Financial Returns on a Graduate Degree

For students who have successfully earned a bachelor's degree in their chosen field, there is celebration but there can also be a question of, *what's next?* Do they go straight into the workforce and begin building their career? Does their chosen field require more education? Some careers—scientist, researcher, social worker, psychologist, accountant, professor—require an advanced degree. Do they simply just want to continue their education? In the same or a different field? Whether for desire or necessity, is it worth getting a graduate degree? The additional degree(s) require more time—often time out of the workforce—and more money.

The demand for graduate education by employers has grown over the past two decades and is projected to continue to grow, with 16% of jobs estimated to require a graduate degree by 2031 (Carnevale et al., 2024, p. 13). At the same time, the promise of higher earnings and career advancement have made graduate degrees increasingly attractive to students (Gulish et al., 2024, p. 10). However, the financial premium of a master's degree compared to a bachelor's degree has not really improved in the last decades, while net tuition and fees has more than tripled, ultimately providing less return on investment (Gulish et al., 2024, p. 19).

As costs have increased, financial aid has become increasingly important to help students fund their graduate degrees. The College Board noted some interesting trends in financial aid for graduate (all levels) students in a 2024 report (Ma et al., 2024, pp. 34-40):

- Total grant aid awarded to graduate students increased by 22%, between AY2014 and AY2024, after adjusting for inflation. Grants grew to 37% of graduate students' funding in AY2024 from 29% in AY2014.
- Institutional grants are the second largest funding source for graduate students. Since AY2014, institutional grants for graduate students rose by 35% to $17.2 billion in AY2024.
- Federal loans are the largest funding source for graduate students. However, between AY2014 and AY2024, loans dropped from 68% of total funding for graduate students to 61%.
- Graduate students borrowed $40.4 billion in AY2024, a 13% decline over the last 10 years.
- However, Grad PLUS loans have increased 34% in the last 10 years to $14.2 billion. In AY2024, 442,000 graduate students borrowed an average annual amount of $32,160 through the Grad PLUS program.
- In addition, 1.3 million graduate students took out both subsidized and unsubsidized loans, averaging $19,520 for AY2024.

The data indicate that graduate students are taking out less in loans than they had been. However, work by the Foundation for Research on Equal Opportunity using data from the U.S. Department of Education's College Scorecard shows "a large share of graduate degrees — 43 percent of master's degrees and 23 percent of doctoral and professional degrees — do not increase students' earnings enough to justify the costs and risks of graduate school" (Cooper, 2024, Is Graduate School Worth It? section, para. 3). Thus, costs—in conjunction with post-degree earnings—are a critical part of the evaluation of the returns of a graduate degree.

The UT baccalaureates who are the base population in this study earned their graduate degree at a U.S. institution. For those who choose a University of Texas System academic institution, the in-state average full-time tuition and required fees for graduate programs ranged from $6,906 at UT Permian Basin (UTPB) to $15,088 at UT Dallas (UTD) in AY2024. Seven of the nine UT academic institutions are below the national average for public four-year institutions, and three are below the Texas public average. All UT institutions are well below the average for private institutions.

In-State Average Full-Time Tuition and Required Fees for Graduate Programs at UT Academic Institutions, AY2024

Institution	Total
UT academic average	$9,578
Texas 4-year public average	$8,267
Texas 4-year private NFP average	$20,004
U.S. 4-year public average	$11,828
U.S. 4-year private NFP average	$20,860
(U.S. Department of Education, 2024)	

It's important, as we attempt to quantify the impact of earning a graduate degree, that we acknowledge that there are benefits to the graduate beyond the financial, including higher levels of health, happiness, and well-being, as well as leading societal advancements in innovation, technology, education and the arts. And while median earnings tend to be lower for people working in education, the arts, and counseling and social work, their positive impact in their communities cannot be underestimated (Gulish et al., 2024, p. 25).

This study is wide-ranging, but still has limitations. Wages are impacted by experience, education, location, industry, and, most critically, occupation. This study is focused on the education factor and accounts for experience or, at least, for potential

years in the workforce. Although the study population is limited to those found working in Texas, which addresses location in a broad way, there are still going to be wide variations in wages within the state. Although we do have data on the industry where graduates are working, and have explored earnings by industry in previous work, industry is not included as part of this study. Occupation is a critical determinant of earnings, but that data element is unfortunately not available. So, this analysis is limited in that at least some differences in wages studied here would be attributed to occupation and detailed location differences.

Summary: Key Findings

Master's Degrees vs. Bachelor's Degrees

- Each UT System academic institution shows increased wages for those UT baccalaureates who earned a master's versus those who did not both five and ten years after baccalaureate degree.
- In general, the master's degree is most likely in the same area as the baccalaureate. For those areas where that is not the case, the master's degree is most often in Business, Education, or Health.
- Examining the broad area of study categories for UT baccalaureates, the top five areas by median wage for both baccalaureates and master's degree holders working in Texas—and at all three points in time (5, 10, 15 years post-bachelor's degree)—are architecture and engineering; computers, statistics, and mathematics; health; business; and physical sciences. All that changes is the order.
    - However, the median annual earnings for a UT baccalaureate in computers, statistics, and math who never earned a master's degree is significantly higher than for those who did.
    - UT baccalaureates in agriculture and natural resources and architecture and engineering who never earned a master's degree have slightly higher median annual wages than those who did at five and ten years after bachelor's degree (but not at fifteen years).
- There are five areas of baccalaureate study that show an earnings differential—the difference between the earnings of UT baccalaureates working in Texas who go on to earn a master's degree versus those who do not—of at least 10% at five, ten, and fifteen years: biology and life sciences; business; health; industrial arts, consumer services, and recreation; and legal, public policy, and social work.
    - Baccalaureates in communications and journalism who earned a master's degree showed very little return at five, ten, and fifteen years.
    - Only one baccalaureate area showed consistent a consistent negative earnings differential for those who went on to earn a master's degree: computers, statistics, and mathematics.
- Both male and female UT baccalaureates with master's degrees experience at least a 10% earnings differential over those with only a bachelor's degree. Although the earnings differential for men who earn master's degrees is not significantly higher than for women, the difference in actual earnings widens.
- In general, Asian American graduates see the highest return on their master's degree at both five and ten years. In addition to seeing the highest returns on earning a master's degree, Asian American graduates see the highest salaries for both bachelor's and master's degree-holders at five and ten years after graduation.
- Hispanic graduates see the lowest returns on earning a master's degree at both five and ten years, as well as having the lowest median wages for both bachelor's and master's degree-holders.

Doctoral Degrees vs. Master's Degrees

- In half of the UT baccalaureate areas of study, the doctoral degree is most frequently in the same broad area as the bachelor's degree. For those areas where it is not, the doctoral degree is most commonly in health or legal services, public policy, and social work. For baccalaureates from five areas, at least 40% of those who earned doctoral degrees remain in-field.
- Examining the broad area of study for UT baccalaureates, the top five areas by median wage for both master's degree holders and doctorates working in Texas are more varied, with social sciences and biology and life sciences making appearances.
- For those UT baccalaureates from all areas who earned a doctorate within either 10 or 15 years, the earnings are higher than for those whose highest degree is a master's.

- At ten years, the range of difference is $7,600 for computers, statistics, and mathematics to $49,000 for communications and journalism, with graduates from ten baccalaureate areas who go on to earn a doctorate having at least a $20,400 premium.
- At fifteen years, it ranges from $12,000 for bachelor's in computers, statistics, and mathematics to $82,200 for biology and life sciences, with graduates from seven baccalaureate areas who go on to earn a doctorate having at least a $31,600 premium over those with a master's degree.
- Female graduates with doctoral degrees see higher rates of return then male graduates, but their median wages are significantly below those for men with doctoral degrees at ten and fifteen years out, although women with a doctorate do have higher median annual earnings than men whose highest degree is a master's.
- For doctorates earned within ten years, Asian American graduates see the lowest rate of return (24%), but they have the highest median wage at nearly $135,000. Hispanic UT baccalaureates who went on to earn a doctoral degree had nearly a 40% earnings differential compared to those with only a master's degree at ten years, although the median wages of Hispanic doctorates are the lowest.

A Closer Look: Master's Degrees

The Georgetown University Center on Education and the Workforce (CEW), looking at data from the U.S. Census Bureau and the Bureau of Labor Statistics, found that 86% of master's degree holders are employed, a small premium over baccalaureates (82%) and more than ten points higher than adults overall (75%). The median earnings of those with a master's degree was $92,000, while the median for baccalaureates was $78,000, an 18% return. This premium, like median wages for both bachelor's and master's degree holders, has remained relatively flat over the last three decades (Gulish et al., 2024, pp. 23, 27-29).

The most important part of receiving any premium first requires completing the master's degree. The CEW used data from the Baccalaureate and Beyond Longitudinal Study[1] to examine national completion rates; they found that 80% of baccalaureates who began a master's program within 10 years completed the program (Gulish et al., 2024, p. 26). Completion rates for UT System are similar; looking at the most recent cohort (2019) of 10,865 graduate students at UT System academic institutions, 82% completed a master's degree within five years (Texas Higher Education Coordinating Board, AY 2024). In either case, for the 20% who did not earn their master's degree but incurred additional costs and potentially delayed their entry into the workforce, there would be little payoff.

In this section of the report, we compare the earnings outcomes of students who exited a UT academic institution with a bachelor's degree between 2006 and 2018 and went on to earn a master's degree (from any U.S. institution) versus those UT baccalaureates who did not go on to earn a post-graduation credential. The study examines the median annual earnings of UT baccalaureates who are found working in Texas. The difference (i.e., earnings differential) in median wages between the master's degree holder and the bachelor's degree holder is a proxy for the financial premium of a master's degree. We should interpret these differences with some caution, given that the students who choose to pursue and complete a master's degree may differ in meaningful ways from students who do not complete a master's degree. However, exploring the differences in earnings outcomes between students who earn master's degrees and students who do not provides important insight into the financial outcomes associated with earning a master's degree.

The results include breakdowns by UT institution where the baccalaureate was earned, area of baccalaureate study, and various demographic characteristics. As part of the analysis, we examined the results for individual cohort differences. Although there were some variations by cohort, in the main the results were relatively consistent, so we chose not to present that breakdown here. Earnings and earnings differentials for counts less than 20 are not presented.

[1] National Center for Education Statistics, Baccalaureate and Beyond Longitudinal Study. https://nces.ed.gov/surveys/b&b/

Institution Differences

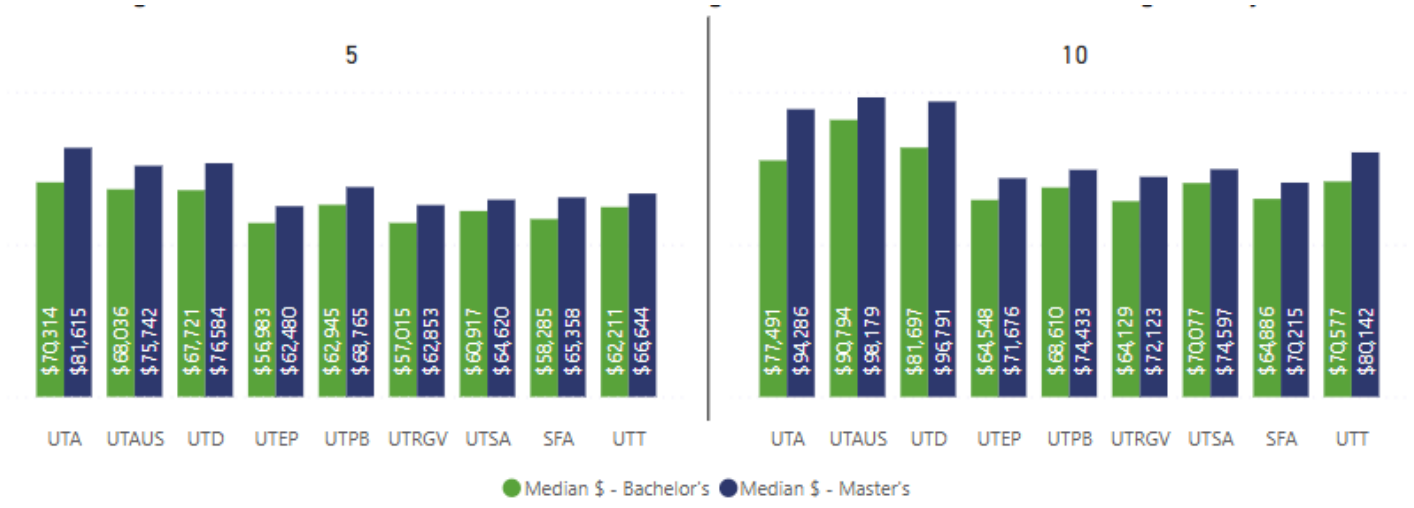
Each UT System academic institution shows increased wages for those UT baccalaureates who earned a master's versus those who did not both five and ten years after baccalaureate degree. Institutional differences in median earnings will be impacted by factors such as program mix.

- Looking at UT institutions where graduates earned their bachelor's degree, after five years, the increase in wages for those who went on to earn a master's degree varies from $3.7K (6%) at UT San Antonio (UTSA) to $11.3K (16%) at UT Arlington (UTA). That difference is 10% or greater at UTA, UT Austin, UTD, UT El Paso (UTEP), UT Rio Grande Valley (UTRGV), and Stephen F. Austin University (SFA).
- At ten years, the increase for master's degree holders ranged from $4.5K (6%) for those who earned their bachelor's from UTSA to $16.8K (22%) for those who earned their bachelor's at UTA. That difference is 10% or greater for those who earned a bachelor's from UTA, UTD, UTEP, UTRGV, and UT Tyler (UTT).
- UT baccalaureates from UTA or UTD who earned a master's degree within 10 years of their bachelor's degree are meeting or exceeding the 18% premium indicated by the Georgetown CEW.

