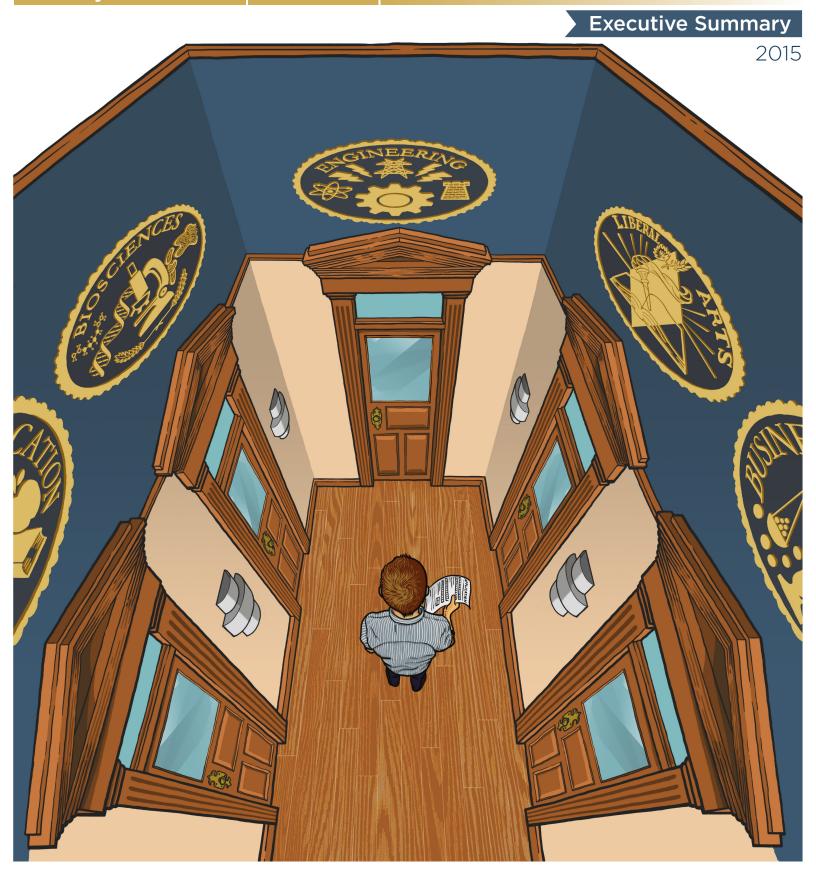
GEORGETOWN UNIVERSITY



Center on Education and the Workforce

McCourt School of Public Policy

Anthony P. Carnevale | Ban Cheah | Andrew R. Hanson



FACT SHEET

The Economic Value of College Majors

In this report, we analyze the annual earnings of college graduates by major. Entry-level earnings are for ages 21-24. Mid-career earnings are for ages 25-59. Earnings are reported in 2013 dollars.

Majors are aggregated into seven supergroups:















STEM (Science, technology, engineering, and mathematics) Business

Teaching and serving (E.g., education and social work)

Health

Arts, humanities, and liberal arts Career-focused (E.g., industrial arts) Social sciences

We also analyze the prevalence of majors among college-educated adults and how much graduate degree holders earn based on their undergraduate major compared to Bachelor's degree holders. Finally, we analyze the 10 highest- and lowest-paying majors among 137 detailed major subgroups.



Graduate degree holders include workers between the ages of 25 and 59. Graduate degree holders' majors refer to their undergraduate major, not their graduate field of study.



Bachelor's degree holders refers to adults between the ages of 21 and 59 with a Bachelor's degree but no further education. Earnings data are reported for workers employed full-time, full-year. Data on the prevalence of majors include all college-educated adults, including those neither employed nor in the labor force.



High school graduates refers to workers between the ages of 21 and 59 with nothing other than a high school diploma, employed full-time, full-year.

FIGURE

Not all Bachelor's degrees are created equal.



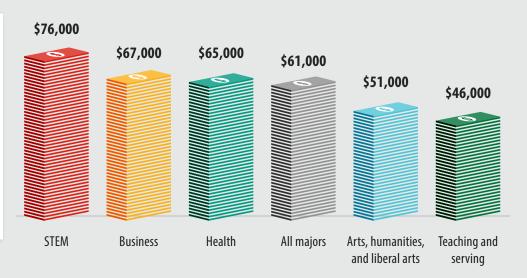
Entry-level

At the entry level, health majors earn \$41,000 annually, while humanities and liberal arts majors earn \$29,000 annually.

Median annual wages of college-educated workers (ages 21-24) by major supergroup (2013\$)

Mid-career

Among prime-age workers,¹ those who majored in STEM earn \$76,000 annually, while those who had a teaching and serving major earn \$46,000 annually.



Median annual wages of college-educated workers (ages 25-59) by major supergroup (2013\$)

2 E E E

College graduates' wages increase over the course of their careers, while the differences in wages among majors grow larger.

¹ "Prime-age workers" refers to those between the ages of 25 and 59.



Majors play a larger role in determining earnings than the decision to go to college.

\$3.4 MILLION

\$1 MILLION



The difference between the lifetime wages of college and high school graduates is \$1 million; the difference between the highest- and lowest-paying college majors is \$3.4 million.



Difference in lifetime wages of college and high school graduates

Difference in lifetime wages of highest- and lowest-paying majors

Lifetime wage premium (in millions of 2013\$)

FIGURE 4

Your major isn't your destiny.

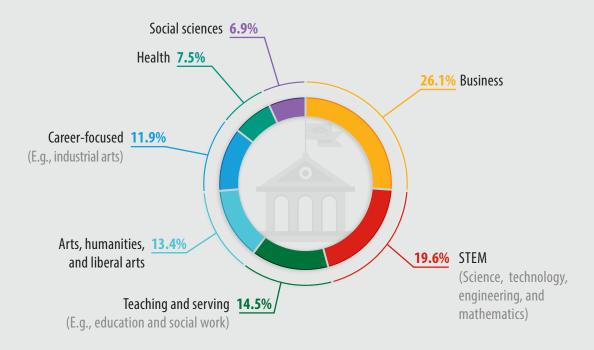
Some college graduates who have generally low-paying majors earn more than some college graduates with generally higher-paying majors: the top 25 percent of education majors earn \$59,000 or more annually, while the bottom 25 percent of engineering majors earn \$59,000 or less annually.



Interquartile range of annual wages of college-educated workers (ages 25-59) by educational attainment and major group (2013\$)

FIGURE 5

Business majors and STEM majors are the most common and among the highest-paying majors.



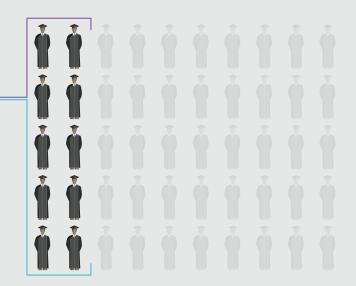
Share of college graduates (ages 25-59) by meta-major

FIGURE

Most students choose a major that is connected to the labor market.

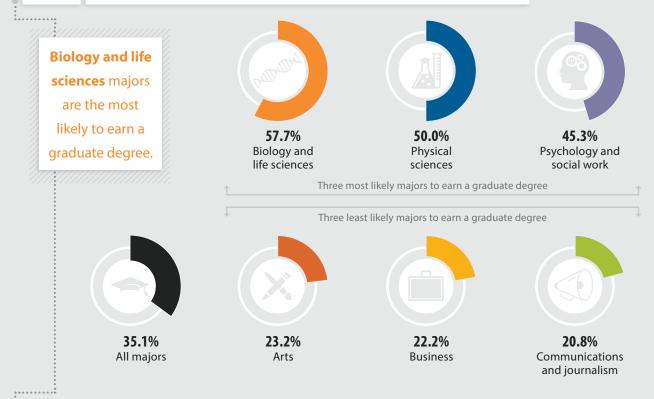
20%

Majors with weak connections to the labor market – humanities and liberal arts, social sciences, and arts majors – comprise only **20 percent** of college-educated workers.



