology and Behavior</i>	<i>0.18</i>

The Role of Doctoral Training in Science, Engineering, and the Humanities

“Doctoral programs do not ‘run themselves.’ Much depends on the care with which they are designed and the expectations that are established concerning the character and quality of work to be done by those admitted ...

“Perhaps most important [is] ‘the academic culture’ of a department ... including ‘the accepted model of working relationships between faculty and students’...” (p. 250)

“... students do, in fact, often drift without guidance for considerable periods of time ... Months go by ... and the adviser’s door remains open but undarkened by the candidate’s presence.” (p. 261)

In Pursuit of the PhD

W. G. Bowen and N. Rudenstine

1992

Available from the Princeton Legacy Library