Difference in Annual Wages: Master's Degree versus Baccalaureate Degree, by Institution of Bachelor's Degree

	Within Five Years of Baccalaureate Degree				Within Ten Years of Baccalaureate Degree			
Baccalaureate Institution	# Yes	# No	%	$	# Yes	# No	%	$
UTA	8,885	42,492	16%	$11.3K	6,434	17,584	22%	$16.8K
UTAUS	10,147	56,107	11%	7.7K	9,060	25,510	8%	7.4K
UTD	4,906	19,058	13%	8.9K	3,268	8,550	18%	15.1K
UTEP	4,358	21,322	10%	5.5K	3,906	9,976	11%	7.1K
UTPB	811	5,301	9%	5.8K	659	2,435	8%	5.8K
UTRGV	5,824	31,901	10%	5.8K	5,451	15,807	12%	8.0K
UTSA	5,166	34,518	6%	3.7K	4,464	16,581	6%	4.5K
SFA	2,088	9,759	12%	7.1K	852	2,186	8%	5.3K
UTT	1,815	10,422	7%	4.4K	1,520	4,863	14%	9.6K

Median Wages for Those Who Earned Bachelor's Degrees or Master's Degrees, by Institution



Area Differences

Throughout this study, we refer to "Area" or "Area of Study" where we have collapsed majors into 15 broad categories. The area always refers to the area of study for the bachelor's degree earned at a UT institution. In two-thirds of the areas of study, the master's degree is most frequently in the same area as the baccalaureate. For those areas where it is not, the master's degree is most often in Business, Education, or Health. For baccalaureates from architecture and engineering; business; computers, statistics, and mathematics; education; health; and legal services, public policy, and social work at least half of those who earned master's degrees remain in-field.

Table: Master's Degrees of Students Who Left a UT Academic Institution with Bachelor's Degree, 2006-2018

Baccalaureate Area of Study	# Master's Found	% of Master's Found	% Master's in Same Field as Bachelor's	For Bachelor's in Field, What is Area of Greatest % for Master's Degree (if not same)
Agriculture and natural resources	643	0.5	49.2	
Architecture and engineering	9,354	7.4	65.3	
Arts	1,864	1.5	45.7	
Biology and life sciences	3,275	2.6	23.7	Health
Business	27,998	22.0	75.7	
Communications and journalism	1,346	1.1	27.8	Business
Computers, statistics, and mathematics	5,228	4.1	50.8	
Education	19,667	15.5	73.5	
Health	24,210	19.0	78.4	
Humanities and liberal arts	4,869	3.8	24.2	Education
Industrial arts, consumer services, and recreation	1,712	1.3	17.3	Health
Legal services, public policy, and social work	9,601	7.5	73.8	
Physical sciences	1,362	1.1	47.0	
Psychology	4,139	3.3	26.4	
Social sciences	2,193	1.7	16.1	Business
Other	120	0.1	--	
Missing	9,652	7.6	--	

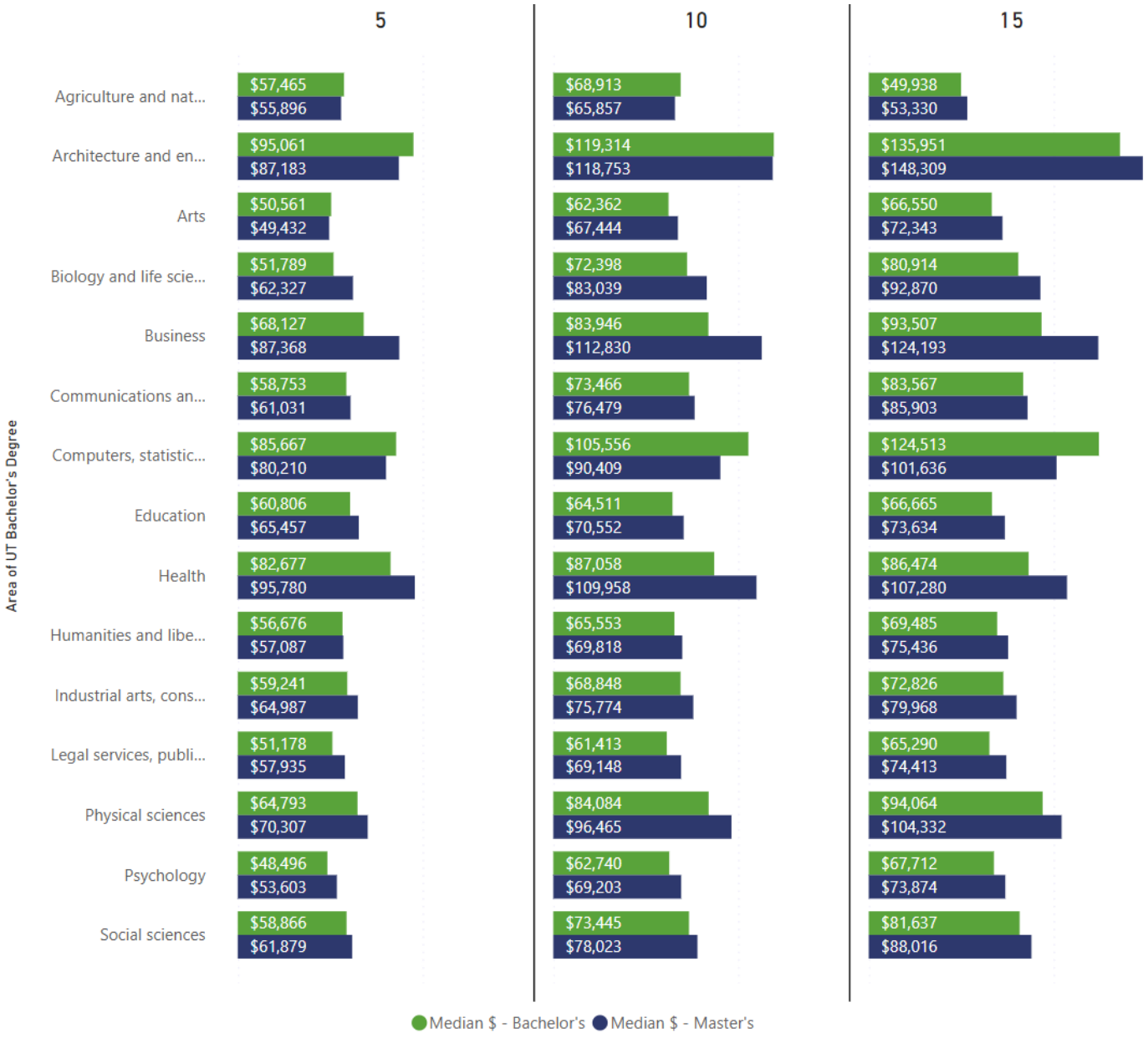
Median Wages

There is little surprising about the areas of study with the highest median annual earnings. Examining the broad area of study categories for UT baccalaureates, the top five areas by median wage for both baccalaureates and master's degree holders working in Texas—and at all three points in time (5, 10, 15 years post-bachelor's degree)—are architecture and engineering; computers, statistics, and mathematics; health; business; and physical sciences. All that changes is the order. However, it is worth noting that at all three points in time, the median annual earnings for a UT baccalaureate in computers, statistics, and math who never earned a master's degree is significantly higher than for those who did. UT baccalaureates in agriculture and natural resources and architecture and engineering who never earned a master's degree have slightly higher median annual wages than those who did at five and ten years after bachelor's degree.

Top 5 Areas of Study for UT Baccalaureates by Median Annual Earnings

	5 Years	10 Years	15 Years
Highest Degree = Bachelors	architecture and engineering	architecture and engineering	architecture and engineering
	computers, stats, and math	computers, stats, and math	computers, stats, and math
	health	health	physical science
	business	physical science	business
	physical science	business	health
Highest Degree = Masters	health	architecture and engineering	architecture and engineering
	business	business	business
	architecture and engineering	health	health
	computers, stats, and math	physical science	physical science
	physical science	computers, stats, and math	computers, stats, and math

Median Wages for Those Who Earned Bachelor's Degrees or Master's Degrees, by Area



Earnings Differential (Master's versus Bachelor's Degrees)

Actual values are important, but so is the earnings differential, or the difference between the earnings of UT baccalaureates working in Texas who go on to earn a master's degree versus those who do not. There are five areas of baccalaureate study that show an earnings differential of at least 10% at five, ten, and fifteen years: biology and life sciences; business; health; industrial arts, consumer services, and recreation; and legal, public policy, and social work. A master's degree in communications and journalism showed very little return compared to a bachelor's degree at five, ten, and fifteen years. Only one area showed consistent a consistent negative earnings differential: computers, statistics, and mathematics.

Difference in Annual Wages: Master's Degree versus Baccalaureate Degree, by UT Baccalaureate Area of Study

	Within Five Years of Baccalaureate Degree				Within Ten Years of Baccalaureate Degree			
Area of UT Bachelor's Degree	# Master's	# Bacc	%	$	# Master's	# Bacc	%	$
Agriculture and natural res...	127	755	-3%	-$1.6K	49	191	-4%	-$3.1K
Architecture and engineering	3,516	19,588	-8%	-$7.9K	2,833	8,627	-0%	-$0.6K
Arts	983	8,585	-2%	-$1.1K	901	3,945	8%	$5.1K
Biology and life sciences	2,979	14,245	20%	$10.5K	2,281	5,544	15%	$10.6K
Business	8,672	41,470	28%	$19.2K	6,459	21,052	34%	$28.9K
Communications and journ...	1,154	14,851	4%	$2.3K	1,268	7,289	4%	$3.0K
Computers, statistics, math	1,400	9,287	-6%	-$5.5K	1,020	3,526	-14%	-$15.1K
Education	3,347	24,053	8%	$4.7K	4,236	13,074	9%	$6.0K
Health	7,048	25,234	16%	$13.1K	4,695	7,503	26%	$22.9K
Humanities and liberal arts	3,455	22,327	1%	$0.4K	3,673	10,599	7%	$4.3K
Industrial arts, consumer ser...	2,102	12,389	10%	$5.7K	1,487	5,304	10%	$6.9K
Legal, public policy, social...	2,757	10,492	13%	$6.8K	1,667	4,562	13%	$7.7K
Physical sciences	780	2,868	9%	$5.5K	496	997	15%	$12.4K
Psychology	3,552	10,671	11%	$5.1K	2,510	4,287	10%	$6.5K
Social sciences	2,128	14,065	5%	$3.0K	2,039	6,992	6%	$4.6K

Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-5 thru -9	-10 thru -19	<= -20

	Within Fifteen Years of Baccalaureate Degree			
Area of UT Bachelor's Degree	# Master's	# Bacc	%	$
Agriculture and natural res...	--	--	--	--
Architecture and engineering	1,112	2,803	9%	$12.4K
Arts	322	1,096	9%	$5.8K
Biology and life sciences	858	1,632	15%	$12.0K
Business	2,465	7,007	33%	$30.7K
Communications and journ...	601	2,239	3%	$2.3K
Computers, statistics, math	412	1,163	-18%	-$22.9K
Education	1,933	4,043	10%	$7.0K
Health	1,198	1,575	24%	$20.8K
Humanities and liberal arts	1,535	3,172	9%	$6.0K
Industrial arts, consumer ser...	509	1,483	10%	$7.1K
Legal, public policy, social...	538	1,222	14%	$9.1K
Physical sciences	151	253	11%	$10.3K
Psychology	873	1,295	9%	$6.2K
Social sciences	839	2,225	8%	$6.4K

Gender Differences

At the national level, graduate degrees have helped women in the workforce, improving earnings and status, but graduate degrees do not improve the wage gap. In fact, the gender wage gap is wider between men and women with a graduate degree (71 cents on the dollar) versus those without (80 cents on the dollar) (Gulish et al., 2024, p. 56).

Both male and female UT baccalaureates with master's degrees experience at least a 10% earnings differential over those with only a bachelor's degree. At ten and fifteen years, males are experiencing higher returns.

The median wage after five years for females with only a bachelor's degree is $60,200 and for males $68,700. Female graduates who earned a master's degree within five years saw a 12% return, ending up with a median wage of $67,100—less than the male baccalaureate with no master's degree. For male graduates, it was a 10% return for a median wage of $75,600.

At ten years, the median wage for female UT baccalaureates with no master's degree was $67,000. For those with a master's degree, the median wage was $75,300. Meanwhile, with median wage of $84,900, males with a bachelor's degree were making nearly $10,000 more than females with a master's degree. Males saw a 14% return on their master's degrees, bringing them to a median wage of $97,000—more than $20,000 higher than females who had earned a master's.