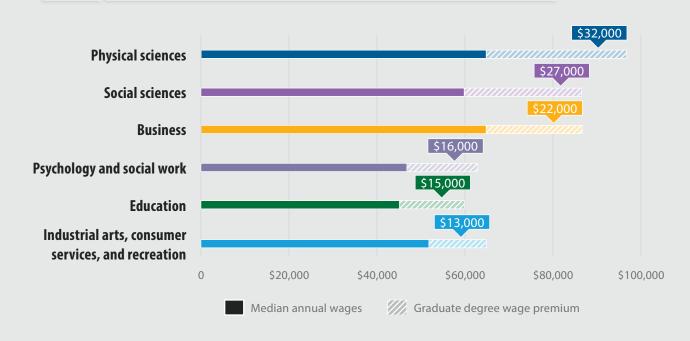
FIGURE

Some majors are more likely to lead to graduate school than others.



8 FIGURE

The benefit of a graduate degree is much greater for some majors than others.



What's It Worth?

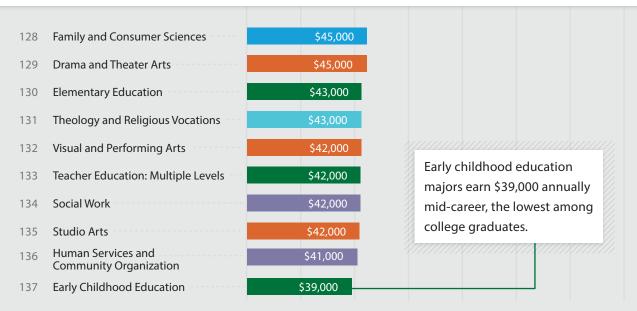
Highest- and Lowest-Earning Majors



Almost all of the highest-paying majors are in engineering fields.



The lowest-paying majors are in education, arts, and social work fields.



Median annual wages of college-educated workers (ages 25-59) by major subgroup (2013\$)

