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# COLLEGE MAJORS, UNEMPLOYMENT AND EARNINGS

# NOT ALL COLLEGE DEGREES ARE CREATED EQUAL

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# College Majors, Unemployment and Earnings

Not all college degrees are created equal

The question, as we slowly dig out from under the wreckage left by the Great Recession, is unavoidable: "Is college worth it?" Our answer: "Yes, extensive research, ours included, finds that a college degree is still worth it." A Bachelor's degree is one of the best weapons a job seeker can wield in the fight for employment and earnings. And staying on campus to earn a graduate degree provides safe shelter from the immediate economic storm, and will pay off with greater employability and earnings once the graduate enters the labor market. Unemployment for students with new Bachelor's degrees is an unacceptable 8.9 percent,<sup>1</sup> but it's a catastrophic 22.9 percent for job seekers with a recent high school diploma-and an almost unthinkable 31.5 percent for recent high school dropouts.

<sup>1</sup>The combined unemployment rate for both recent college graduates and experienced Bachelor's degree holders is 5 percent.

#### Here is a look at several factors that current and future college students should consider as they choose their courses:

The risk of unemployment among recent college graduates depends on their major. The unemployment rate for recent graduates is highest in Architecture (13.9 percent) because of the collapse of the construction and home building industry in the recession. Unemployment rates are generally higher in non-technical majors, such as the Arts (11.1 percent), Humanities and Liberal Arts (9.4 percent), Social Science (8.9 percent)<sup>1</sup> and Law and Public Policy (8.1 percent).

Unemployment in majors related to computers and mathematics vary widely depending on the technical and scientific content of the major. Employers are still hiring technical computer specialists who can write software and invent new applications. But for information specialists who use software to manipulate, mine, and disseminate information, hiring slows down in recessions. We can see the difference in unemployment between people who invent computer technology as opposed to people who use computer technology. The unemployment rate for recent college graduates in Information Systems has spiked to 11.7 percent, while the rates for majors in Computer Science and Mathematics are 7.8 percent and 6.0 percent, respectively.

**Computer majors are likely to bounce back strongly as the recovery proceeds.** For example, the unemployment rate for recent college graduates who major in information systems is a hefty 11.7 percent, but only 5.4 percent for experienced workers who major in Information Systems.

The Education, Healthcare, Business and Professional Services industries have been the most stable employers for recent college graduates. Unemployment rates are relatively low (5.4 percent) for recent college students who majored in Healthcare and Education because these majors are attached to stable or growing industry sectors. Recent graduates in Psychology and Social Work have relatively low unemployment rates (7.3 percent) nearly half work in Healthcare and Education. The same is true for unemployment among recent college graduates who majored in the Life and Physical Sciences (7.7 percent). More than 60 percent of these recent college graduates who are working have landed in the Healthcare, Professional Contracting Businesses or Education sectors.

Business majors have low unemployment rates (7.4 percent) with the exception of those who specialize in Hospitality Management (9.1 percent), which is hampered by the ongoing slump in Travel and Tourism. Similarly, recent graduates in Engineering do relatively well (7.5 percent unemployment), except for Civil and Mechanical Engineers who are still suffering from the deep dive in manufacturing and construction activity.

UNEMPLOYMENT IN MAJORS RELATED TO COMPUTERS AND MATHEMATICS VARY WIDELY DEPENDING ON THE TECHNICAL AND SCIENTIFIC CONTENT OF THE MAJOR. Majors that are more closely aligned with particular occupations and industries tend to experience lower unemployment rates. Majors such as Healthcare, Education and those related to technical occupations tend to have lower unemployment rates than more general majors, like Humanities and Liberal Arts, where graduates are broadly dispersed across occupations and industries. Unemployment rates for recent graduates in Healthcare and Education are 5.4 percent compared to 9.4 percent for people who majored in Humanities and the Liberal Arts. More than three out of four people who major in Education work in the Education industry while no more than 20 percent of Liberal Arts graduates are concentrated in any single industry.

#### At the same time, majors that are closely aligned with occupations and industries can misfire.

For example, tying oneself to a particular major can be a problem if the associated occupations or industries collapse. Unemployment rates for recent college graduates who majored in Architecture start high at 13.9 percent and, due to its strong alignment with the collapse in construction and housing, unemployment remains high even for experienced college graduates at 9.2 percent.