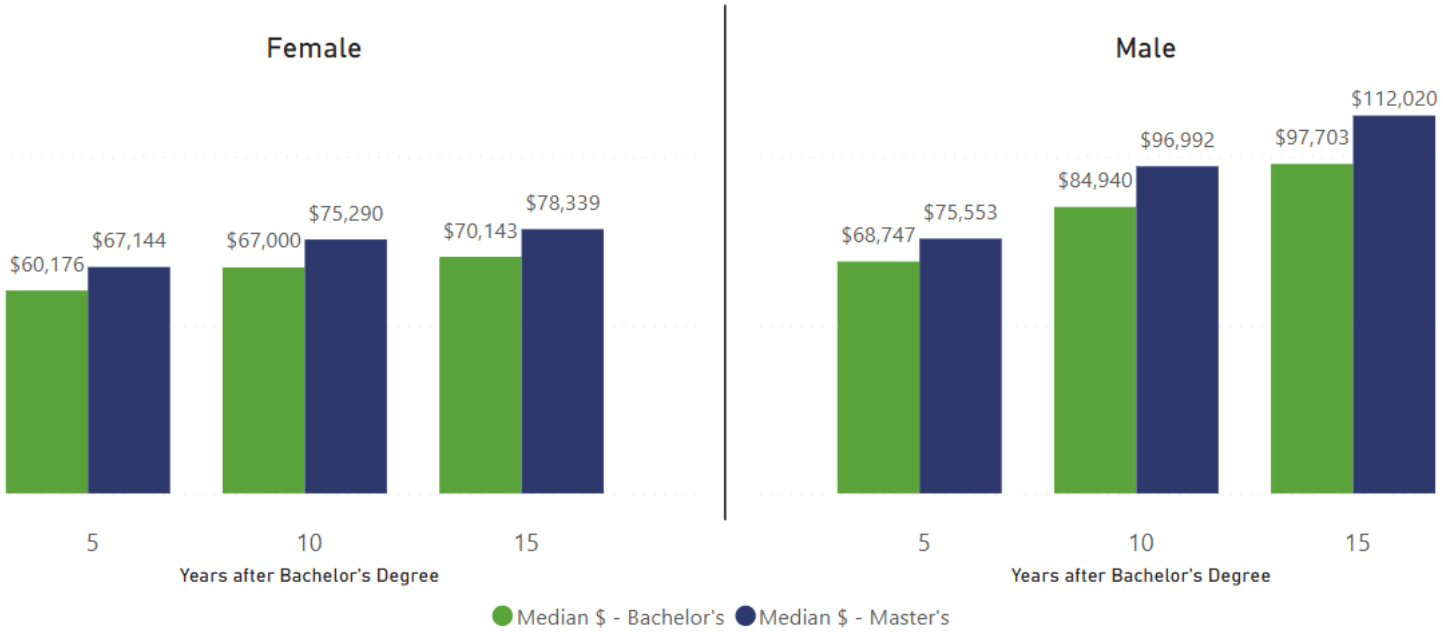
At fifteen years after earning a bachelor's degree, female baccalaureates have a median wage of $70,100, while those with a master's degree have a median wage of $78,300—a return of 12%. However, men without a master's degree have a median wage of $97,700, while those with a master's degree have a median wage of $112,000, a 15% earnings differential. At this point, men without master's degrees are making $19,400 more than their female counterparts, while for those with a master's degree, men are making nearly $34,000 more than women.

Although the earnings differential for men who earn master's degrees is not significantly higher than for women, the difference in actual earnings widens. One of the factors driving this gap is the area of study. These differences are studied in more detail in a later section.

Difference in Annual Wages: Master's Degree versus Baccalaureate Degree, by Cohort, by Gender

	Female				Male			
Institution	# Master's	# Bacc	%	$	# Master's	# Bacc	%	$
5 Years	28,067	132,693	12%	$7.0K	15,933	98,187	10%	$6.8K
10 Years	22,590	58,014	12%	$8.3K	13,024	45,478	14%	$12.1K
15 Years	8,436	17,450	12%	$8.2K	4,917	13,775	15%	$14.3K
	Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-5 thru -9	-10 thru -19	<= -20

Median Wages for Those Who Earned Bachelor's Degrees and Master's Degrees, by Gender



Race/Ethnicity Differences

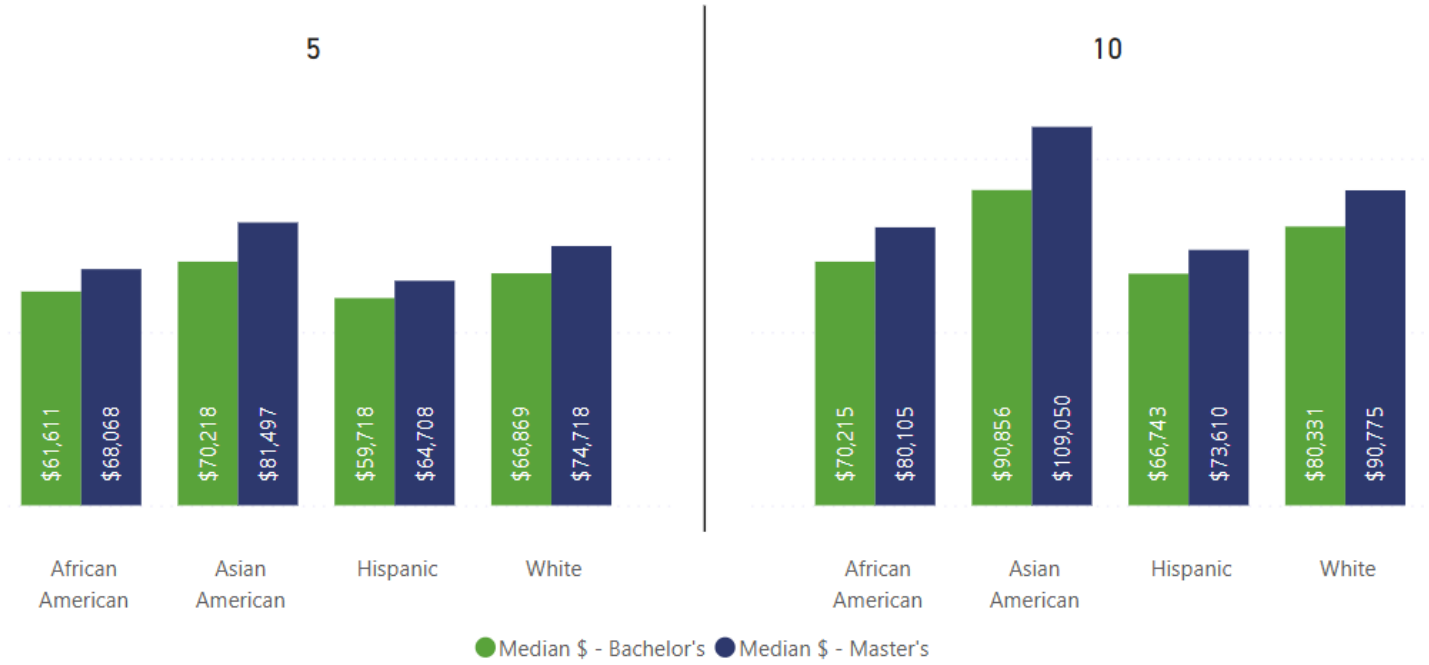
Across the U.S., Hispanic and Black adults are less likely to hold a graduate degree compared to their population overall, are more likely to take out loans to finance both undergraduate and graduate education, have higher median student debt, and have lower median earnings after graduation even within the same fields—all of which lessen the premium for a master's degree (Gulish et al., 2024, pp. 51-54). This section examines outcomes for African American, Asian American, Hispanic, and White students who graduated from a UT academic institution with a bachelor's degree who did or did not go on to earn a master's degree from any U.S. institution.

In general, Asian American graduates see the highest return on their master's degree at both five and ten years. In addition to seeing the highest returns on earning a master's degree, Asian American graduates see the highest salaries for both bachelor's and master's degree-holders at five and ten years after graduation. Hispanic graduates see the lowest returns on earning a master's degree at both five and ten years, as well as having the lowest median wages for both bachelor's and master's degree-holders.

Difference in Annual Wages: Master's Degree versus Baccalaureate Degree, by Race/Ethnicity

	Within Five Years of Baccalaureate Degree				Within Ten Years of Baccalaureate Degree			
Race/Ethnicity	# Yes	# No	%	$	# Yes	# No	%	$
African American	4,021	16,507	10%	$6.5K	2,953	6,159	14%	$9.9K
Asian American	4,513	19,680	16%	$11.3K	3,262	8,059	20%	$18.2K
Hispanic	16,368	95,540	8%	$5.0K	14,038	42,435	10%	$6.9K
White	16,946	91,215	12%	$7.8K	13,888	43,771	13%	$10.4K
	Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-5 thru -9	-10 thru -19	<= -20

Median Wages for Those Who Earned Bachelor's Degrees and Master's Degrees, by Race/Ethnicity



Intersection with Area of Study

One of the most important factors in determining wage outcomes for both baccalaureates and master's degree holders is the field of study, so in this section we explore how field of study for the UT baccalaureate intersects with other factors to influence earnings outcomes for those who go on to receive a master's degree versus those who do not.

Area + Institution

There are three areas of study for baccalaureates from all UT academic institutions with consistent positive outcomes for graduates who went on to earn a master's degree within five years—biology and life sciences, business, and health. UT baccalaureates in business who went on to earn a master's degree saw at least a 10% return for all institutions. Most institutions have five or six areas of study for UT baccalaureates where those who go on to earn a master's degree see returns of at least 10% and around four to six areas that see returns of below 5%.

Heat Map: Percent Difference in Annual Wages: Master's Degree versus Baccalaureate Degree Within Five Years, by UT Baccalaureate Area of Study and Institution

Area of UT Bachelor's Degree	UTA	AUS	UTD	UTEP	UTPB	UTRGV	UTSA	SFA	UTT	Overall
Agriculture and natural res...				30			16	-1		-3
Architecture and engineering	-11	-8	6	5		-8	-15		-2	-8
Arts	-12	-7	9	22		-6	11	3	-21	-2
Biology and life sciences	15	23	31	22	10	23	14	12	9	20
Business	18	10	21	24	13	15	21	25	14	28
Communications and journ...	-0	2	-2	22	17	16	5	17		4
Computers, statistics, math	8	-20	2	2	8	8	-8	-13	-10	-6
Education	5	5	3	6	7	9	6	15	19	8
Health	21	12	34	19		11	18	9	32	16
Humanities and liberal arts	-0	6	-21	-3	5	6	-5	5	2	1
Industrial arts, consumer ser...	10	15		10	3	6	0	9	21	10
Legal, public policy, social...	6	13	18	17	13	17	9	7	-3	13
Physical sciences	9	35	-5	3	52	17	9	-19		9
Psychology	6	7	6	24	7	21	9	2	20	11
Social sciences	12	5	2	17	24	2	10	14	-3	5
Overall	16	11	13	10	9	10	6	12	7	
# Areas < 5%	4	4	6	3	1	3	4	5	6	
# Areas >= 10%	5	6	4	10	6	7	6	5	5	

Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-5 thru -9	-10 thru -19	<= -20

There are three areas of study for baccalaureates from all UT academic institutions with positive outcomes for graduates who earned a master's degree within ten years—business, education, and health. Again, only business yields returns greater than 10% for all institutions. Two-thirds of institutions have at six or more areas that have at least 10% returns.

Heat Map: Percent Difference in Annual Wages: Master's Degree versus Baccalaureate Degree Within Ten Years, by UT Baccalaureate Area of Study and Institution

Area of UT Bachelor's Degree	UTA	AUS	UTD	UTEP	UTPB	UTRGV	UTSA	SFA	UTT	Overall
Agriculture and natural res...										-4
Architecture and engineering	0	1	6	5		6	-11		9	-0
Arts	1	4	9	11		13	10	-2	11	8
Biology and life sciences	19	11	20	5	12	19	13	10	-11	15
Business	23	20	25	23	24	19	20	17	21	34
Communications and journ...	10	2		16	-4	17	5	6		4
Computers, statistics, math	-3	-24	6	7	-0	11	-14		-14	-14
Education	7	8	7	8	9	9	10	15	13	9
Health	24	20	28	26		19	21	8	39	26
Humanities and liberal arts	5	5	3	7	9	10	6	2	14	7
Industrial arts, consumer ser...	12	15		8	8	4	4	8	16	10
Legal, public policy, social...	7	10	34	19		17	12	7	-3	13
Physical sciences	25	26	17	-3		2	7			15
Psychology	12	-4	7	18	10	20	10	3	25	10
Social sciences	15	7	6	11	5	10	11		-4	6
Overall	22	8	18	11	8	12	6	8	14	
# Areas < 5%	3	5	1	1	2	2	3	3	4	
# Areas >= 10%	8	6	5	7	3	10	8	3	7	

Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-9 thru -5	-10 thru -19	<= -20

Area + Gender

- In every area, men with a bachelor's degree have higher median wages than women with a bachelor's degree at five years after graduation, with the largest gaps being in computers, statistics, and math ($24,100); social sciences ($12,500); and architecture and engineering ($10,500).
- Among UT baccalaureates, women tended to gain higher returns than men from earning a master's degree within five years of their UT bachelor's degree (12% vs 10% across all areas of study).
    - Female UT baccalaureates in all areas except architecture and engineering who earned a master's degree within five years of their bachelor's degree saw positive returns, with double-digit returns for those with UT baccalaureates in eight areas: social sciences; psychology; health; physical sciences; industrial arts; legal, public policy, and social work; biology and life sciences; and business.
    - Male UT baccalaureates from ten areas of study who earned a master's degree within five years of their bachelor's degree saw positive returns, with double-digit returns in four areas: psychology; biology and life sciences; business; and health.
    - Women who earned a master's degree saw a greater percent return than men in all but three areas: architecture and engineering; communications and journalism; and health.
    - The areas where women saw a return at least 10 points higher than men were biology and life sciences; computers, statistics, and mathematics; industrial arts; legal, public policy, and social work; and physical sciences.
    - The higher returns on the master's degree help women meet and even exceed median earnings of men with a master's degree. Among those who have earned a master's degree within five years after earning their UT baccalaureate, women with bachelor's degrees in these majors have similar (within $1,000) or even higher median wages than men: arts, biology and life sciences; humanities and liberal arts; industrial arts; physical sciences; and psychology.
    - Despite female UT baccalaureates receiving a higher premium than male UT baccalaureates from earning a master's degree within five years of the UT bachelor's degree, there are six undergraduate areas where women with a master's degrees have median earnings lower than men with a bachelor's degree: agriculture and natural resources; architecture and engineering; arts; computers, statistics, and mathematics; humanities and liberal arts; and social sciences. For example, women with a UT bachelor's degree in social sciences who go on to earn a master's degree within five years have median annual earnings of $58,100 while men with no master's degree have median annual earnings of $65,200.