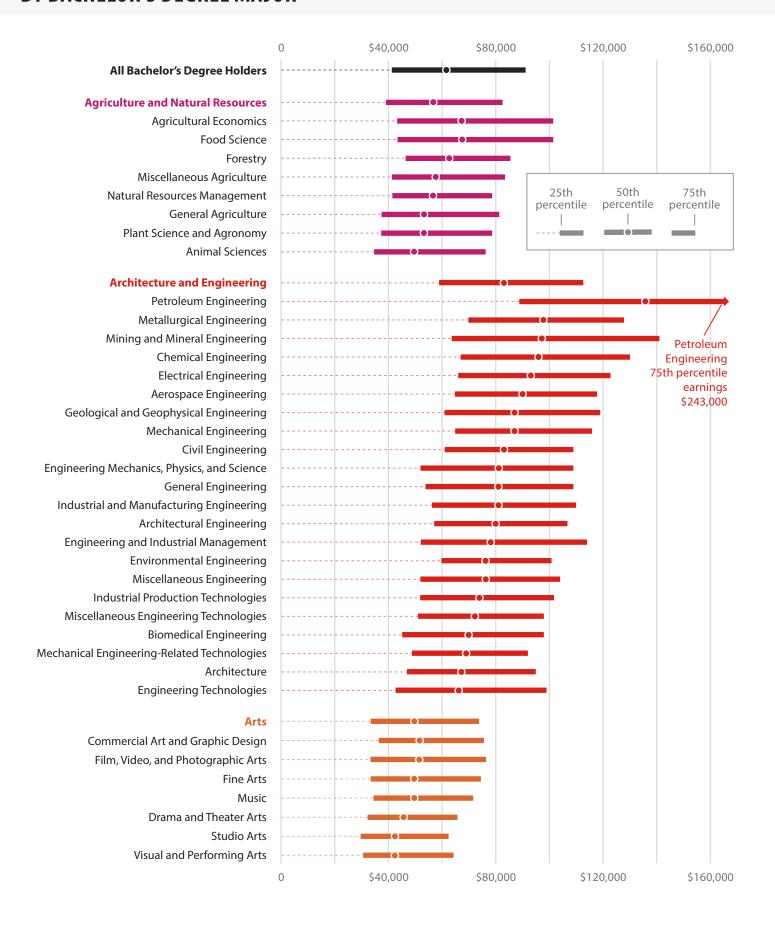
137 Detailed Majors

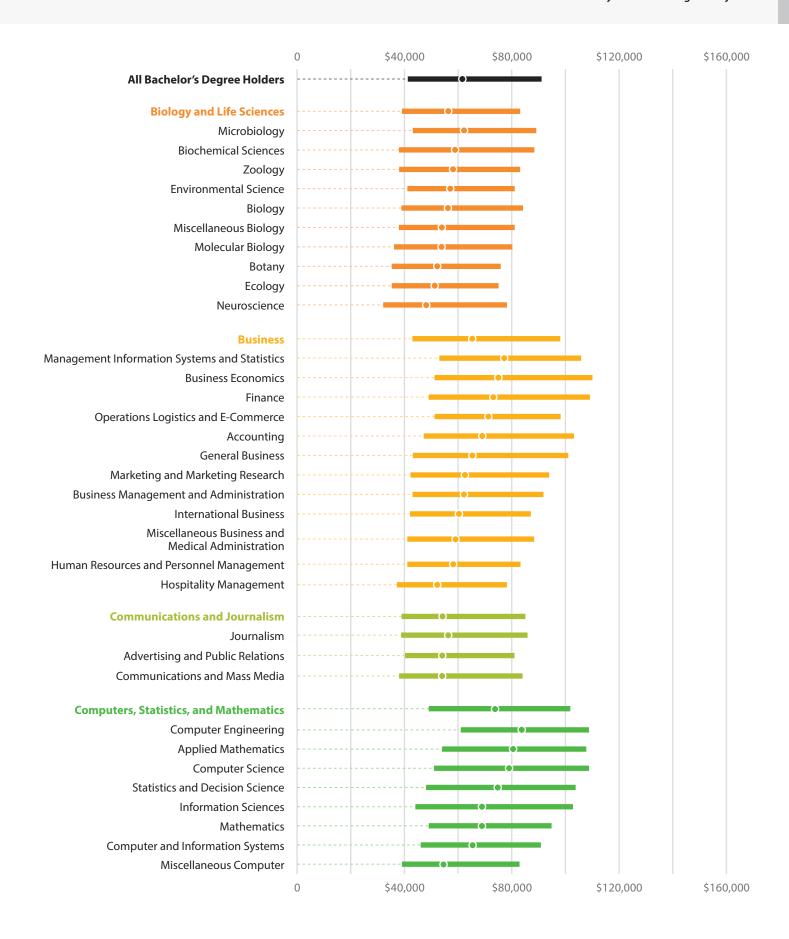
Selective Statistics

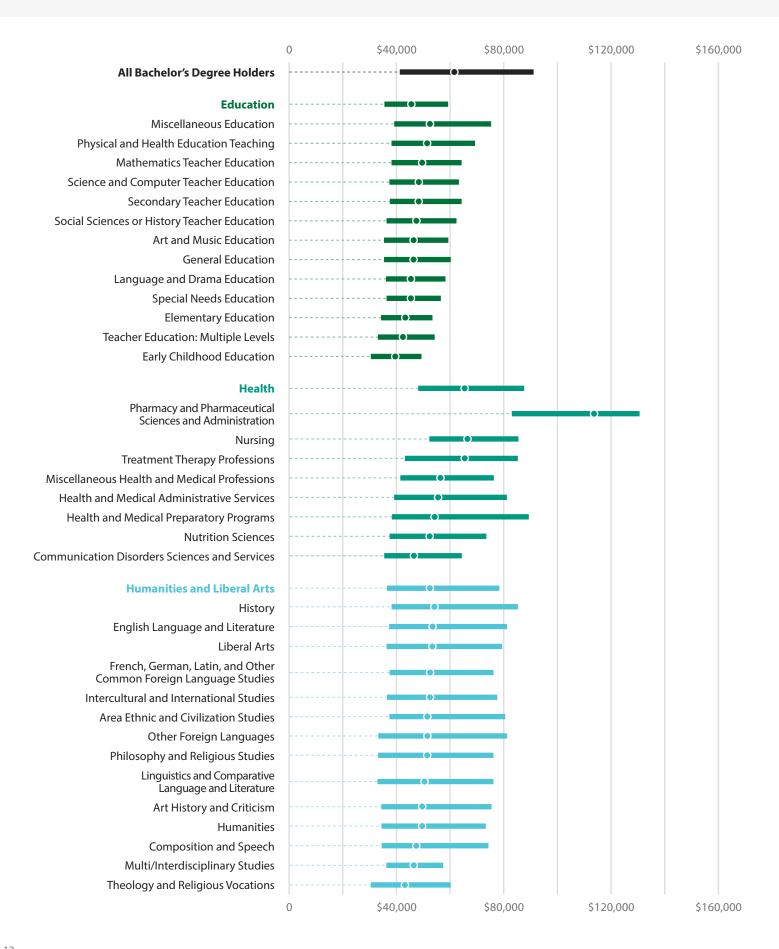
Contents

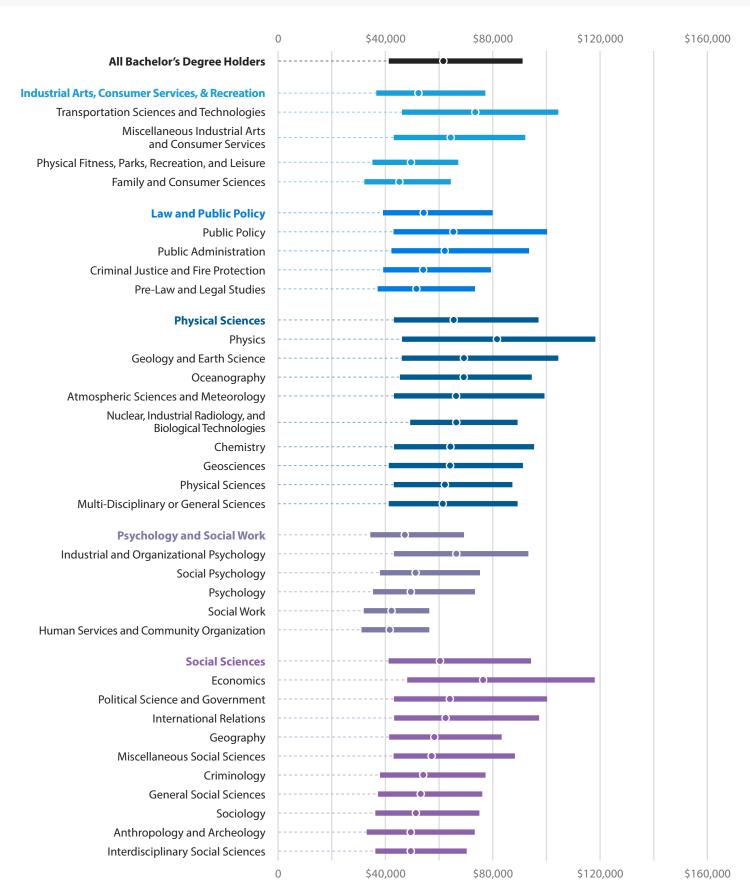
- 10 Mid-career earnings at the 25th, 50th and 75th percentiles, by Bachelor's degree major
- 14 The graduate advantage, mid-career earnings at the 25th, 50th and 75th percentiles by Bachelor's degree major
- 30 All majors by group, ranked by earnings and popularity
- 34 Lowest- and highest-earning majors, Bachelor's degree holders
- 36 Lowest- and highest-earning majors, graduate degree holders
- 38 Majors ranked by popularity for Bachelor's degree holders
- Majors ranked by popularity for graduate degree holders

MID-CAREER EARNINGS AT THE 25TH, 50TH AND 75TH PERCENTILES, BY BACHELOR'S DEGREE MAJOR







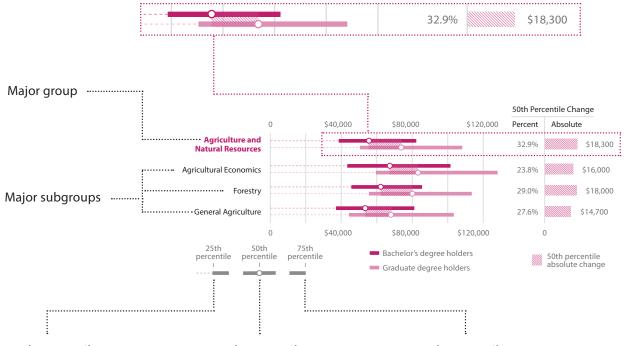


THE GRADUATE ADVANTAGE