As the recovery proceeds and recent college graduates gain access to work, especially in their major fields, their unemployment rates will drop substantially. Employment patterns among experienced workers who have been out of college for a while suggest that recent graduates will fare better as the recovery continues. With the exception of majors in Architecture, International Business and Theater Arts, more experienced workers have substantially lower unemployment rates and higher earnings than recent college graduates.

# Graduate degrees make a quantum difference in employment prospects across all majors.

Sometimes, when unemployment is high, the best strategy to increase future employability is to go to graduate school. The unemployment rate for people with graduate degrees is 3 percent compared with a 5 percent unemployment rate for those with a BA (recent college graduates and experienced workers holding a Bachelor's degree). With the exception of majors in the arts and Architecture, unemployment rates for people with graduate degrees range between 1.9 percent and 4.0 percent. Graduate degrees tend to outperform BA's on employment in part because advanced degrees represent higher levels of human capital development and because those degrees are more closely aligned with career pathways in particular occupations and industries.

## NOT ALL GRADUATE DEGREES OUTPERFORM ALL BA'S ON EMPLOYMENT, THOUGH.

For example, experienced workers with BA's in healthcare have lower unemployment rates than people with graduate degrees in every other field, except the Life and Physical Sciences. Similarly, a BA in Education can make a job seeker more employable than majors in Architecture, Humanities, Journalism, Computers, Social Science, Arts and Business who go on to graduate school. What college graduates earn also depends on what they take. Median earnings among recent college graduates vary from \$55,000 among Engineering majors to \$30,000 in the Arts, as well as Psychology and Social Work. In our more detailed data—which drills into the broad categories to look at results for more individual, specialized majors—the variation is even more pronounced, ranging from \$60,000 for Computer Engineering graduates to \$24,000 for Physiology majors.

Majors with high technical, business and healthcare content tend to earn the most among both recent and experienced college graduates. Engineering majors lead both in earnings for recent and experienced college graduates followed by Computer and Mathematics majors, and Business majors. Recent graduates in Healthcare majors start out with high earnings, but begin to lose ground to Science, Business and Engineering as college graduates gain experience and graduate degrees. Graduate school further differentiates earnings among majors.

## WHAT COLLEGE GRADUATES EARN ALSO DEPENDS ON WHAT THEY TAKE.

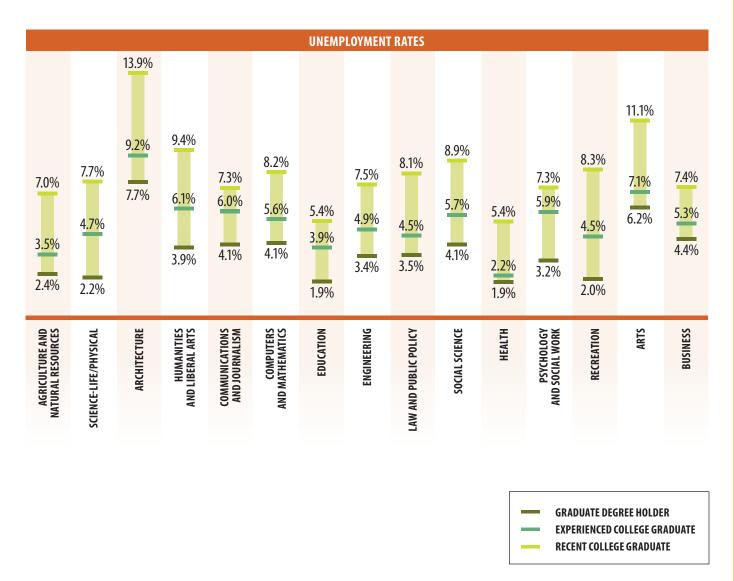
Majors that are most closely aligned with particular industries and occupations tend to have low unemployment rates but not necessarily the highest earnings. Some majors offer both high security and high earnings, while other majors trade off earnings for job security. Healthcare, Science and Business majors have both low unemployment and the highest earnings boost from experience and graduate education. At the same time, Education, Psychology and Social Work majors have relatively low unemployment, but earnings are also low and only improve marginally with experience and graduate education.

Although differences remain high among majors, graduate education raises earnings across the board. The average earnings for BA's now stands at \$48,000 compared with \$62,000 for graduate degrees. With the exception the Arts and Education, earnings for graduate workers range between \$60,000 and \$100,000.