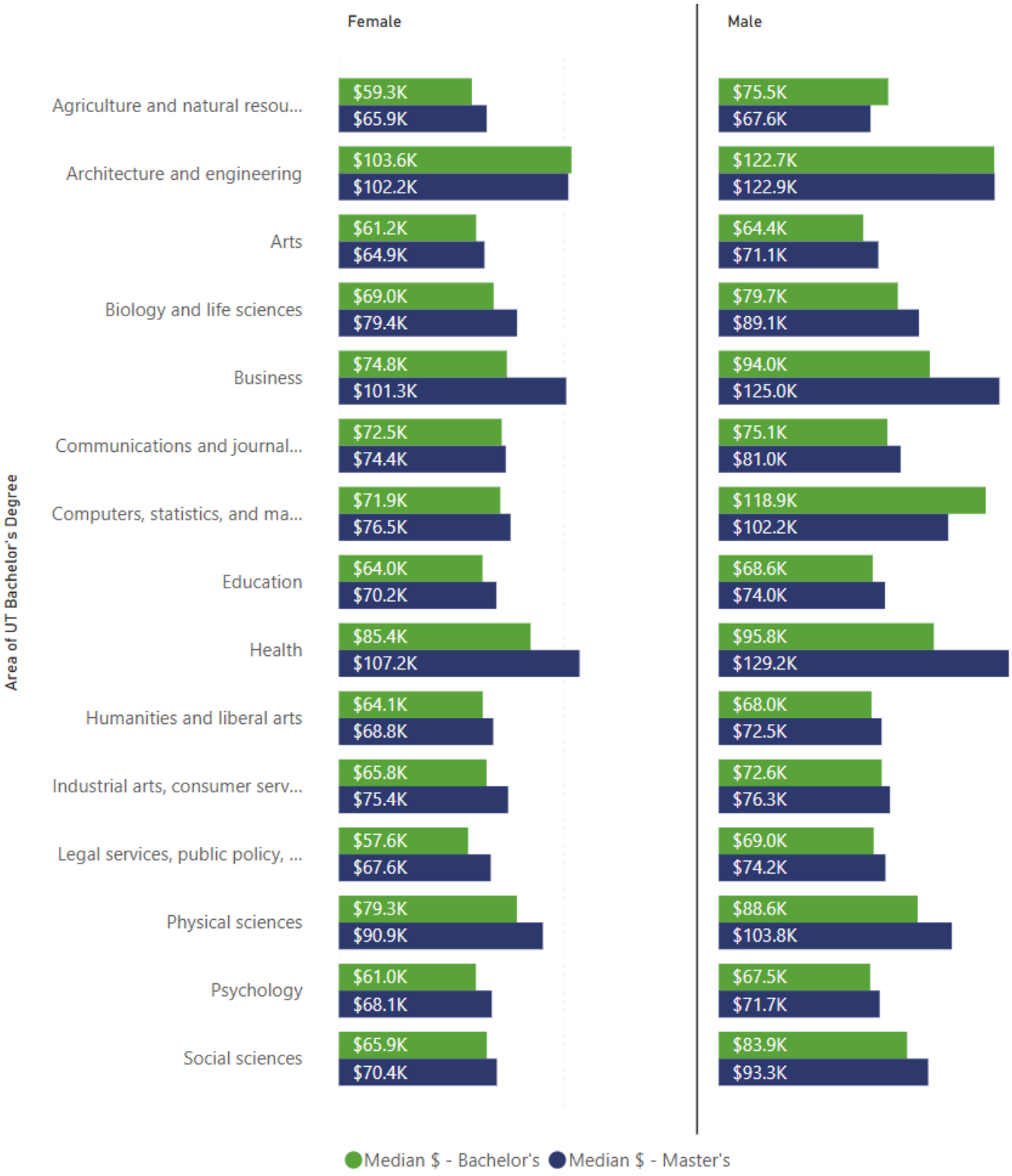
Heat Map: Difference in Annual Wages: Master's Degree versus Baccalaureate Degree, by UT Baccalaureate Area of Study and Gender

	Within Five Years of UT Baccalaureate Degree			Within Ten Years of UT Baccalaureate Degree		
Area of UT Bachelor's Degree	Female % return	Male % return	%age Point Difference FvM	Female % return	Male % return	%age Point Difference FvM
Agriculture and natural res...	4	1	3	11		
Architecture and engineering	-8	-7	-1	-1	0	-1
Arts	1	-6	7	6	10	-4
Biology and life sciences	24	13	11	15	12	3
Business	32	25	7	35	33	2
Communications and journ...	2	9	-7	3	8	-5
Computers, statistics, math	5	-7	12	6	-14	20
Education	8	7	1	10	8	2
Health	14	28	-14	26	35	-9
Humanities and liberal arts	4	-4	8	7	7	0
Industrial arts, consumer ser...	18	0	18	15	5	10
Legal, public policy, social...	19	5	14	17	8	9
Physical sciences	15	5	10	15	17	-2
Psychology	11	10	1	12	6	6
Social sciences	10	1	9	7	11	-4
Overall	12	10		12	14	
# Areas < 5	5	7		2	2	
# Areas >= 10	8	4		9	6	

Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-9 thru -5	-10 thru -19	<= -20

- At ten years after graduation, in every area, men with a UT bachelor's degree have higher median wages than women with a UT bachelor's degree in the same field, with the largest gaps being in computers, statistics, and math ($47,000); business ($19, 200); architecture and engineering ($19,100); and social sciences ($18,000).
- Compared to men, women tended to gain lower returns from earning a master's degree within ten years (12% vs 14% across all areas of study).
    - Female UT baccalaureates in all areas except architecture and engineering who earned a master's degree within ten years saw positive returns, with double-digit returns in nine areas.
    - Male UT baccalaureates from ten areas of study who earned a master's degree within five years of their bachelor's degree saw positive returns in twelve areas, with double-digit returns in six areas.
    - Women who earned a master's degree saw a greater percent return than men in seven areas.
    - Women saw a return at least 10 points higher than men in the areas of computers, statistics, and mathematics and industrial arts.
    - Unlike what is seen at the five-year marker, women with a UT bachelor's degree from any area of study who earned a master's degrees within ten years have lower median salaries than men with a bachelor's degree in the same area. The largest gaps are in computer, statistics, and math ($25,800); business ($23,700); social sciences ($22,900); health ($22,000); and architecture and engineering ($20,700).
    - In summary, at ten years, women with a master's degree have similar (within $1,000) or even lower median wages as men with a bachelor's degree in nine areas of UT baccalaureate study: agriculture and natural resources; architecture and engineering; arts; biology and life sciences; communications and journalism; computers, statistics, and math; humanities and liberal arts; legal services, public policy, and social work; and psychology.

Median Wages for Those Who Earned a Bachelor's Degrees versus a Master's Degrees within Ten Years by UT Baccalaureate Area of Study and Gender



Area + Race/Ethnicity

For UT baccalaureates in architecture and engineering and computers, statistics, and math who go on to earn a master's degree, there are generally low or negative returns for African American, Asian American, Hispanic, and White graduates—both at five and ten years after baccalaureate. Four baccalaureate areas of study—biology and life sciences, business, education, and health—show positive returns for master's degree holders for these four race/ethnicities at both five and ten years after baccalaureate.

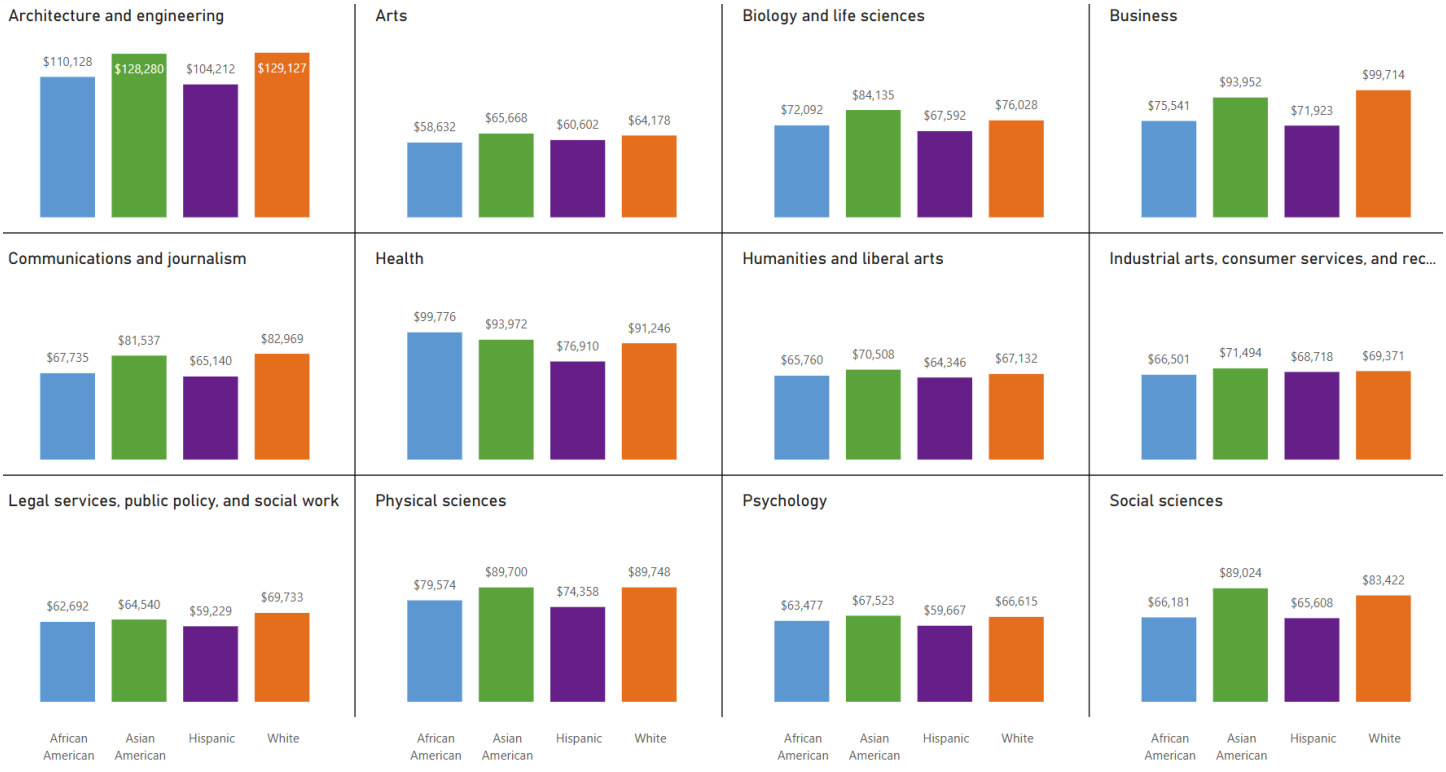
At both five and ten years, African American and Asian American graduates with master's degrees see higher returns in more areas and have fewer areas with low or negative returns than Hispanic and White graduates.

Heat Map: Percent Difference in Annual Wages: Master's Degree versus Baccalaureate Degree, by Area and Race/Ethnicity

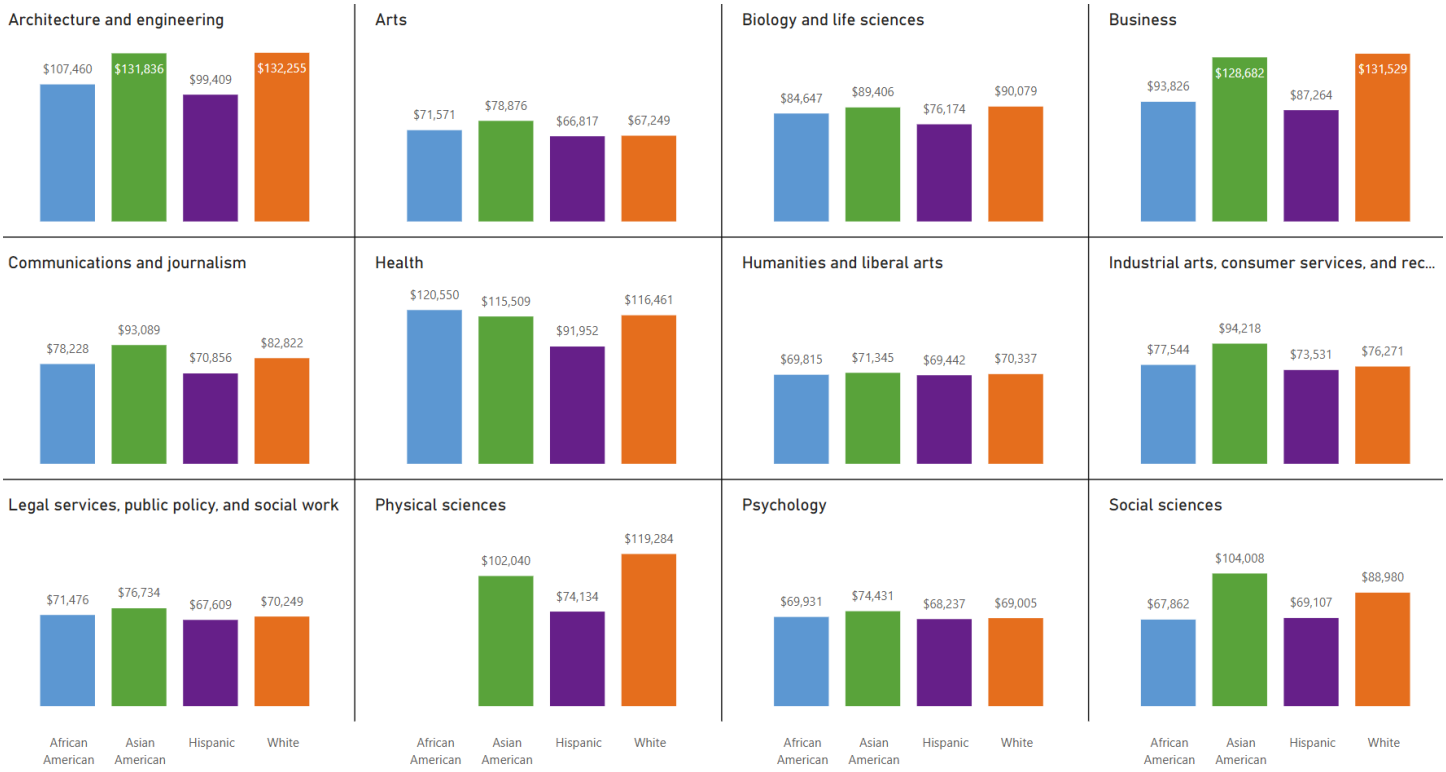
	Within 5 Years				Within 10 Years			
Area of UT Bachelor's Degree	African American	Asian American	Hispanic	White	African American	Asian American	Hispanic	White
Agriculture and natural res...			4	6			1	6
Architecture and engineering	-8	-3	-9	-7	-2	3	-5	2
Arts	29	1	-1	-5	22	20	10	5
Biology and life sciences	19	32	19	16	17	6	13	18
Business	19	27	21	26	24	37	21	32
Communications and journ...	18	8	8	1	15	14	9	-0
Computers, statistics, math	-6	2	-0	-8	-21	-5	3	-16
Education	10	9	8	8	10	7	10	9
Health	19	6	9	21	21	23	20	28
Humanities and liberal arts	7	10	5	-5	6	1	8	5
Industrial arts, consumer ser...	12	23	4	13	17	32	7	10
Legal, public policy, social...	13	18	13	7	14	19	14	1
Physical sciences	15	5	4	17		14	-0	33
Psychology	10	13	14	4	10	10	14	4
Social sciences	12	7	1	5	3	17	5	7
Overall	10	16	8	12	14	20	10	13
# Areas < 5%	2	3	7	6	3	3	4	5
# Areas >= 10%	11	6	4	5	9	9	7	5

Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-9 thru -5	-10 thru -19	<= -20

Median Annual Wage for UT Baccalaureates Ten Years After Bachelor's Degree, by Area of Study and Race/Ethnicity



Median Annual Wage for Those Who Earned a Master's Within Ten Years After UT Bachelor's Degree, by Baccalaureate Area of Study and Race/Ethnicity



A Closer Look: Doctoral Degrees

Earning a doctoral degree is a substantial investment of both time and money, so it is important that the returns reflect that additional investment required. Looking at data from the U.S. Census Bureau and the Bureau of Labor Statistics, the Georgetown University Center on Education and the Workforce (CEW) found that 90% of doctoral degree holders are employed, a small premium over master's degree holders (86%) and eight points higher than baccalaureates (82%). The median earnings of those with a doctoral degree was $126,000 while the median for master's was $92,000, a 37% return. Unlike the stagnate premiums for master's degrees, the premium of a doctorate over a baccalaureate degree has improved from just over 50% in 1993 to 63% in 2021. This is because, unlike earnings for workers with master's degrees, earnings for those with doctoral degrees have grown by nearly 20% in that time (Gulish et al., 2024, pp. 23, 27-28).

Related contextual measures for recipients of doctoral degrees are available from the National Center for Science and Engineering Statistics (NCSES) Survey of Earned Doctorates (SED), which is an annual census survey of all recipients of U.S. research doctoral degrees.[2] In the 2023 survey, 57,862 doctorates were surveyed and 91.2% completed the survey.[3]

Nearly all respondents (98.3%) report first receiving a bachelor's degree. For doctorates in science and engineering fields, 64.3% of recipients report receiving a bachelor's degree in the same field as doctorate. That varies from 38.8% for computer and information sciences to 80.6% for mathematics and statistics. For doctorates in non-science and engineering fields, only 46.0% report receiving a bachelor's degree in the same field, ranging from 25.7% for education to 71.3% in humanities. (SED, Table 5-2)

Most, but not all, respondents earn a master's degree before or as part of their doctorate degree. The NCSES survey indicates that 68.0% of science and engineering doctorate recipients report having earned a master's degree, with 52.2% having earned a master's degree in the same field as the doctorate. However, 93.5% of doctorate recipients in non-science and engineering fields reported having earned a master's degree, with 67.9% having earned a master's degree in the same field as the doctorate. (SED, Table 5-3)

The 2023 SED also indicates that the median years to a research doctorate since starting a doctoral program was 5.7 years. However, this varies by broad field, with areas like business and health sciences taking as little as 5.0 years and areas like social sciences and humanities and arts taking 6 years or more. (SED, Table 1-12)

According to the survey, a higher percentage of science and engineering doctorate recipients reported having no graduate debt (76.8%). For those with debt, the median graduate debt for science and engineering fields is $35,000, with health and psychology being significantly higher and computer and information sciences, engineering, mathematics and statistics, and physical sciences being significantly lower. Of science and engineering doctorate recipients, 11.6% have debt of $30,000 or less and 4.5% have debt above $100,000. For non-science and engineering fields, 59.6% reported having no graduate debt. The median debt for those with graduate debt in non-science and engineering fields was $55,000, with business and visual and performing arts being significantly lower. Of non-science and engineering doctorate recipients, 14.7% have debt of $30,000 or less and 7.8% have debt above $100,000. (SED, Table 4-4)

Nearly three quarters of doctorate recipients in 2023 indicated they had a definite commitment for new employment, a postdoctoral study position, or return to a pre-doctoral position, according to the NCSES Survey of Earned Doctorates. This varied by broad field from lower percentages reporting definite commitments in humanities and arts (65.8%) and biology and life sciences (68.2%) to higher percentages in psychology (80.0%), business (85.9%), and computer and information sciences (78.2%). As seen in the table below, of those with definite commitments for non-postdoc employment, slightly more than one-third were entering the academe, most (46.7%) were entering industry or business, with the remaining being relatively evenly divided among government, nonprofits, and other/unknown sectors. However, non-science and engineering doctorates were far more likely to enter the academe (60.9%) and far less likely to enter the industry/business sector (11.4%). (SED, Table 2-1 and 2-6)

[2] National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2023. Data Tables. Downloaded from https://ncses.nsf.gov/surveys/earned-doctorates/2023#data on March 20, 2025.

[3] National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2023. Methodology. Accessed from https://ncses.nsf.gov/surveys/earned-doctorates/2023#methodology on March 21, 2025.

Postgraduation Commitment of Research Doctorate Recipients and Employment Sector for Definite Postgraduation Commitments for Non-Postdoc Employment in the U.S. by Broad Field, 2023

	% Definite Commitment (employment or training)	Academe	Government	Industry/Business (includes self-employment)	Nonprofit	Other/Unknown (mainly composed of K-12 education)
All Fields	73.6%	34.2%	6.8%	46.7%	6.5%	5.8%
Science & Engineering Total	73.8%	24.2%	7.7%	59.9%	5.9%	2.2%
Agricultural sciences and natural rsrcs	74.5%	31.4%	13.6%	43.8%	7.6%	3.5%
Biological and biomedical sciences	68.2%	22.1%	7.1%	61.6%	7.3%	1.8%
Computer and information sciences	78.2%	21.6%	3.0%	70.3%	3.3%	1.8%
Engineering	73.6%	9.7%	6.1%	79.6%	3.3%	1.3%
Geosciences, atmospheric, ocean sci	77.8%	26.6%	21.8%	42.3%	6.1%	3.1%
Health sciences	74.4%	47.8%	8.2%	27.6%	13.0%	3.3%
Mathematics and statistics	77.5%	27.0%	5.5%	62.7%	2.8%	2.0%
Physical sciences	73.3%	11.5%	4.9%	79.4%	2.8%	1.4%
Psychology	80.0%	38.3%	13.1%	33.2%	10.3%	5.1%
Social sciences	75.4%	50.9%	12.3%	23.1%	10.0%	3.6%
Non-Science & Engineering Total	73.1%	60.9%	4.4%	11.4%	8.1%	15.2%
Business	85.9%	74.3%	3.4%	17.3%	2.5%	2.5%
Education	76.3%	51.4%	4.2%	9.6%	7.8%	27.0%
Humanities and arts	65.8%	68.1%	3.1%	9.0%	10.9%	8.8%
Other non-science and engineering	72.4%	61.3%	8.6%	15.7%	8.9%	5.5%

Source: National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2023. Tables 2-1 and 2-6.

The most important part of receiving any premium first requires completing the doctoral degree. The CEW used data from the Baccalaureate and Beyond Longitudinal Study[4] to examine national completion rates; they found that 56% of students who began a doctorate program within 10 years completed the program, but 78% of those who did not complete the doctoral degree program earned another degree, usually a master's or professional degree (Gulish et al., 2024, p. 26). Although the population in this study is not limited to those who earn their doctorate at a UT System institution, of the 1,208 graduate students in the most-recent (2014) cohort at UT System academic institutions, 70% had completed a doctorate degree within ten years (Texas Higher Education Coordinating Board, AY 2024).

In this section of the report, we compare the earnings outcomes of UT baccalaureates who completed their bachelor's degree between 2006 and 2018 who went on to earn a doctoral degree (from any U.S. institution) versus those UT baccalaureates whose highest degree is a master's degree. The study examines the median annual earnings of UT baccalaureates who are found working in Texas. The difference (i.e., earnings differential) in median wages between the master's degree holder and the doctoral degree holder is a proxy for the financial premium of a doctoral degree. We should interpret these differences with some caution, given that the students who choose to pursue and complete a doctoral degree may differ in meaningful ways from students who do not complete a doctoral degree. However, exploring the differences in earnings outcomes between students who earn doctoral degrees and students who do not provides important insight into the financial outcomes associated with earning a doctoral degree.

The results include breakdowns by UT institution where the baccalaureate was earned, area of baccalaureate study, and various demographic characteristics. As part of the analysis, we examined the results for individual cohort differences. Although there were some variations by cohort, in the main the results were relatively consistent, so we chose not to present that breakdown here. Earnings and earnings differentials for counts less than 20 are not presented.

[4] National Center for Education Statistics, Baccalaureate and Beyond Longitudinal Study. https://nces.ed.gov/surveys/b&b/

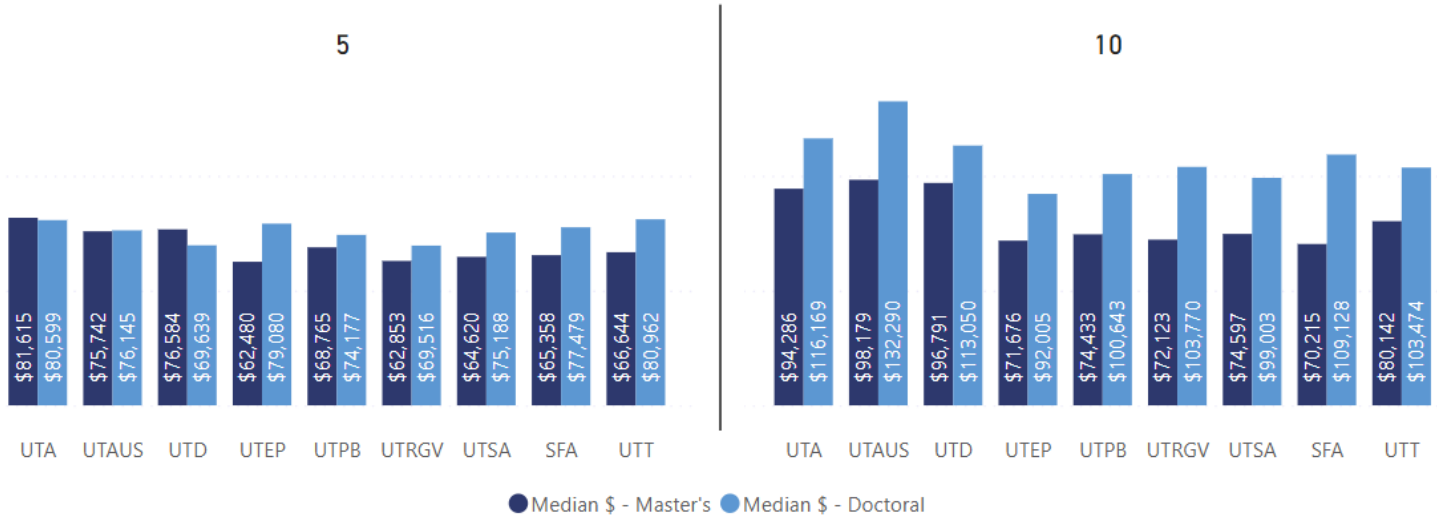
Institution Differences

For UT baccalaureates who went on to earn their doctorate degree within ten years, we see strong returns against those whose highest degree was a master's degree. In fact, the earnings differential versus master's degree holders was at least 33%--and as much as 55%--at UT Austin, UTPB, UTRGV, UTSA, and SFA, with UTA, UTEP, and UTT having earnings differentials of 23-29%.

Difference in Annual Wages: Those with a Master's Degree vs Doctoral Degree, by Institution

	Within Five Years of Baccalaureate Degree				Within Ten Years of Baccalaureate Degree			
Institution	# Master's	# Doctoral	% Wage Difference	$ Wage Difference	# Master's	# Doctoral	% Wage Difference	$ Wage Difference
UTA	8,885	595	-1%	-$1,000	6,434	826	23%	$21,900
UTAUS	10,147	4,946	1%	$400	9,060	5,254	35%	$34,100
UTD	4,906	804	-9%	-$6,900	3,268	825	17%	$16,300
UTEP	4,358	354	27%	$16,600	3,906	444	28%	$20,300
UTPB	811	49	8%	$5,400	659	46	35%	$26,200
UTRGV	5,824	468	11%	$6,700	5,451	516	44%	$31,600
UTSA	5,166	659	16%	$10,600	4,464	768	33%	$24,400
SFA	2,088	98	19%	$12,100	852	60	55%	$38,900
UTT	1,815	126	21%	$14,300	1,520	150	29%	$23,300
	Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-9 thru -5	-10 thru -19	<= -20

Median Wages for Those Who Earned Master's Degrees vs Doctoral Degrees, by Institution



Area Differences

In half of the UT baccalaureate areas of study, the doctoral degree is most frequently in the same broad area. For those areas where it is not, the doctoral degree is in health or legal services, public policy, and social work. For baccalaureates from five areas, at least 40% of those who earned doctoral degrees remain in-field.