The charts displayed in this section (the graduate advantage) show the interquartile range of annual wages for each major group and subgroup.

Each horizontal bar corresponds to a major group or subgroup. The leftmost point on the bar shows the 25th percentile of the wage distribution. The dot in the middle of the bar shows the median or 50th percentile of the wage distribution. The rightmost point on the bar shows the 75th percentile of the wage distribution.

The columns on the right correspond to the percentage and absolute difference between the median annual wage distribution of graduate degree holders and Bachelor's degree holders.



25th percentile

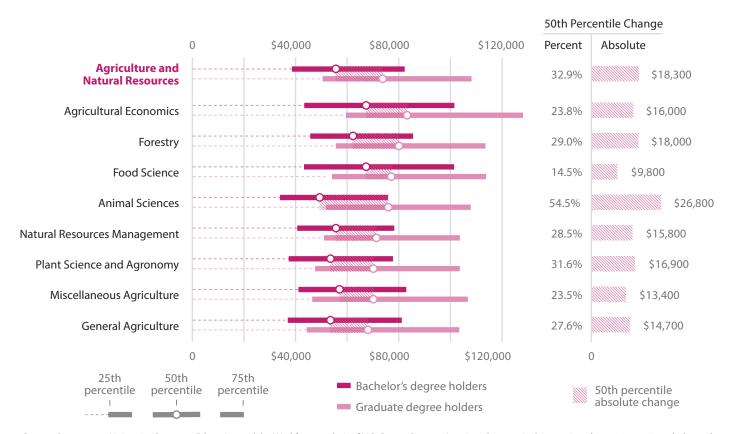
The bottom 25 percent of college-educated workers earn less than the 25th percentile.

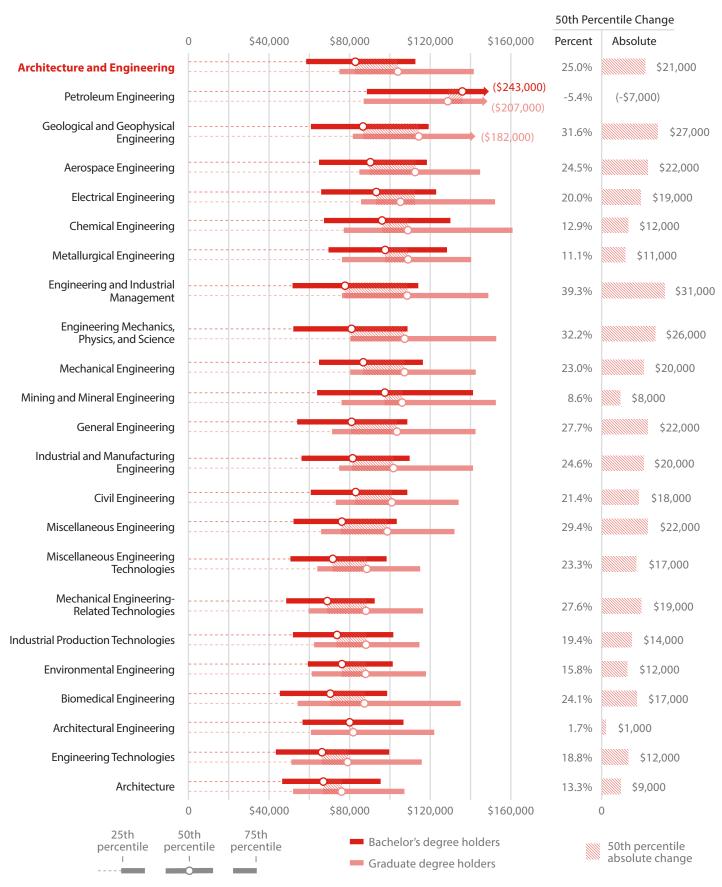
50th percentile

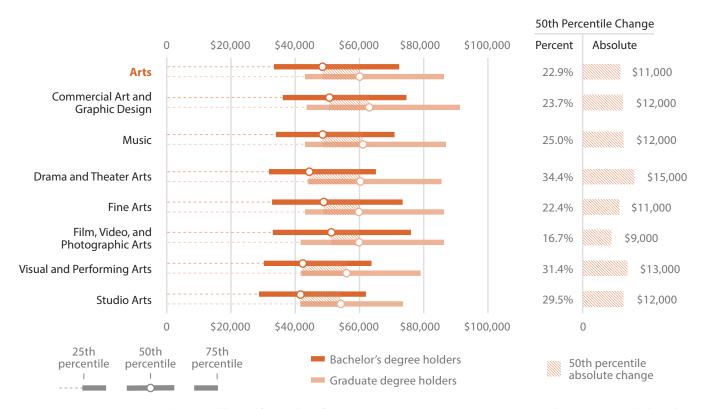
Half of college-educated workers earn more than the median and half earn less.