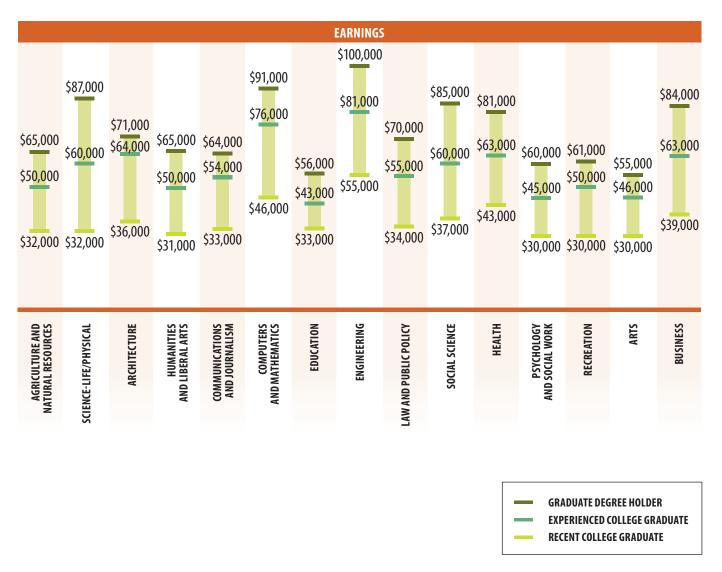
It is easy to look at unemployment rates for new college graduates or hear stories about degreeholders forced to tend bar and question the wisdom of investing in higher education when times are bad. But those questions should last only until you compare how job seekers with college degrees are doing compared to those without college degrees.

Today's best advice, then, is that high school students who can go on to college should do so with one caveat. They should do their homework before picking a major because, when it comes to employment prospects and compensation, not all college degrees are created equal.

#### UNEMPLOYMENT RATES DECLINE AS RECENT COLLEGE GRADUATES GAIN EXPERIENCE AND GRADUATE EDUCATION



#### EARNINGS INCREASE AS RECENT COLLEGE GRADUATES GAIN EXPERIENCE AND GRADUATE EDUCATION



### DETAILED UNEMPLOYMENT AND EARNINGS FOR COLLEGE MAJORS

		UNEMPLOYMENT RATES			EARNINGS			
MAJOR GROUP	MAJOR	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	
AGRICULTURE AND NATURAL RESOURCES	GENERAL AGRICULTURE	_	4.2%	_	_	\$45,000		
	ANIMAL SCIENCES	—	3.4%		—	\$44,000	—	
	NATURAL RESOURCES MANAGEMENT	—	5.3%	—	—	\$53,000	—	
ARCHITECTURE	ARCHITECTURE	13.9%	9.2%	7.7%	\$36,000	\$64,000	\$71,000	
ARTS	FINE ARTS	12.6%	7.3%	7.3%	\$30,000	\$45,000	\$55,000	
	DRAMA AND THEATER ARTS	7.8%	8.8%	7.0%	\$26,000	\$45,000	\$50,000	
	MUSIC	9.2%	4.5%	4.4%	\$30,000	\$45,000	\$55,000	
	COMMERCIAL ART AND GRAPHIC DESIGN	11.8%	7.5%	7.1%	\$32,000	\$49,000	\$60,000	
	FILM VIDEO AND Photographic arts	12.9%	6.7%	13.0%	\$30,000	\$50,000	\$58,000	
	STUDIO ARTS	—	8.0%		—	\$41,000	—	
BUSINESS	GENERAL BUSINESS	7.0%	4.8%	4.2%	\$37,000	\$60,000	\$85,000	
	ACCOUNTING	6.8%	4.8%	3.8%	\$43,000	\$65,000	\$90,000	
	BUSINESS MANAGEMENT AND ADMINISTRATION	8.1%	5.4%	4.4%	\$36,000	\$60,000	\$76,000	
	OPERATIONS LOGISTICS AND E-COMMERCE	—	5.5%	_	—	\$71,000	_	
	BUSINESS ECONOMICS	—	5.4%	_	—	\$77,000	_	
	MARKETING AND MARKETING RESEARCH	7.3%	6.0%	5.4%	\$37,000	\$65,000	\$81,000	