Table: Doctoral Degrees of Students Who Left a UT Academic Institution with Bachelor's Degree, 2006-2018

Area of Study	# Doctorates Found	% of Doctorates Found	% Doctorates in Same Field as Bachelor's	For Bachelor's in Field, What is Area of Greatest % for Doctoral Degree (if not same)
Agriculture and natural resources	110	0.4	26.8	
Architecture and engineering	1,049	3.5	47.1	
Arts	99	0.3	32.3	
Biology and life sciences	870	2.9	7.0	Health

Area of Study	# Doctorates Found	% of Doctorates Found	% Doctorates in Same Field as Bachelor's	For Bachelor's in Field, What is Area of Greatest % for Doctoral Degree (if not same)
Business	132	0.4	3.2	Legal services, public policy, social work
Communications and journalism	45	0.2	2.4	Legal services, public policy, social work
Computers, statistics, and mathematics	310	1.0	44.4	
Education	567	1.9	34.7	
Health	13,243	44.7	86.0	
Humanities and liberal arts	382	1.3	7.7	Legal services, public policy, social work
Industrial arts, consumer services, and recreation	55	0.2	1.2	Health
Legal services, public policy, social work	8,445	28.5	83.0	
Physical sciences	619	2.1	39.6	
Psychology	523	1.8	25.5	Health
Social sciences	252	0.9	4.1	Legal services, public policy, social work
Other Area	8	0.0	--	--
Missing/Unknown Area	2930	9.9	--	--

Median Wages

- Examining the broad area of study for UT baccalaureates, the top five areas by median wage for both master's degree holders and doctorates working in Texas are more varied, with social sciences and biology and life sciences making appearances.
- For those who earned doctoral degrees within five years, the earnings are below those whose highest degree is a master's degrees in these baccalaureate areas of study: architecture and engineering; computers, statistics, and mathematics; and health. The earnings are very close in business and physical sciences.
- For those UT baccalaureates from all areas who earned a doctorate within either 10 or 15 years, the earnings are higher than for those whose highest degree is a master's.

Top 5 Areas of Study for UT Baccalaureates by Median Annual Earnings

	5 Years	10 Years	15 Years
Highest Degree = Masters	health	architecture and engineering	architecture and engineering
	business	business	business
	architecture and engineering	health	health
	computers, stats, and math	physical science	physical science
	physical science	computers, stats, and math	computers, stats, and math
Highest Degree = Doctoral	communications and journalism	business	architecture and engineering
	business	architecture and engineering	biology and life sciences
	health	biology and life sciences	business
	Industrial arts, consumer services	physical science	physical science
	social sciences	health	social sciences

Median Wages for Those Who Earned Master's Degrees vs Doctoral Degrees, by Area



Earnings Differential (Doctoral versus Master's Degrees)

Actual values are important, but so is the earnings differential, or the difference between the earnings of UT baccalaureates working in Texas who go on to earn a doctoral degree versus those whose highest degree is a master's.

- At ten years, the range of difference is $7,600 for computers, statistics, and mathematics to $49,000 for communications and journalism, with graduates from ten baccalaureate areas who go on to earn a doctorate having at least a $20,400 premium.
- At fifteen years, it ranges from $12,000 for bachelor's in computers, statistics, and mathematics to $82,200 for biology and life sciences, with graduates from seven baccalaureate areas who go on to earn a doctorate having at least a $31,600 premium.

Difference in Annual Wages: Those with a Master's Degree vs Doctoral Degree, by Area of Study

	Within Five Years of Baccalaureate Degree				Within Ten Years of Baccalaureate Degree			
Area of UT Bachelor's Degree	Master's # (%)	Doctoral # (%)	% Wage Difference	$ Wage Difference	Master's # (%)	Doctoral # (%)	% Wage Difference	$ Wage Difference
Agriculture and natural res...	127	<20	--	--	49	<20	--	--
Architecture and engineering	3,516	291	-19%	-$16,300	2,833	499	17%	$20,400
Arts	983	33	34%	$16,900	901	63	23%	$15,700
Biology and life sciences	2,979	2,514	12%	$7,500	2,281	2,771	63%	$52,300
Business	8,672	632	2%	$1,400	6,459	658	25%	$28,400
Communications and journ...	1,154	411	54%	$32,700	1,268	410	64%	$49,000
Computers, statistics, math	1,400	60	-13%	-$10,600	1,020	131	8%	$7,600
Education	3,347	55	4%	$2,900	4,236	117	14%	$10,100
Health	7,048	327	-10%	-$9,400	4,695	414	17%	$18,600
Humanities and liberal arts	3,455	1,043	34%	$19,200	3,673	1,120	60%	$42,200
Industrial arts, consumer ser...	2,102	729	28%	$17,900	1,487	594	30%	$22,700
Legal, public policy, social...	2,757	150	20%	$11,700	1,667	111	32%	$22,300
Physical sciences	780	172	1%	$700	496	253	36%	$34,800
Psychology	3,552	315	37%	$19,900	2,510	453	37%	$25,400
Social sciences	2,128	1,359	31%	$19,100	2,039	1,286	46%	$36,200
Scale:		>=20	10 thru 19	5 thru 9	-4 thru 4	-9 thru -5	-10 thru -19	<= -20

	Within Fifteen Years of Baccalaureate Degree			
Area of UT Bachelor's Degree	Master's # (%)	Doctoral # (%)	% Wage Difference	$ Wage Difference
Agriculture and natural res...	<20	<20	--	--
Architecture and engineering	1,112	228	27%	$40,300
Arts	322	35	39%	$28,000
Biology and life sciences	858	962	88%	$82,200
Business	2,465	285	27%	$33,500
Communications and journ...	601	167	37%	$31,600
Computers, statistics, math	412	61	14%	$14,500
Education	1,933	61	16%	$12,000
Health	1,198	126	17%	$18,600
Humanities and liberal arts	1,535	537	70%	$52,900
Industrial arts, consumer ser...	509	199	25%	$19,900
Legal, public policy, social...	538	48	21%	$15,300
Physical sciences	151	104	40%	$42,100
Psychology	873	212	61%	$44,800
Social sciences	839	521	53%	$46,800

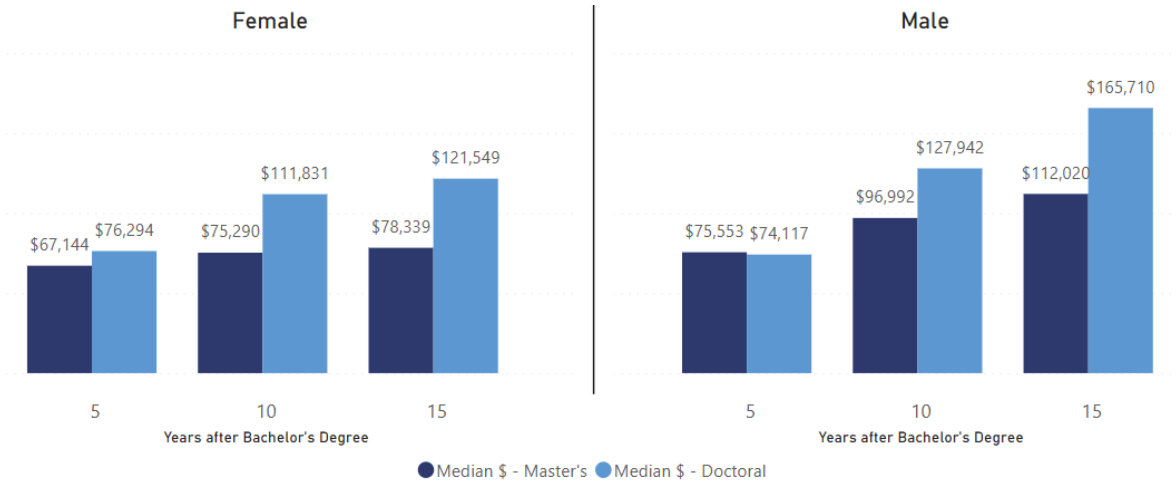
Gender Differences

Female graduates with doctoral degrees see higher rates of return then male graduates, but their median wages are significantly below those for men with doctoral degrees at ten and fifteen years out, although women with a doctorate do have higher median annual earnings than men whose highest degree is a master's. At all three time points, women are around 63% of the master's degree holders while men are around 37%. For doctorates, it is more evenly split.

Difference in Annual Wages: Those with a Master's Degree vs Doctoral Degree, by Gender

	Female				Male			
Within	Master's # (%)	Doctoral # (%)	% Wage Difference	$ Wage Difference	Master's # (%)	Doctoral # (%)	% Wage Difference	$ Wage Difference
5 Years	28,067	4,262	14%	$9,100	15,933	3,837	-2%	-$1,400
10 Years	22,590	4,542	49%	$36,500	13,024	4,347	32%	$31,000
15 Years	8,436	1,819	55%	$43,200	4,917	1,729	48%	$53,700

Median Wages for Those Who Earned Master's Degrees vs Doctoral Degrees, by Gender



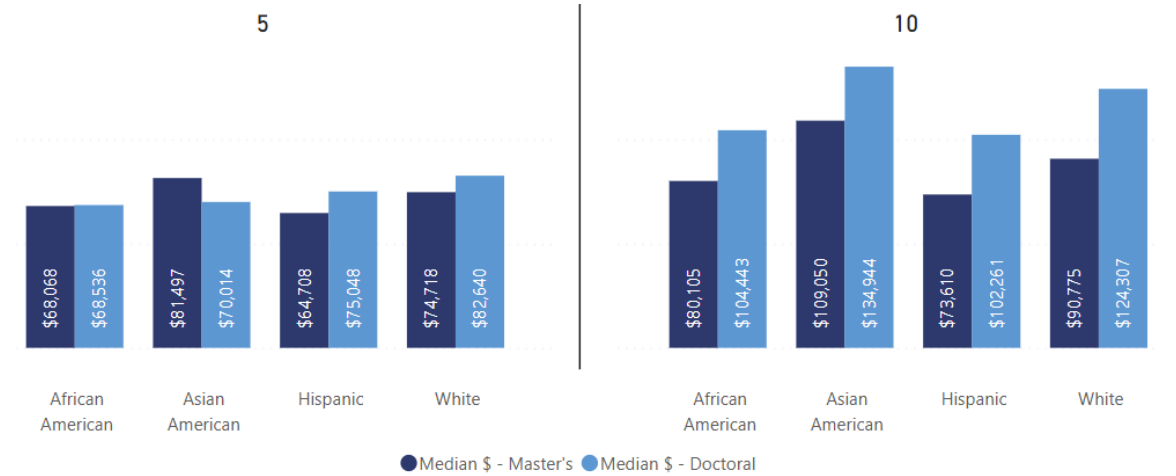
Race/Ethnicity Differences

- UT African American baccalaureates who earn a doctorate within five years see little return compared to a master's degree, and they have the lowest median wages. For doctorates earned within ten years, African American graduates see the third-highest rate of return, but that is still the lowest actual dollar amount.
- Asian Americans who earn a doctorate within five years see a negative return compared to a master's degree, with median wages falling below those for graduates with a master's degree. For doctorates earned within ten years, Asian American graduates see the lowest rate of return (24%), but they have the highest median wage at nearly $135,000.
- Hispanic graduates who earn a doctorate within five years have the largest rate of return and the greatest difference in actual median wages compared to Hispanics with a master's degree. They also have the greatest rate of return at ten years, although their median wages are the lowest.
- White graduates with a doctorate within five years see a 11% return and have the highest median wages. At ten years out, White doctorates see the second-highest rate of return and the highest dollar amount, although their actual median wages are second-highest median wage.

Difference in Annual Wages: Those with a Master's Degree vs Doctoral Degree, by Race/Ethnicity

	Within Five Years of Baccalaureate Degree				Within Ten Years of Baccalaureate Degree			
Institution	Master's # (%)	Doctoral # (%)	% Wage Difference	$ Wage Difference	Master's # (%)	Doctoral # (%)	% Wage Difference	$ Wage Difference
African American	4,021	373	1%	$500	2,953	479	30%	$24,300
Asian American	4,513	1,908	-14%	-$11,500	3,262	1,970	24%	$25,900
Hispanic	16,368	1,894	16%	$10,300	14,038	2,038	39%	$28,700
White	16,946	3,663	11%	$7,900	13,888	4,165	37%	$33,500

Median Wages for Those Who Earned Master's Degrees vs Doctoral Degrees, by Race/Ethnicity



Intersection with Area of Study (of the Bachelor's Degree)

The area of agriculture and natural resources is excluded from the intersection portion because of small counts.

Area + Institution (of the Bachelor's Degree)

Not every institution offers doctoral programs in all areas, or some (particularly new) programs may have low counts of graduates. But for where there is reportable data, there are some trends.

- UT graduates who earned their bachelor's degree in biology and life sciences and then their doctoral degree within either five or ten years after their baccalaureate see positive returns versus those whose highest degree is a master's at all institutions, including UTPB (not shown below). For those biology baccalaureates who earned their doctoral degree within ten years, those returns range from 42% at UT Dallas to 98% at UT Tyler.
- UT graduates with bachelor's degrees in health, industrial arts, and social sciences who earned a doctoral degree within five or ten years also saw positive returns versus master's degree, and the returns on a doctoral degree versus a master's degree for bachelor's degrees in psychology and the humanities were positive except for one instance.