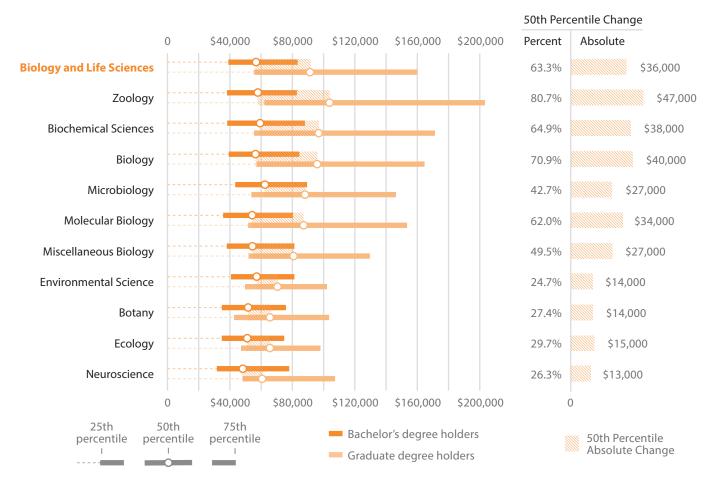
75th percentile

The top 25 percent of collegeeducated workers earn more than than 75th percentile.



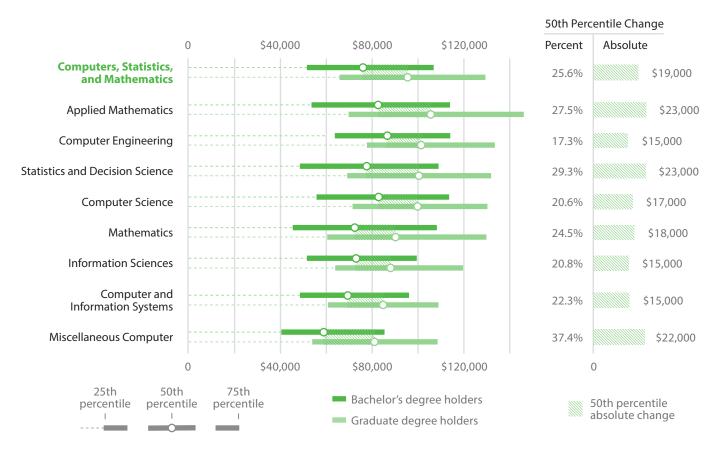


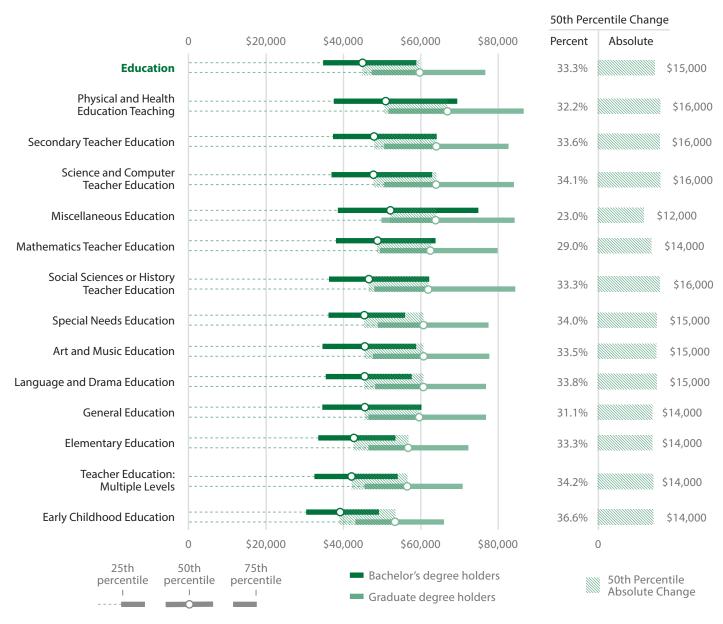


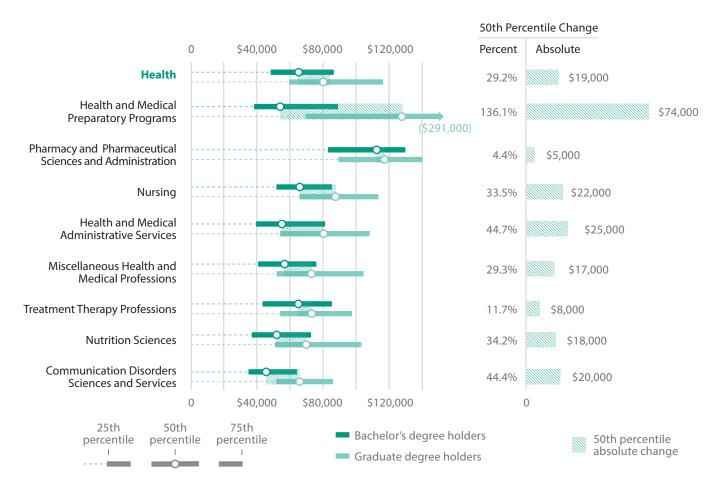


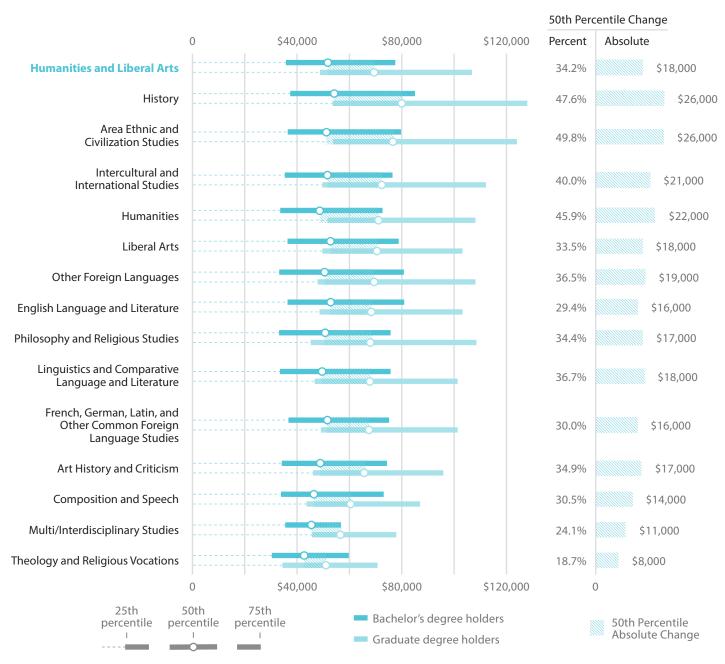


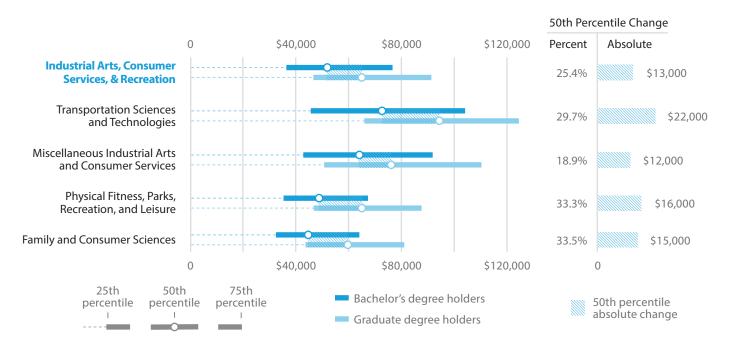


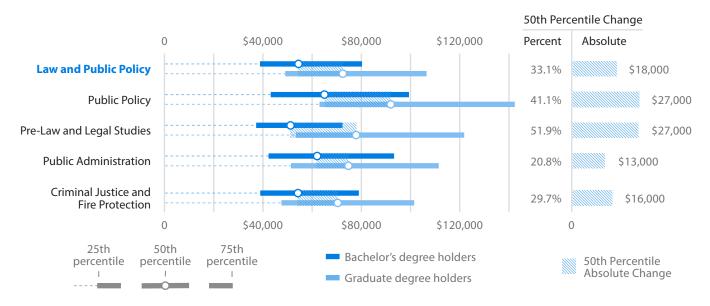


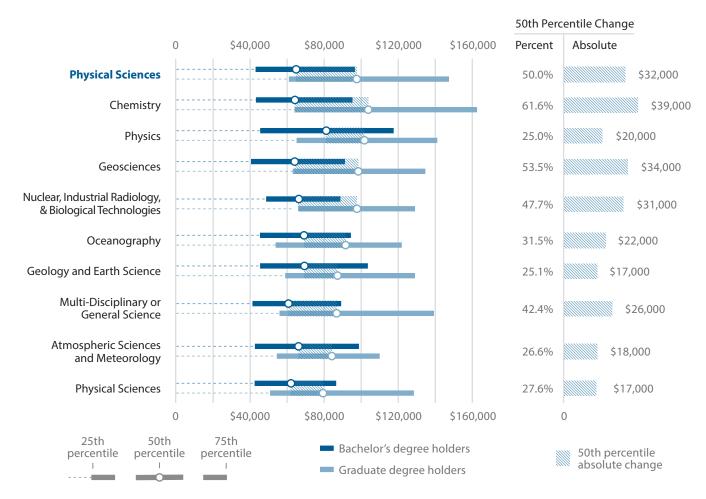


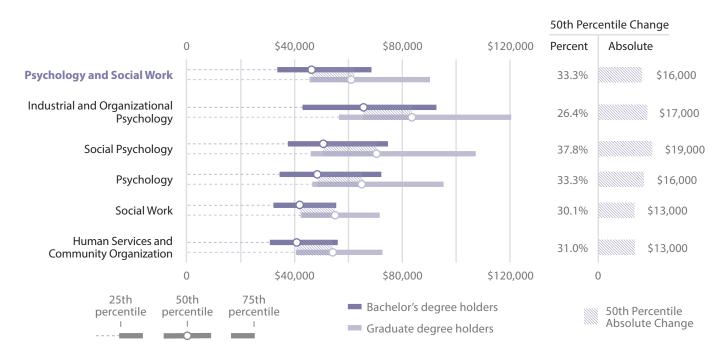


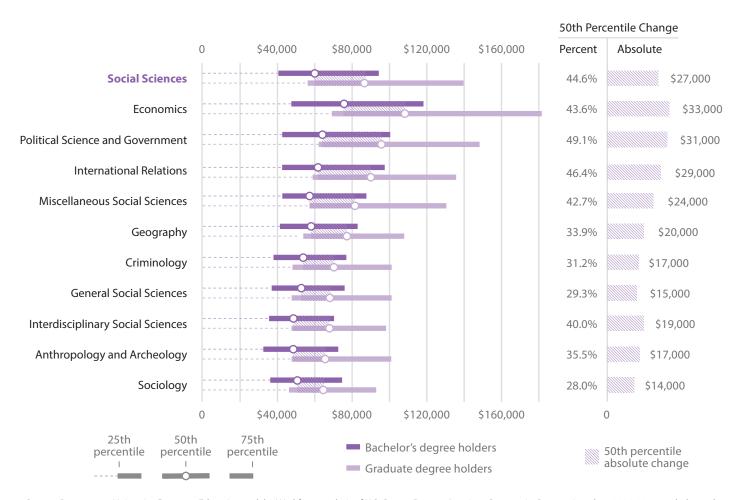












ALL MAJORS BY GROUP

RANKED BY EARNINGS AND POPULARITY

| By earnings | By popularity | | By earnings | By popularity |
|-------------|---------------|---|-------------|---------------|
| | | Agriculture and Natural Resources | | |
| 39 | 112 | Agricultural Economics | 54 | 125 |
| 107 | 72 | Animal Sciences | 73 | 67 |
| 40 | 116 | Food Science | 71 | 119 |
| 55 | 99 | Forestry | 62 | 108 |
| 85 | 67 | General Agriculture | 96 | 89 |
| 70 | 70 | Miscellaneous Agriculture | 89 | 106 |
| 75 | 78 | Natural Resources Management | 82 | 90 |
| 86 | 86 | | | |
| 00 | 00 | Plant Science and Agronomy | 88 | 98 |
| | | Architecture and Engineering | | |
| 7 | 100 | Aerospace Engineering | 5 | 72 |
| 18 | 122 | Architectural Engineering | 57 | 133 |
| 41 | 34 | Architecture | 75 | 40 |
| 33 | 107 | Biomedical Engineering | 49 | 75 |
| 5 | 51 | Chemical Engineering | 7 | 38 |
| 12 | 31 | Civil Engineering | 22 | 33 |
| 6 | 17 | Electrical Engineering | 6 | 13 |
| 19 | 114 | Engineering and Industrial Management | 10 | 122 |
| 17 | 123 | Engineering Mechanics, Physics, and Science | 11 | 116 |
| 43 | 111 | Engineering Technologies | 67 | 127 |
| 22 | 128 | Environmental Engineering | 44 | 123 |
| 16 | 23 | General Engineering | 17 | 21 |
| 10 | 137 | Geological and Geophysical Engineering | 4 | 137 |
| 14 | 62 | Industrial and Manufacturing Engineering | 19 | 56 |
| 26 | 81 | Industrial Production Technologies | 45 | 115 |
| 8 | 24 | Mechanical Engineering | 12 | 18 |
| 37 | 113 | Mechanical Engineering-Related Technologies | 46 | 132 |
| 3 | 136 | Metallurgical Engineering | 8 | 128 |
| 4 | 131 | Mining and Mineral Engineering | 13 | 136 |
| 23 | 98 | Miscellaneous Engineering | 26 | 97 |
| 31 | 50 | Miscellaneous Engineering Technologies | 43 | 78 |
| 1 | 124 | Petroleum Engineering | 1 | 131 |
| | | Arts | | |
| 105 | 22 | Commercial Art and Graphic Design | 116 | 65 |
| 129 | 47 | Drama and Theater Arts | 124 | 64 |
| 98 | 58 | Film, Video, and Photographic Arts | 126 | 101 |
| 108 | 21 | Fine Arts | 125 | 36 |
| 113 | 36 | Music | 121 | 31 |
| 135 | 82 | Studio Arts | 134 | 93 |
| 132 | 97 | Visual and Performing Arts | 132 | 109 |