		UNEMPLOYMENT RATES			EARNINGS			
MAJOR GROUP	MAJOR	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	
	FINANCE	6.6%	5.2%	4.6%	\$44,000	\$72,000	\$95,000	
	HUMAN RESOURCES AND PERSONNEL MANAGEMENT	_	6.6%	4.4%	—	\$60,000	\$68,000	
	INTERNATIONAL BUSINESS	_	9.5%	—	—	\$60,000	—	
	HOSPITALITY MANAGEMENT	9.1%	5.7%	—	\$32,000	\$53,000	—	
	MANAGEMENT INFORMATION SYSTEMS AND STATISTICS	_	4.4%	_	_	\$73,000	—	
	MISCELLANEOUS BUSINESS & MEDICAL ADMINISTRATION	_	6.2%	—	—	\$56,000	—	
COMMUNICATIONS, JOURNALISM	COMMUNICATIONS	7.4%	6.3%	4.3%	\$34,000	\$57,000	\$65,000	
	JOURNALISM	7.7%	6.0%	3.8%	\$32,000	\$58,000	\$66,000	
	MASS MEDIA	8.5%	7.0%	6.7%	\$32,000	\$50,000	\$58,000	
	ADVERTISING AND PUBLIC RELATIONS	7.7%	6.1%	_	\$35,000	\$57,000	—	
	FAMILY AND CONSUMER SCIENCES	4.3%	4.2%	2.8%	\$30,000	\$43,000	\$59,000	
COMPUTERS AND MATHEMATICS	COMMUNICATION TECHNOLOGIES		8.5%	—	—	\$55,000		
	INFORMATION SYSTEMS	11.7%	5.4%	6.4%	\$43,000	\$68,000	\$80,000	

		UNEMPLOYMENT RATES			EARNINGS			
MAJOR GROUP	MAJOR	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	
	COMPUTER SCIENCE	7.8%	5.6%	3.8%	\$50,000	\$81,000	\$96,000	
	INFORMATION SCIENCES	—	5.1%	—	—	\$74,000	—	
	COMPUTER NETWORKING AND TELECOMMUNICATION	_	6.2%	_	_	\$60,000	_	
	COMPUTER ENGINEERING	—	5.0%	3.6%	_	\$89,000	\$100,000	
	MATHEMATICS	6.1%	5.1%	3.6%	\$40,000	\$71,000	\$86,000	
EDUCATION	GENERAL EDUCATION	6.0%	4.1%	2.4%	\$34,000	\$43,000	\$56,000	
	ELEMENTARY EDUCATION	4.8%	3.4%	1.7%	\$33,000	\$40,000	\$54,000	
	PHYSICAL AND HEALTH EDUCATION TEACHING	—	3.7%	2.2%	—	\$48,000	\$60,000	
	EARLY CHILDHOOD EDUCATION	_	4.9%	—		\$38,000	_	
	SECONDARY TEACHER EDUCATION	_	4.1%	—	_	\$47,000	—	
	SPECIAL NEEDS EDUCATION	—	4.5%	2.0%	—	\$43,000	\$57,000	
	LANGUAGE AND DRAMA EDUCATION	—	4.2%	2.2%	—	\$43,000	\$57,000	
	ART AND MUSIC EDUCATION		3.7%	2.2%		\$45,000	\$57,000	
	MISCELLANEOUS EDUCATION	—	4.0%	—	—	\$50,000	—	

		UNEMPLOYMENT RATES			EARNINGS			
MAJOR GROUP	MAJOR	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	
ENGINEERING	GENERAL ENGINEERING	_	5.7%	3.0%	_	\$75,000	\$96,000	
	CHEMICAL ENGINEERING	—	4.2%	3.5%	—	\$94,000	\$101,000	
	CIVIL ENGINEERING	8.1%	4.5%	2.8%	\$50,000	\$81,000	\$96,000	
	ELECTRICAL ENGINEERING	7.3%	5.2%	3.5%	\$57,000	\$90,000	\$106,000	
	INDUSTRIAL AND MANUFACTURING ENGINEERING	—	5.1%	4.0%	—	\$80,000	\$99,000	
	MECHANICAL ENGINEERING	8.6%	3.8%	3.5%	\$58,000	\$86,000	\$100,000	
	MISCELLANEOUS ENGINEERING	_	5.8%	—	_	\$72,000	—	
	ELECTRICAL ENGINEERING TECHNOLOGY	—	6.3%	_	—	\$70,000	—	
	INDUSTRIAL PRODUCTION TECHNOLOGIES	—	4.0%	—	—	\$68,000	—	
	MISCELLANEOUS ENGINEERING TECHNOLOGIES	—	4.5%	—	—	\$65,000	—	
HEALTH	HEALTH AND MEDICAL ADMINISTRATIVE SERVICES	—	2.9%	_	—	\$56,000	_	
	MEDICAL TECHNOLOGIES TECHNICIANS	_	2.1%	_	_	\$60,000	_	