Heat Map: Percent Difference in Annual Wages: Those Who Earned a Master's Degree vs Doctoral Degree Within Five or 10 Years, by Baccalaureate Area of Study and Institution

Baccalaureate Institution	UTA		AUS		UTD		UTEP		UTRGV		UTSA		UTT	
Years Since Baccalaureate	5	10	5	10	5	10	5	10	5	10	5	10	5	10
Area of UT Bachelor's Degree														
Architecture and engineering		0	-29	5		4		-14						
Arts			67	34										
Biology and life sciences	29	53	5	52	16	42	47	54	5	78	33	65	43	98
Business	4	10	-6	15	-10	-11	2	22		15	5	6		
Communications and journ...			54	59							21			
Computers, statistics, math			-16	5		-30								
Education		5		18		35								
Health	26	11	8	33	9			21	39	38				14
Humanities and liberal arts	6	20	35	72	57	43	40	18		-5	33	29		
Industrial arts, consumer ser...	30	21	16	23			65	41	35		28	33	34	18
Legal, public policy, social...	5	26							14		24	18		
Physical sciences			-21	14				62	10	133				
Psychology		36	34	54	31	9		-1			30	37		
Social sciences	14	19	28	37	22	31	42	27	40	29	36	26		
# Areas < 5%	1	1	4	0	1	3	1	2	0	1	0	0	0	0
# Areas >= 20%	3	5	5	8	3	4	4	6	3	4	7	5	2	1
Scale:	>=20		10 thru 19		5 thru 9		-4 thru 4		-9 thru -5		-10 thru -19		<= -20	

Area + Gender

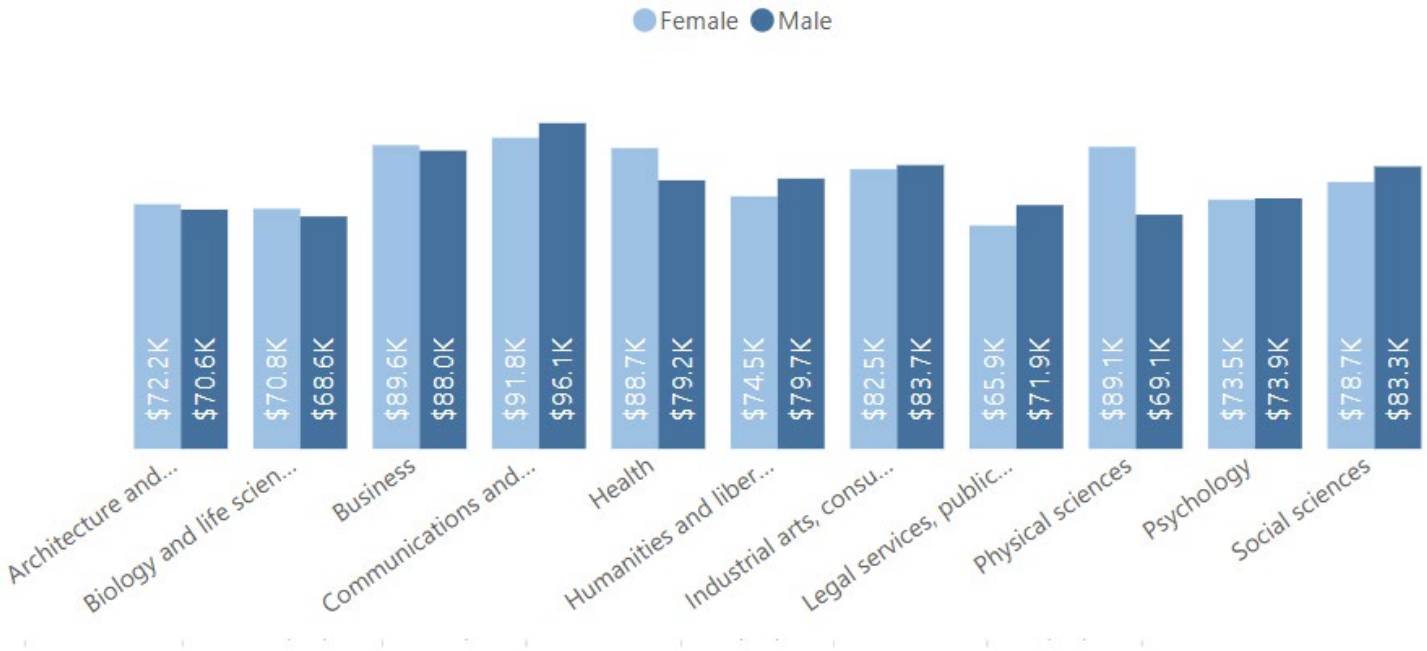
- Women who earned a doctoral degree within five years of their baccalaureate saw positive returns in more areas than men who earned a doctoral degree.
- Women with bachelor's degrees in architecture and engineering or health who go on to earn a doctoral degree within five years see negative returns. Men who earned bachelor's degrees in those two areas plus business; computers, statistics, and math; and physical sciences who go on to earn a doctoral degree within five years also see negative returns.
- Women and men who earned a doctorate within five years and saw positive returns earned their bachelor's degrees in seven areas: biology and life sciences; communications and journalism; humanities and liberal arts; industrial arts; legal services and social work; psychology; and social sciences. However, men with bachelor's degrees in all but two of these—psychology (equal) and social sciences—see even higher returns from doctoral degrees earned in five years.
- Looking at the median wages, women with a doctoral degree have higher median wages than men in five of the eleven areas of their bachelor's degrees where they both have reportable wages: slightly higher for bachelor's degrees in architecture and engineering, biology and life sciences, and business and significantly higher for health and physical sciences.

Difference in Annual Wages: Those with a Master's Degree vs Doctoral Degree Within 5 Years, by Baccalaureate Area of Study and Gender

	Female				Male				FvM	FvM
Area of UT Bachelor's	# Master's	# Doctoral	% Difference	$ Difference	# Masters	# Doctoral	% Difference	$ Difference	%age pt Difference	$ Difference
Arch and engineering	834	86	-9%	-$7,300	2,682	205	-22%	-$19,800	13	$12,400
Arts	530	23	32%	$15,800	453	<20	--	--	--	--
Biology, life sciences	1,842	1,363	12%	$7,700	1,137	1,151	14%	$8,300	-2	-$600
Business	4,427	267	7%	$5,800	4,245	365	-4%	-$3,200	11	$9,000
Comms and journ...	851	277	52%	$31,300	303	134	54%	$33,700	-2	-$2,400
Computers, stats, math	438	<20	--	--	962	45	-20%	-$17,000	--	--
Education	2,840	36	5%	$3,000	507	<20	--	--	--	--
Health	5,977	238	-5%	-$4,700	1,071	89	-30%	-$34,700	25	$30,000
Humanities, liberal arts	2,312	539	30%	$17,100	1,143	504	42%	$23,600	-12	-$6,500
Industrial arts, cons...	1,434	461	27%	$17,300	668	268	31%	$19,700	-4	-$2,400
Legal srvcs, social work	2,231	87	14%	$8,300	526	63	22%	$12,900	-8	-$4,600
Physical sciences	287	75	27%	$19,200	493	97	-2%	-$1,800	29	$20,900
Psychology	2,876	215	37%	$20,000	676	100	37%	$20,100	0	-$100
Social sciences	1,110	576	36%	$20,700	1,018	783	26%	$17,200	10	$3,400

Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-9 thru -5	-10 thru -19	<= -20

Median Wage for Those Who Earned a Doctoral Degree within 5 Years, by Baccalaureate Area of Study and Gender

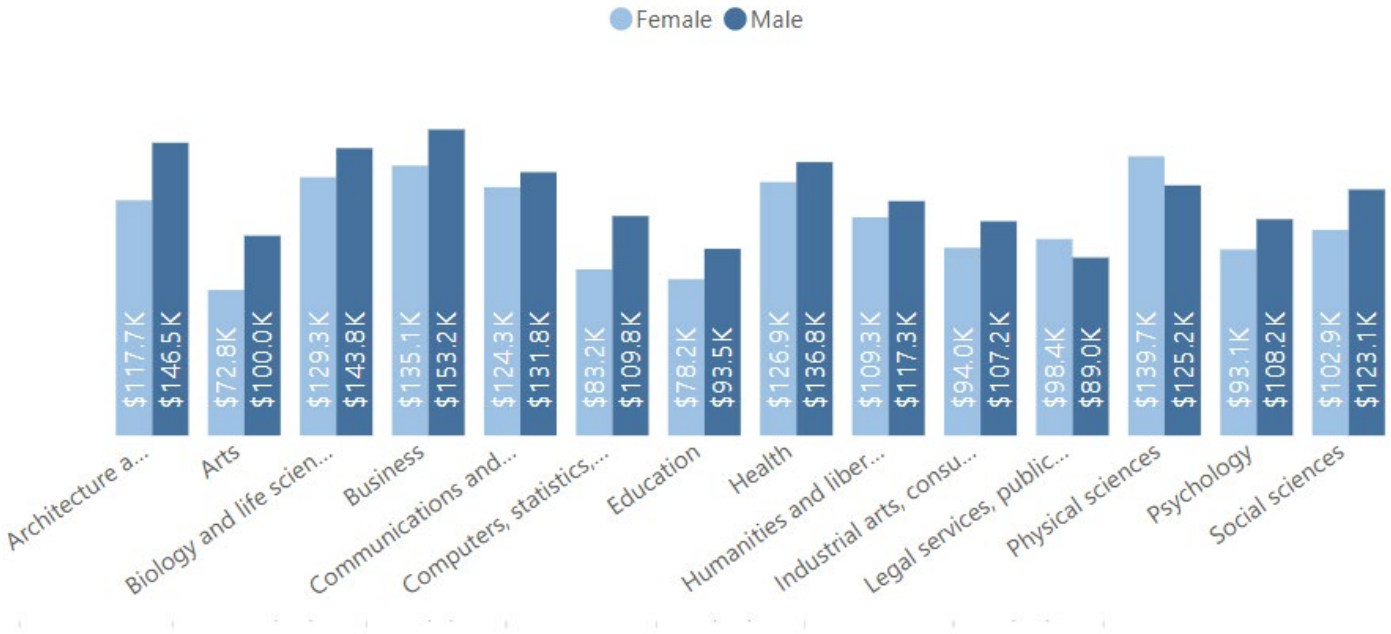


- Both men and women who earned a doctoral degree within ten years of their baccalaureate saw positive returns in all 14 areas.
- Women see higher rates of return than men in five areas of baccalaureate study: business, health, legal services/social work, physical sciences, and social sciences. Women and men see similar rates of return in five areas of baccalaureate study: architecture and engineering, biology and life sciences, communications and journalism, computers/statistics/math, and humanities and liberal arts. Men see higher rates of return than women in four areas of baccalaureate study: arts, education, industrial arts, and psychology.
- It is worth noting that in three areas where women with doctoral degrees saw similar but higher rates of return (2 to 4 points higher) compared to men with doctoral degrees, the actual dollar amount was below that of men.
- Add to that the fact that the median annual wage for women with a doctoral degree is less than the median annual wage for men with doctoral degrees in all but two areas: legal services/social work and physical sciences.

Difference in Annual Wages: Those with a Master's Degree vs Doctoral Degree Within 10 Years, by Baccalaureate Area of Study and Gender

	Female				Male				FvM	FvM
Area of UT Bachelor's Degree	# Master's	# Doctoral	% Difference	$ Difference	# Masters	# Doctoral	% Difference	$ Difference	% point Difference	$ Difference
Arch and engineering	583	122	15	$15,500	2,250	377	19	$23,700	-4	-$8,100
Arts	488	41	12	$7,900	413	22	41	$28,900	-29	-$21,000
Biology, life sciences	1,428	1,443	63	$49,900	853	1,328	61	$54,600	2	-$4,800
Business	3,195	284	33	$33,800	3,264	374	23	$28,200	10	$5,600
Comms and journ...	891	275	67	$49,900	377	135	63	$50,800	4	-$800
Computers, stats, math	363	36	9	$6,700	657	95	7	$7,600	2	-$900
Education	3,670	83	11	$8,000	566	34	26	$19,400	-15	-$11,400
Health	4,011	316	18	$19,600	684	98	6	$7,600	12	$12,100
Humanities, liberal arts	2,387	574	59	$40,500	1,286	546	62	$44,800	-3	-$4,301
Industrial arts, cons...	967	363	25	$18,600	520	231	41	$30,900	-16	-$12,300
Legal srvcs, social work	1,296	54	45	$30,700	371	57	20	$14,800	25	$15,900
Physical sciences	190	96	54	$48,800	306	157	21	$21,400	33	$27,500
Psychology	2,019	315	37	$25,000	491	138	51	$36,500	-14	-$11,600
Social sciences	1,073	535	46	$32,500	966	751	32	$29,900	14	$2,700
Scale:	>=20	10 thru 19		5 thru 9	-4 thru 4		-9 thru -5		-10 thru -19	<= -20

Median Wage for Those Who Earned a Doctoral Degree within 10 Years, by Baccalaureate Area of Study and Gender



Area + Race/Ethnicity

- Compared to those who earned a master's at five years, African Americans who earned a doctoral degree within five years of baccalaureate showed positive returns in 6 of 8 areas of baccalaureate study. The lowest returns were for those who earned their bachelor's degrees in business and health and the highest returns were for those who earned their bachelor's degrees in psychology and industrial arts.
- For Asian Americans with a doctoral degree, there were significant negative returns in three areas of baccalaureate study: architecture and engineering, business, and health. The highest returns were for those who had earned bachelor's degrees in psychology and physical sciences.
- For Hispanic doctorates, there were positive returns in all areas of bachelor's degrees, with the lowest being in health, business, and physical sciences and the highest being in architecture and engineering and social sciences.
- White doctorates had the most areas of baccalaureate study with negative returns versus a master's: architecture and engineering; computers, statistics, and math; health; and physical sciences. But they also saw the highest returns, with the highest being for those who had earned their bachelor's degrees in communications and journalism, arts, and humanities and liberal arts, which were all over 50%.