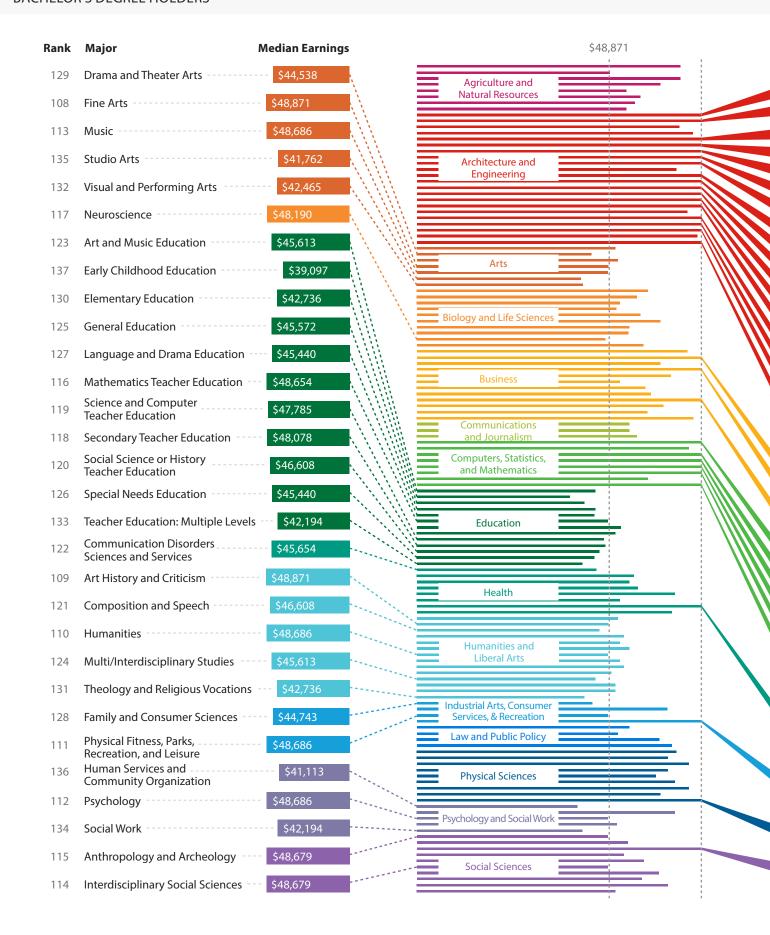
| y earnings | By popularity | | By earnings | By populari |
|------------|---------------|---|-------------|-------------|
| | | Biology and Life Sciences | | |
| 64 | 89 | Biochemical Sciences | 30 | 41 |
| 74 | 14 | Biology | 31 | 2 |
| 93 | 129 | Botany | 103 | 118 |
| 100 | 106 | Ecology | 104 | 102 |
| 71 | 63 | Environmental Science | 83 | 69 |
| 56 | 92 | Microbiology | 40 | 58 |
| 79 | 77 | Miscellaneous Biology | 59 | 50 |
| 83 | 115 | Molecular Biology | 48 | 80 |
| 117 | 133 | Neuroscience | 120 | 112 |
| 68 | 105 | Zoology | 15 | 59 |
| | | | | |
| | | Business | | |
| 38 | 3 | Accounting | 37 | 9 |
| 25 | 87 | Business Economics | 25 | 95 |
| 58 | 1 | Business Management and Administration | 61 | 5 |
| 30 | 12 | Finance | 21 | 17 |
| 49 | 2 | General Business | 41 | 8 |
| 91 | 39 | Hospitality Management | 92 | 96 |
| 66 | 44 | Human Resources and Personnel Management | 77 | 61 |
| 62 | 74 | International Business | 66 | 86 |
| 21 | 45 | Management Information Systems and Statistics | 34 | 74 |
| 54 | 7 | Marketing and Marketing Research | 58 | 25 |
| 65 | 68 | Miscellaneous Business and Medical Administration | 70 | 105 |
| 32 | 94 | Operations Logistics and E-Commerce | 29 | 113 |
| | | Communications and Journalism | | |
| 78 | 42 | Advertising and Public Relations | 108 | 85 |
| 77 | 6 | Communications and Mass Media | 101 | 16 |
| 73 | 27 | Journalism | 81 | 49 |
| | | Computers, Statistics, and Mathematics | | |
| 13 | 119 | Applied Mathematics | 14 | 111 |
| 34 | 33 | Computer and Information Systems | 52 | 53 |
| 9 | 46 | Computer Engineering | 18 | 52 |
| 11 | 11 | Computer Science | 24 | 14 |
| 27 | 75 | Information Sciences | 42 | 91 |
| 29 | 30 | Mathematics | 38 | 19 |
| 63 | 40 | Miscellaneous Computer | 60 | 82 |
| 20 | 117 | Statistics and Decision Science | 23 | 104 |

| Bachelor's Degree Ranking | | | Graduate Degree Ranking | | |
|---------------------------|-----|---|-------------------------|---------------|--|
| By earnings By popularity | | | By earnings | By popularity | |
| | | Education | | | |
| 123 | 49 | Art and Music Education | 119 | 44 | |
| 137 | 53 | Early Childhood Education | 136 | 54 | |
| 130 | 9 | Elementary Education | | 4 | |
| 125 | 8 | General Education | | 3 | |
| 127 | 61 | Language and Drama Education | 122 | 45 | |
| 116 | 102 | Mathematics Teacher Education | 115 | 66 | |
| 90 | 54 | Miscellaneous Education | 114 | 37 | |
| 101 | 38 | Physical and Health Education Teaching | 102 | 42 | |
| 119 | 108 | Science and Computer Teacher Education | 113 | 81 | |
| 118 | 55 | Secondary Teacher Education | 112 | 48 | |
| 120 | 76 | Social Sciences or History Teacher Education | 117 | 63 | |
| 126 | 56 | Special Needs Education | 118 | 32 | |
| 133 | 88 | Teacher Education: Multiple Levels | 130 | 73 | |
| | | | | | |
| | | Health | | | |
| 122 | 93 | Communication Disorders Sciences and Services | 107 | 30 | |
| 76 | 65 | Health and Medical Administrative Services | 63 | 77 | |
| 81 | 118 | Health and Medical Preparatory Programs | 2 | 62 | |
| 72 | 25 | Miscellaneous Health Medical Professions | 78 | 23 | |
| 46 | 4 | Nursing | | 10 | |
| 95 | 90 | Nutrition Sciences | 91 | 79 | |
| 2 | 57 | Pharmacy and Pharmaceutical Sciences and Administration | n 3 | 39 | |
| 48 | 35 | Treatment Therapy Professions | 79 | 35 | |
| | | | | | |
| | | Humanities and Liberal Arts | | | |
| 96 | 71 | Area Ethnic and Civilization Studies | 72 | 55 | |
| 109 | 80 | Art History and Criticism | 106 | 70 | |
| 121 | 96 | Composition and Speech | 123 | 99 | |
| 89 | 10 | English Language and Literature | 94 | 6 | |
| 92 | 43 | French, German, Latin, and Other Common Foreign Language Studies | 100 | 34 | |
| 82 | 18 | History | 64 | 11 | |
| 110 | 109 | Humanities | 84 | 103 | |
| 94 | 101 | Intercultural and International Studies | 80 | 87 | |
| 87 | 19 | Liberal Arts | 85 | 26 | |
| 106 | 91 | Linguistics and Comparative Language and Literature | 99 | 68 | |
| 124 | 110 | Multi/Interdisciplinary Studies | 131 | 120 | |
| 102 | 104 | Other Foreign Languages | 93 | 83 | |
| 103 | 48 | Philosophy and Religious Studies | 98 | 27 | |
| 131 | 41 | Theology and Religious Vocations | 137 | 46 | |

| / earnings | By popularit | ty | By earnings | By popularity |
|------------|--------------|--|-------------|---------------|
| | | Industrial Arts, Consumer Services, and Recreatio | n | |
| 128 | 29 | Family and Consumer Sciences | 128 | 47 |
| 53 | 52 | Miscellaneous Industrial Arts and Consumer Services | 74 | 110 |
| 111 | 28 | Physical Fitness, Parks, Recreation, and Leisure | 109 | 43 |
| 28 | 60 | Transportation Sciences and Technologies | 33 | 100 |
| 20 | | mansportation sciences and recrimologies | 33 | 100 |
| | | Law and Public Policy | | |
| 80 | 13 | Criminal Justice and Fire Protection | 87 | 24 |
| 97 | 83 | Pre-Law and Legal Studies | 68 | 88 |
| 59 | 103 | Public Administration | 76 | 84 |
| 47 | 127 | Public Policy | 35 | 114 |
| | | , | | |
| | | Physical Sciences | | |
| 42 | 126 | Atmospheric Sciences and Meteorology | 53 | 126 |
| 50 | 37 | Chemistry | 16 | 15 |
| 35 | 69 | Geology and Earth Science | 50 | 57 |
| 51 | 134 | Geosciences | 27 | 129 |
| 61 | 26 | Multidisciplinary or General Science | 51 | 28 |
| 44 | 120 | Nuclear, Industrial Radiology, and Biological Technologies | s 28 | 117 |
| 36 | 130 | Oceanography | 36 | 130 |
| 57 | 135 | Physical Sciences | 65 | 134 |
| 15 | 73 | Physics | 20 | 29 |
| | | | | |
| | | Psychology and Social Work | | |
| 136 | 79 | Human Services and Community Organization | 135 | 92 |
| 45 | 121 | Industrial and Organizational Psychology | 55 | 124 |
| 112 | 5 | Psychology | 110 | 1 |
| 99 | 132 | Social Psychology | 90 | 135 |
| 134 | 32 | Social Work | 133 | 22 |
| | | | | |
| | | Social Sciences | | |
| 115 | 59 | Anthropology and Archeology | 105 | 51 |
| 84 | 85 | Criminology | 86 | 107 |
| 24 | 16 | Economics | 9 | 12 |
| 88 | 66 | General Social Sciences | 95 | 71 |
| 67 | 64 | Geography | 69 | 76 |
| 114 | 95 | Interdisciplinary Social Sciences | 97 | 94 |
| 60 | 84 | International Relations | 39 | 60 |
| 69 | 125 | Miscellaneous Social Sciences | 56 | 121 |
| 52 | 15 | Political Science and Government | 32 | 7 |
| 104 | 20 | Sociology | 111 | 20 |