		UNEMPLOYMENT RATES			EARNINGS			
MAJOR GROUP	MAJOR	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	
	NURSING	4.0%	1.9%	1.6%	\$48,000	\$64,000	\$81,000	
	PHARMACY PHARMACEUTICAL SCIENCES AND ADM	—	2.1%	2.0%	_	\$105,000	\$107,000	
	TREATMENT THERAPY PROFESSIONS	—	1.8%	—	—	\$63,000	—	
HUMANITIES AND Liberal Arts	AREA ETHNIC AND CIVILIZATION STUDIES	10.1%	5.5%	4.6%	\$35,000	\$50,000	\$71,000	
	LINGUISTICS AND COMPARATIVE LANGUAGE	_	10.5%	—		\$49,000	—	
	FRENCH, GERMAN, LATIN AND OTHER COMMON FOREIGN LANGUAGES	7.9%	4.8%	3.7%	\$32,000	\$50,000	\$62,000	
	OTHER FOREIGN LANGUAGES	—	—	6.8%	—	—	\$64,000	
	ENGLISH LANGUAGE AND LITERATURE	9.2%	6.2%	3.9%	\$32,000	\$52,000	\$64,000	
	COMPOSITION AND SPEECH	—	4.7%	—	—	\$50,000	—	
	LIBERAL ARTS	9.2%	6.2%	3.8%	\$30,000	\$50,000	\$66,000	
	PHILOSOPHY AND RELIGIOUS STUDIES	10.8%	6.8%	3.8%	\$30,000	\$48,000	\$62,000	
	THEOLOGY AND RELIGIOUS VOCATIONS	—	3.9%	2.8%	—	\$40,000	\$50,000	

		UNEMPLOYMENT RATES			EARNINGS			
MAJOR GROUP	MAJOR	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	
	ANTHROPOLOGY AND ARCHEOLOGY	10.5%	6.2%	4.1%	\$28,000	\$47,000	\$60,000	
	ART HISTORY AND CRITICISM	—	8.8%	—	—	\$52,000	—	
	HISTORY	10.2%	5.8%	3.9%	\$32,000	\$54,000	\$75,000	
INDUSTRIAL ARTS	CONSTRUCTION SERVICES	—	5.2%	—	—	\$76,000	—	
	TRANSPORTATION SCIENCES AND TECHNOLOGIES	_	4.0%	_	_	\$71,000		
LAW AND PUBLIC Policy	PRE-LAW AND LEGAL STUDIES	—	7.4%	—	—	\$49,000	—	
	CRIMINAL JUSTICE AND FIRE PROTECTION	7.6%	4.1%	3.2%	\$34,000	\$55,000	\$66,000	
	PUBLIC Administration	—	7.3%	—	—	\$58,000	—	
PSYCHOLOGY AND SOCIAL WORK	PSYCHOLOGY- ALL	7.6%	6.0%	3.4%	\$30,000	\$48,000	\$61,000	
	HUMAN SERVICES AND COMMUNITY ORGANIZATION	—	7.3%	_	—	\$39,000	—	
	SOCIAL WORK	6.6%	5.8%	2.9%	\$30,000	\$40,000	\$52,000	
RECREATION	PHYSICAL FITNESS, PARKS RECREATION	8.3%	4.5%	2.0%	\$30,000	\$50,000	\$61,000	
SCIENCE—LIFE/ PHYSICAL	ENVIRONMENTAL SCIENCE	—	4.2%	—	—	\$55,000	—	
	BIOLOGY	7.7%	4.6%	1.8%	\$31,000	\$56,000	\$87,000	