Difference in Annual Wages: Those with a Master's Degree vs Doctoral Degree Within 5 Years, by Baccalaureate Area of Study and Race/Ethnicity

	African American		Asian American		Hispanic		White	
Area of UT Bachelor's Degree	$ Difference	% Difference	$ Difference	% Difference	$ Difference	% Difference	$ Difference	% Difference
Architecture and engineering			-$28,900	-30%	$37,100	47%	-$20,800	-22%
Arts							$28,900	59%
Biology and life sciences	$9,000	15%	$9,100	15%	$9,700	16%	$4,500	7%
Business	-$9,100	-12%	-$26,000	-27%	$5,400	7%	$10,000	10%
Communications and journ...	$6,300	10%	$7,900	12%	$17,000	29%	$45,500	71%
Computers, statistics, math							-$17,500	-20%
Education							$3,900	6%
Health	-$3,000	-3%	-$22,100	-24%	$1,900	2%	-$14,300	-13%
Humanities and liberal arts	$6,800	12%	$10,300	18%	$11,500	19%	$30,400	56%
Industrial arts, consumer ser...	$10,600	17%	$13,000	19%	$21,500	35%	$15,700	23%
Legal, public policy, social...					$14,600	26%	$11,300	19%
Physical sciences			$17,400	26%	$4,800	7%	-$5,100	-6%
Psychology	$10,500	19%	$16,800	30%	$17,300	32%	$22,700	43%
Social sciences	$3,900	7%	$5,900	8%	$20,000	37%	$25,800	39%

Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-9 thru -5	-10 thru -19	<= -20

Difference in Annual Wages: Those with a Master's Degree vs Doctoral Degree Within 10 Years, by Baccalaureate Area of Study and Race/Ethnicity

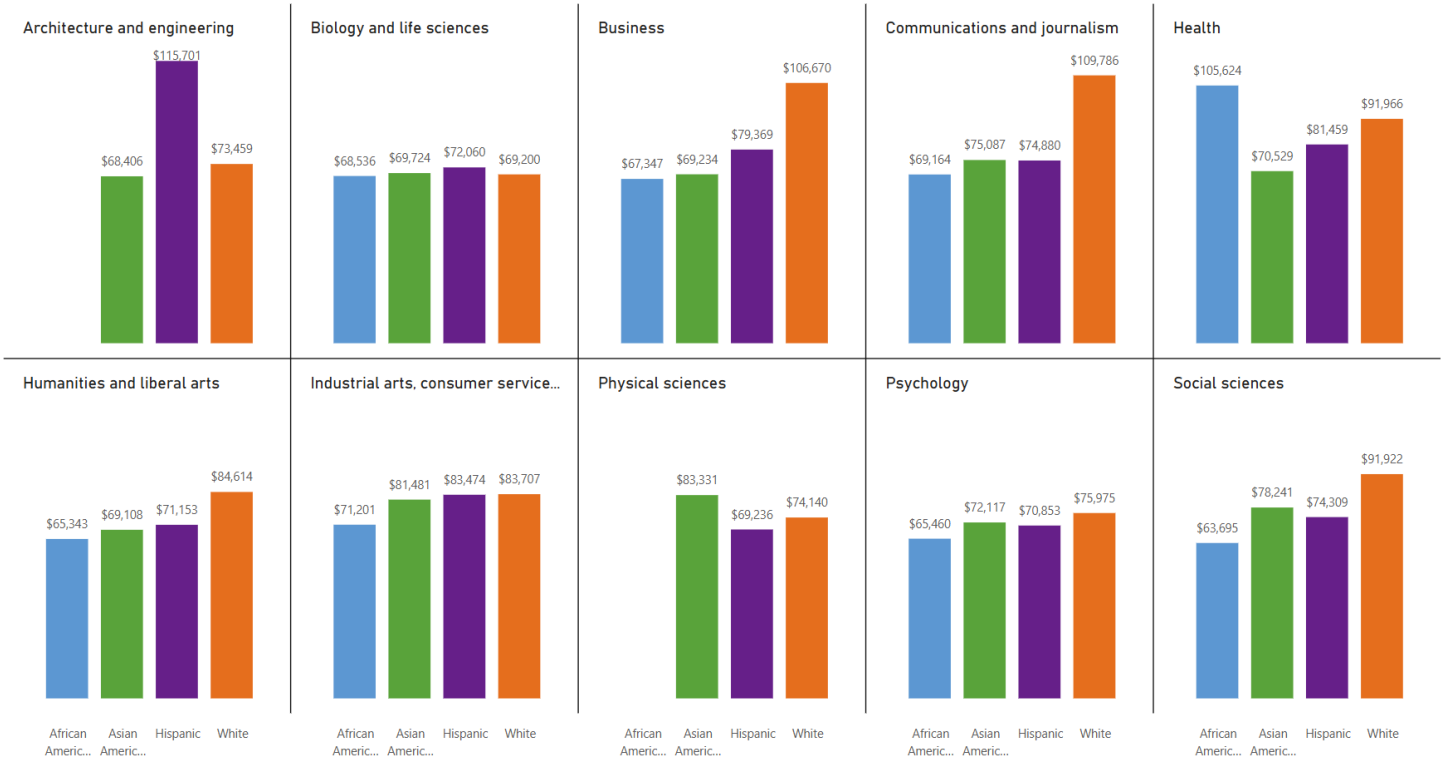
	African American		Asian American		Hispanic		White	
Area of UT Bachelor's Degree	$ Difference	% Difference	$ Difference	% Difference	$ Difference	% Difference	$ Difference	% Difference
Architecture and engineering			$40,300	31%	-$4,500	-4%	$7,300	6%
Arts							$20,600	31%
Biology and life sciences	$57,200	68%	$46,800	52%	$6,400	84%	$39,400	44%
Business	$6,700	7%	$22,600	18%	$17,100	20%	$26,000	20%
Communications and journ...	$21,900	28%	$15,300	16%	$18,300	26%	$64,600	78%
Computers, statistics, math					$12,900	16%	-$5,600	-5%
Education					$4,600	7%	$12,500	18%
Health	$13,000	11%	$15,800	14%	$27,100	29%	$11,800	10%
Humanities and liberal arts	$19,600	28%	$61,700	87%	$14,000	20%	$51,700	74%
Industrial arts, consumer ser...	$24,400	31%	$19,300	21%	$20,800	28%	$22,300	29%
Legal, public policy, social...					$25,400	38%	$29,900	43%
Physical sciences			$41,100	40%	$59,400	80%	$6,300	5%
Psychology	$33,800	48%	$35,600	48%	$21,300	31%	$25,500	37%
Social sciences	$29,200	43%	$19,400	19%	$26,500	38%	$37,900	43%

Scale:	>=20	10 thru 19	5 thru 9	-4 thru 4	-9 thru -5	-10 thru -19	<= -20

- Returns for those who earned their doctorate versus master's degree within 10 years are generally higher.
- For African Americans, the returns range from 7% for those with a bachelor's degree in business to 68% in for those who had earned their bachelor's degree in biology and life sciences, with returns greater than 20% in six of eight areas of baccalaureate study.
- Returns for Asian Americans range from 14% for those who earned bachelor's degrees in health to 87% for those who earned bachelor's degrees in humanities, with returns greater than 20% in six out of ten areas of baccalaureate study.
- Hispanic doctorates with bachelor's degrees in architecture and engineering saw slight negative returns, with returns over 80% for those with bachelor's degrees in physical sciences and biology and life sciences. Returns were over 20% in ten of thirteen areas of baccalaureate study.
- Returns for White graduates with a doctorate range from -5% for those with bachelor's degrees in computers, statistics, and math to more than 70% for those who had earned a bachelor's degree in communications and journalism and humanities and liberal arts. What graduates saw returns of more than 20% in nine out of fourteen areas of baccalaureate study.

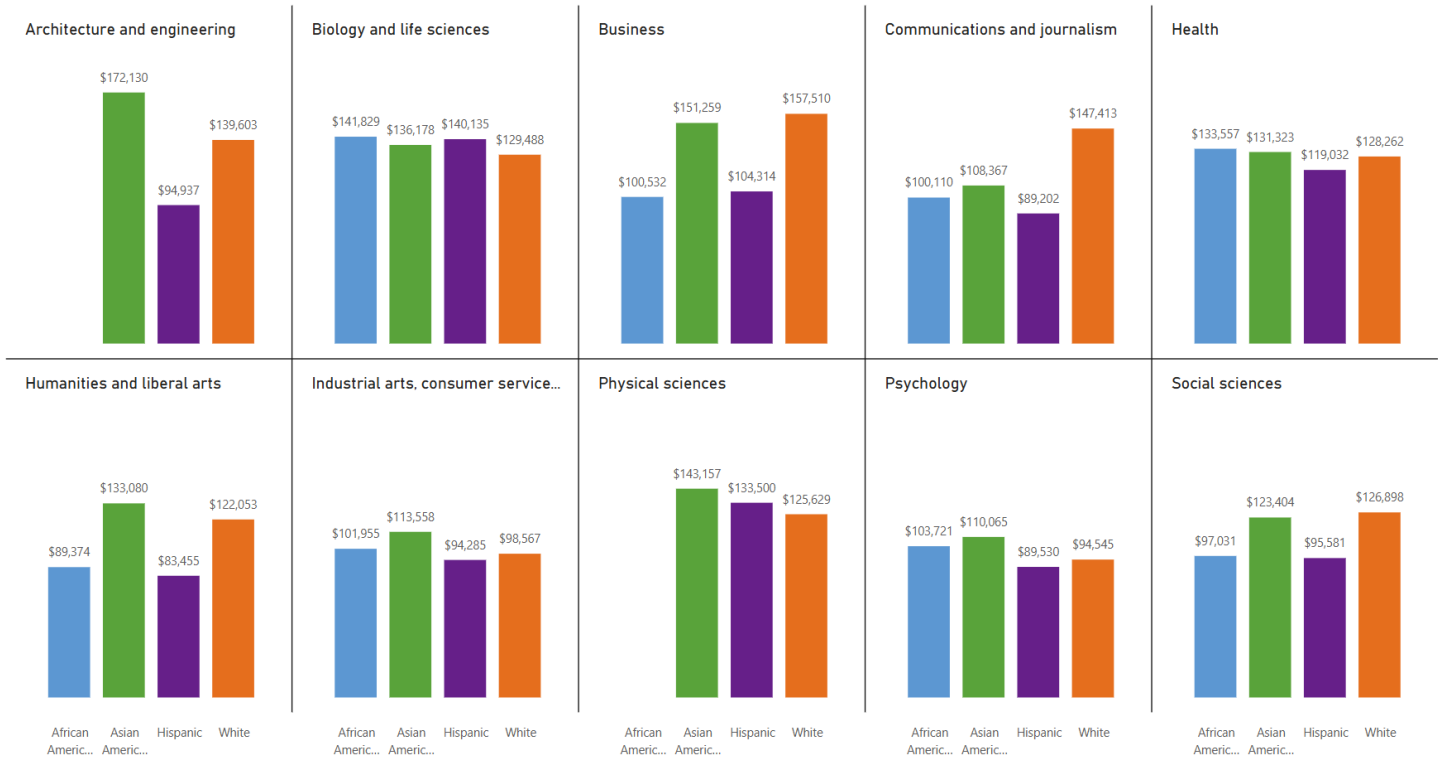
Median Wage for Those with a Doctoral Degree within Five Years of Baccalaureate, by Area and Race/Ethnicity

for areas where there is reportable data for at least three races



Median Wage for Those with a Doctoral Degree within Ten Years of Baccalaureate, by Area and Race/Ethnicity

for areas where there is reportable data for at least three races



Conclusion

For UT baccalaureates whose highest degree is a master's, the returns are generally positive compared to those with highest degree of bachelor's, but the results vary based on gender, race/ethnicity, and, most importantly, area of baccalaureate study. On average, for those who received a bachelor's degree in communications and journalism or computers, statistics, and mathematics, for example, there is limited or even negative outcomes to earning a master's degree.

For UT baccalaureates who earned their doctorate within five years of their bachelor's degree, the returns are mixed compared to those who earned a master's degree or whose highest degree is a bachelor's degree. However, for UT baccalaureates who earn a doctorate within 10 or 15 years, the earnings differential is substantial, compared to those with highest degrees of either bachelor's or master's. This disparity between the outcomes for those at five years versus later may be due to the timing and less time in the workforce. In the long run, with both the degree and time in their career, doctoral degree holders see strong returns on their investment. Like a master's degree, however, a doctoral degree for those who earned their bachelor's degree in computers, statistics, and mathematics does not appear to provide a positive financial gain on average.

Financial returns are not the only impact of a graduate degree, of course, but given rising program costs for students, they must be considered as part of a student's decision-making process.

Occupation or job title is missing from this analysis because it is not available in the data. Recent legislation has ordered an expansion in the required fields for Texas Workforce Commission Unemployment Insurance wage reports submitted to the state. These new fields will hopefully allow for a more nuanced analysis of employment outcomes, but these changes will take several years to roll out, be adopted, and then become available for study. Additionally, the new data will only be available going forward, so longitudinal analyses will be limited.

Methodology and Sources

Methodology

The initial population is based on students exiting a University of Texas System academic institution with a bachelor's degree between 2006 and 2018. This data is provided by the Texas Higher Education Coordinating Board (THECB) Graduation Report. Those students were then tracked across time using THECB data as well as data from the National Student Clearinghouse to look for students earning graduate degrees within five, ten, or fifteen years after earning their bachelor's degree. At five, ten, and fifteen years, after exiting with their baccalaureate, individuals are put into one of three categories based on their highest degree at that point: bachelor's, master's, or doctorate.

This degree data is at that point combined with earnings data, provided by the Texas Workforce Commission Unemployment Insurance wage data through a data sharing agreement with The University of Texas System. An individual's wage (if present) is included in the calculation of median wage.

	5 Years	10 Years	15 Years
2006	✓	✓	✓
2007	✓	✓	✓
2008	✓	✓	✓
2009	✓	✓	
2010	✓	✓	
2011	✓	✓	
2012	✓	✓	
2013	✓	✓	
2014	✓		
2015	✓		
2016	✓		
2017	✓		
2018	✓		

Sources

- Texas Higher Education Coordinating Board Graduation Report (CBM 009)
- Texas Workforce Commission Unemployment Insurance wage data
- National Student Clearinghouse
- Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System

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