LOWEST- AND HIGHEST-EARNING MAJORS

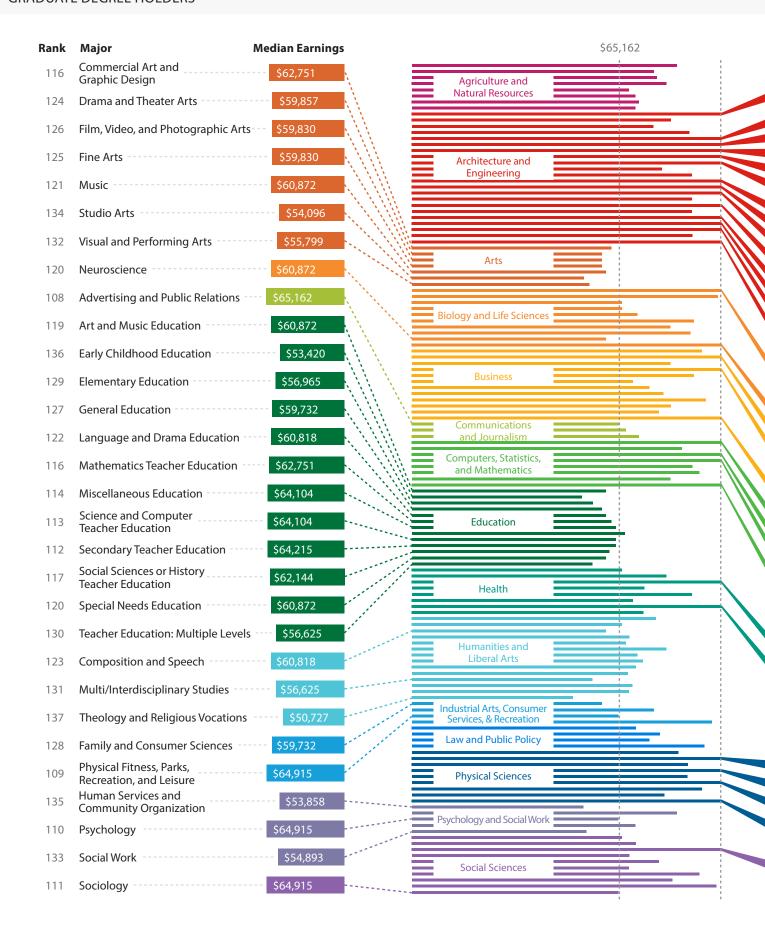
BACHELOR'S DEGREE HOLDERS



| Rank | gs Major | 2,501 | \$72, |
|------|---|------------|-------|
| 7 | Aerospace Engineering | | |
| 18 | Architectural Engineering | \$80,130 | |
| 5 | 96,156 Chemical Engineering | | |
| 12 | Civil Engineering | \$82,8 | |
| 6 | 15 Electrical Engineering | | |
| 19 | Engineering and Industrial Management | \$7 | |
| 17 | Engineering Mechanics Physics and Science | \$80,787 | |
| 22 | Environmental Engineering | \$76,0 | |
| 16 | General Engineering | \$80,787 | |
| 10 | Geological and Geophysical Engineering | | |
| 14 | Industrial and Manufacturing Engineering | \$81,452 | |
| 26 | Industrial Production Technologies | \$73,719 | |
| 8 | Mechanical Engineering | | |
| 3 | \$97,743 Metallurgical Engineering | | IIII |
| 4 | \$97,372 Mining and Mineral Engineering | | |
| 23 | Miscellaneous Engineering | \$76,0 | |
| 1 | \$135,754 Petroleum Engineering | | |
| 25 | Business Economics | \$74,78 | |
| 30 | Finance | \$72,501 | |
| 21 | Management Information Systems and Statistics | \$76 | |
| 13 | Applied Mathematics | \$82,8 | |
| 9 | Computer Engineering | | |
| 11 | Computer Science | \$82,8 | |
| 27 | Information Sciences | \$73,046 | |
| 29 | Mathematics | \$72,501 - | |
| 20 | Statistics and Decision Science | \$7 | |
| 2 | \$112,519 Pharmacy and Pharmaceutical Sciences and Administration | | |
| 28 | Transportation Sciences and Technologies | \$72,764 | |
| 15 | Physics | \$81,143 | |
| 24 | Economics | \$75,60 | |
| | | | |