		UNEMPLOYMENT RATES			EARNINGS			
MAJOR GROUP	MAJOR	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	
	BIOCHEMICAL SCIENCES	_	5.9%	1.9%		\$69,000	\$96,000	
	MULTI-DISCIPLINARY OR GENERAL SCIENCE	8.2%	4.6%	2.4%	\$35,000	\$60,000	\$80,000	
	CHEMISTRY	6.6%	4.9%	2.0%	\$32,000	\$62,000	\$96,000	
	GEOLOGY AND EARTH SCIENCE	—	5.1%	—	_	\$63,000	—	
	PHYSICS	—	5.4%	2.8%		\$81,000	\$95,000	
SOCIAL SCIENCE	INTERDISCIPLINARY SOCIAL SCIENCES	—	7.2%	—	_	\$45,000	—	
	GENERAL SOCIAL SCIENCES	_	6.8%	—		\$50,000	—	
	ECONOMICS	9.4%	5.7%	4.6%	\$48,000	\$76,000	\$101,000	
	GEOGRAPHY		5.6%			\$59,000	_	
	INTERNATIONAL RELATIONS	—	4.8%	4.8%		\$65,000	\$91,000	
	POLITICAL SCIENCE AND GOVERNMENT	9.1%	6.0%	3.8%	\$35,000	\$65,000	\$90,000	
	SOCIOLOGY	8.6%	5.4%	3.5%	\$32,000	\$50,000	\$60,000	

## **APPENDICES**

#### **UNEMPLOYMENT AND EARNINGS FOR COLLEGE MAJORS**

	UN	EMPLOYMENT RA	TES	EARNINGS				
MAJOR	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER	RECENT COLLEGE GRADUATE	EXPERIENCED COLLEGE GRADUATE	GRADUATE DEGREE HOLDER		
AGRICULTURE AND NATURAL RESOURCES	7.0%	3.5%	2.4%	\$32,000	\$50,000	\$65,000		
SCIENCE- LIFE/PHYSICAL	7.7%	4.7%	2.2%	\$32,000	\$60,000	\$87,000		
ARCHITECTURE	13.9%	9.2%	7.7%	\$36,000	\$64,000	\$71,000		
HUMANITIES AND LIBERAL ARTS	9.4%	6.1%	3.9%	\$31,000	\$50,000	\$65,000		
COMMUNICATIONS, JOURNALISM	7.3%	6.0%	4.1%	\$33,000	\$54,000	\$64,000		
COMPUTERS AND MATHEMATICS	8.2%	5.6%	4.1%	\$46,000	\$76,000	\$91,000		
EDUCATION	5.4%	3.9%	1.9%	\$33,000	\$43,000	\$56,000		
ENGINEERING	7.5%	4.9%	3.4%	\$55,000	\$81,000	\$100,000		
LAW AND PUBLIC POLICY	8.1%	4.5%	3.5%	\$34,000	\$55,000	\$70,000		
SOCIAL SCIENCE	8.9%	5.7%	4.1%	\$37,000	\$60,000	\$85,000		
INDUSTRIAL ARTS	—	4.7%		—	\$71,000	—		
HEALTH	5.4%	2.2%	1.9%	\$43,000	\$63,000	\$81,000		
PSYCHOLOGY AND SOCIAL WORK	7.3%	5.9%	3.2%	\$30,000	\$45,000	\$60,000		
RECREATION	8.3%	4.5%	2.0%	\$30,000	\$50,000	\$61,000		
ARTS	11.1%	7.1%	6.2%	\$30,000	\$46,000	\$55,000		
BUSINESS	7.4%	5.3%	4.4%	\$39,000	\$63,000	\$84,000		

#### Methodology

Data from the American Community Survey for the years 2009 and 2010 were pooled to provide a larger sample size for the estimates. The unemployment rates were then computed for each of the three groups by dividing the total unemployed with the total employed and unemployed. The earnings used are median earnings in 2010 dollars rounded to the nearest \$1,000. The three groups are: recent college graduates (those between ages 22 and 26 with bachelor degrees), experienced college graduates (those between ages 30 and 54), and graduate degree holders (those with master's degrees or higher and are between 30 and 54). Median earnings are based on those who worked more than 35 hours a week and at least 50 weeks a year. All calculations use the survey weights provided by the Census Bureau.

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