LOWEST- AND HIGHEST-EARNING MAJORS

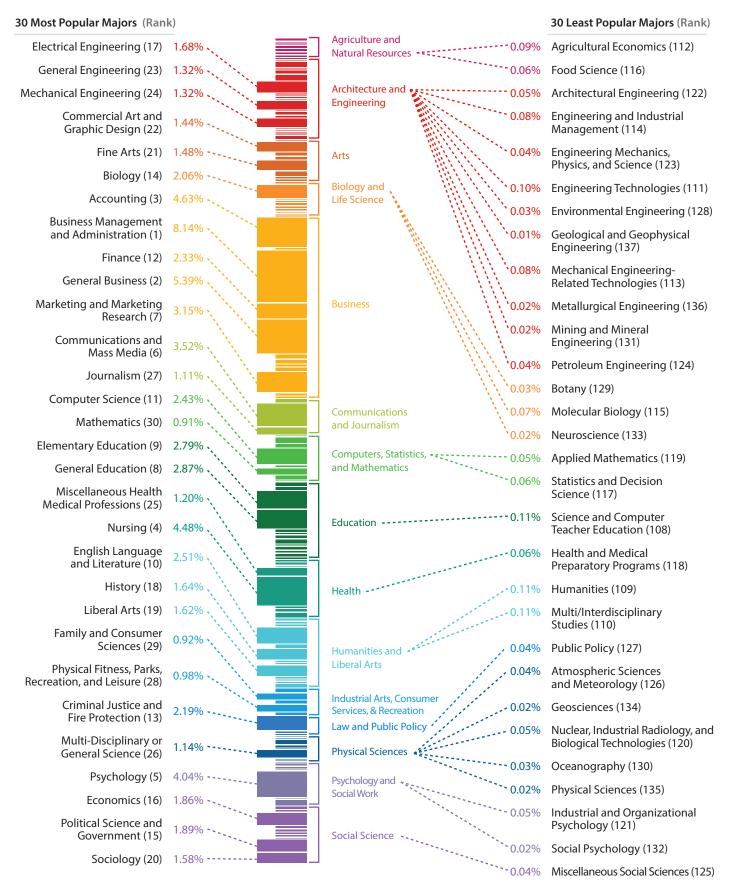
GRADUATE DEGREE HOLDERS



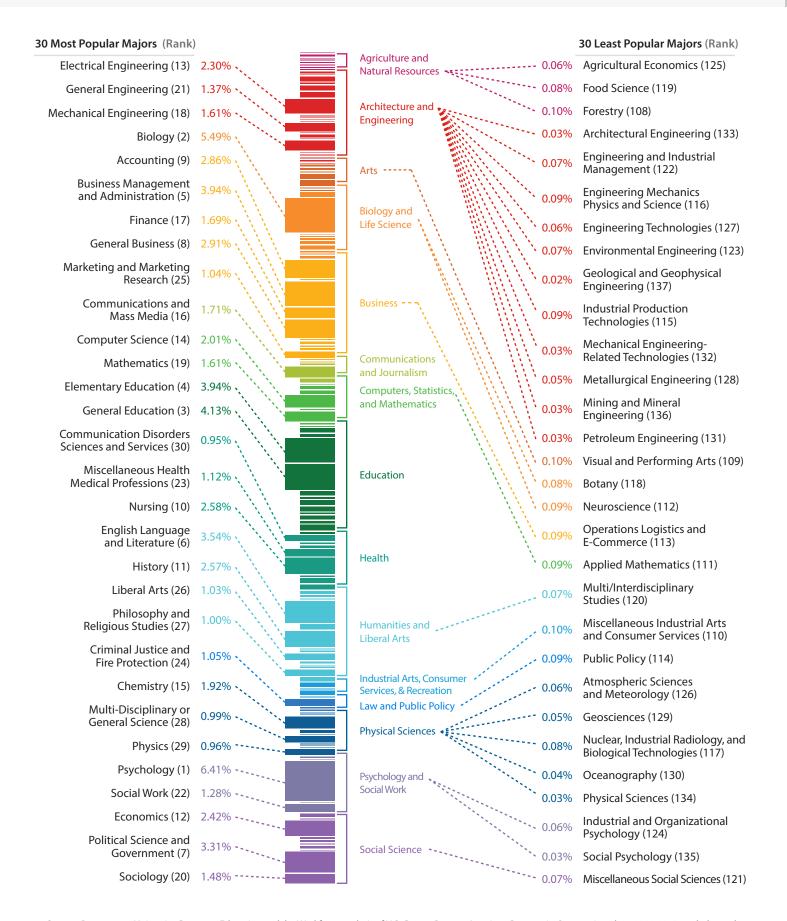
| Rank | Major | Median Earnings | \$97,000 |
|------|---|-----------------|----------|
| 5 | \$112,181 Aerospace Engineering | | |
| 7 | Chemical Engineering | \$108,603 | |
| 22 | Civil Engineering | \$100,618 | |
| 6 | 111,861 Electrical Engineering | \$ | |
| 10 | Engineering and Industrial Management | \$108,191 | |
| 11 | Engineering Mechanics Physics and Science | \$106,839 | |
| 17 | General Engineering | \$103,173 | - 5 |
| 4 | \$113,930 Geological and Geophysical Engineering | | |
| 19 | Industrial and Manufacturing Engineering | ,498 | \$101, |
| 12 | Mechanical Engineering | \$106,839 | |
| 8 | Metallurgical Engineering | \$108,603 | |
| 13 | Mining and Mineral Engineering | \$105,771 | |
| 26 | Miscellaneous Engineering | 98,410 | \$9 |
| 1 | \$128,430 Petroleum Engineering | | |
| 30 | Biochemical Sciences | ,358 | \$97, |
| 15 | Zoology | \$104,259 | |
| 25 | Business Economics | \$99,536 | |
| 21 | Finance | ,453 | \$101, |
| 29 | Operations Logistics and E-Commerce | ,395 | \$97, |
| 14 | Applied Mathematics | \$105,644 | |
| 18 | Computer Engineering | ,498 | \$101, |
| 24 | Computer Science | \$99,915 | |
| 23 | Statistics and Decision Science | \$100,465 | |
| 2 | \$128,207 Health and Medical Preparatory Programs | | |
| 3 | \$117,523 Pharmacy and Pharmaceutical Sciences and Administration | | |
| 16 | Chemistry | \$103,573 | |
| 27 | Geosciences | 8,394 | \$98 |
| 28 | Nuclear, Industrial Radiology, and Biological Technologies | ,395 | \$97, |
| 20 | Physics | \$101,453 | |
| 9 | Economics | \$108,603 | |
| | | | |

MAJORS RANKED BY POPULARITY

BACHELOR'S DEGREE HOLDERS



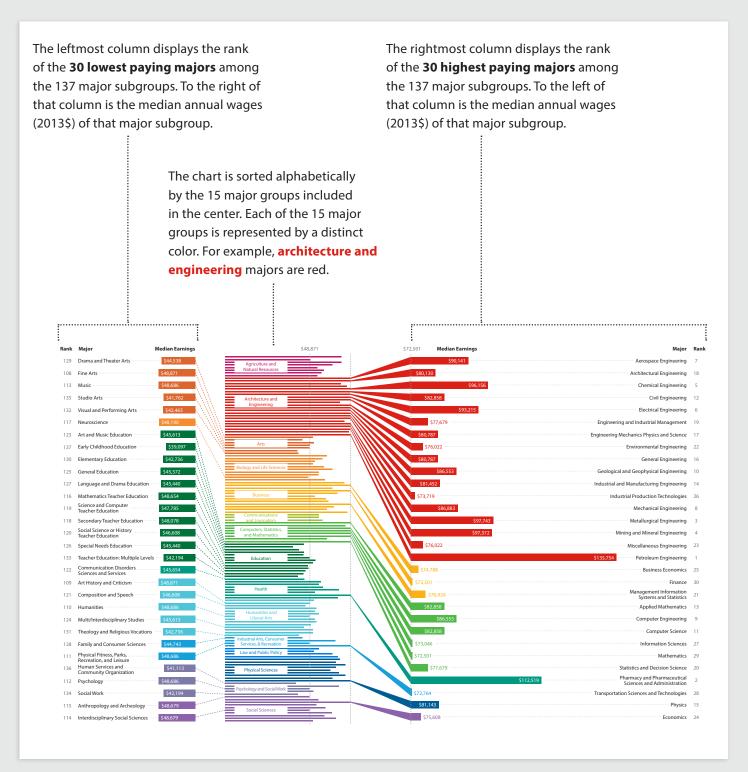
GRADUATE DEGREE HOLDERS



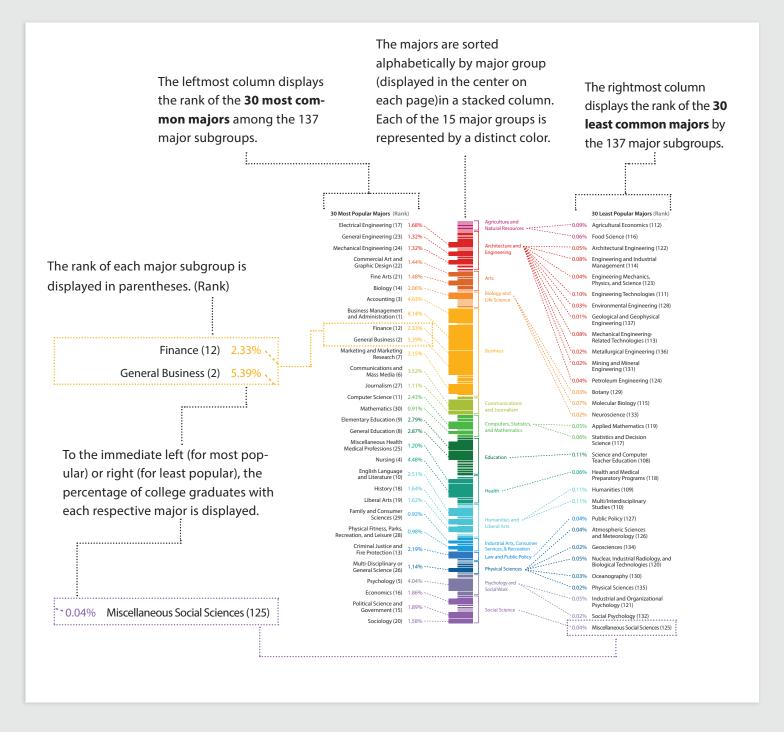
HELP READING OUR CHARTS

LOWEST- AND HIGHEST-EARNING MAJORS

This chart shows the 30 highest paying majors and the 30 lowest paying majors.



This chart shows the 30 most common majors and 30 least common majors for Bachelor's degree holders and graduate degree holders.



The Economic Value of College Majors can be accessed at cew.georgetown.edu/report/valueofcollegemajors



THE ECONOMIC VALUE of COLLEGE MAJORS

GEORGETOWN UNIVERSITY



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