

HOT careers 2015

for College Graduates

A SPECIAL REPORT FOR RECENT AND MID-CAREER COLLEGE GRADUATES

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Introduction

As the U.S. economy finally emerges from the lasting effects of the Great Recession, college graduates are facing a decidedly rosier job market than they encountered just a few years ago. According to the National Association of College and Employers, firms plan to hire 9.6 percent more college graduates this year than they did in 2014. The Federal Reserve also estimates that the overall unemployment rate will continue to fall, settling around 5.2 percent by the end of the year.

While the employment picture may be brighter, finding that first job can still be a challenge as recent graduates navigate their post-college lives. They must not only identify where the job opportunities lie but also determine which of those jobs best mesh with their schooling, talents, and experience.

To help connect current graduates and other job seekers to meaningful work, University of California, San Diego Extension has assembled its seventh annual “Hot Careers for College Graduates” report. As a division of one of the leading research universities in the country, UC San Diego Extension is uniquely positioned to provide timely and authoritative data designed to inform workforce development strategies that are so vital to our overall economic health as well as aid decision making among job seekers.

The Center for Research on the Regional Economy, which is housed within UC San Diego Extension, compiled this list of hot careers by developing an algorithm to identify the career tracks that represent both economic opportunity and career growth potential.

While the careers identified in this report require a bachelor’s degree for entry-level jobs, it is clear that in today’s competitive job market there is a constant need for additional education and training. It is this need that UC San Diego Extension works tirelessly to address by offering more than 4,300 courses and 100 certificate programs. In the last year alone, UC San Diego Extension has had more than 63,000 enrollees, which represents some 33,000 individuals taking advantage of its best-in-class educational offerings.

The careers identified in this report reflect our evolving economy, which is shaped by rapid changes in technology, globalization, and demographic shifts. The findings of this report are designed not only to help the job seeker but also the programs that UC San Diego Extension and other educational institutions offer so that employers have the workers they need to thrive and grow.

I would like to acknowledge the work of the research team headed by Josh Shapiro, Ph.D., sociology, Sundari Baru, Ph.D., economics, and Gladys Bustos-Selfridge, B.A., who collected, vetted, and analyzed the data for this annual report.

Thanks also go to the more than 230 UC San Diego Extension staff members and hundreds of instructors who work so hard to ensure we are delivering on the promise of educational and economic opportunity for all. Together, we are working to ensure that everyone is able to take the next step in life – whether they are a recent college graduate, a mid-career professional, or a recent retiree.

Sincerely,



Mary L. Walshok, Ph.D.
Associate Vice Chancellor of Public Programs and Dean of Extension

Methodology

What exactly constitutes a hot job? It's more than just projected employment growth and attractive salary ranges. It's about growth potential and the quality of the work environment as well. To determine the hot careers for 2015, the Center for Research on the Regional Economy at UC San Diego Extension examined a number of factors to come up with this year's list of the best jobs for those with a bachelor's degree.

The four components used in the methodology:

1. Current employment
2. Wages
3. Work environment
4. Employment projections

Current employment: The research team used the Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES) to obtain estimates of total current employment in each specific occupational group.

Wages: The Occupational Employment Statistics also provided median wages for each occupation category.

Work environment: To determine the quality of each occupation's work environment, the following nine criteria were evaluated using data from www.onetonline.org. These attributes include:

1. Duration of a typical work week
2. Level of competition for jobs
3. Frequency of conflict situations
4. Indoor, environmentally controlled environment
5. Time pressure
6. Need to deal with unpleasant or angry people
7. Responsibility for others' health and safety
8. Consequences of errors
9. Time spent standing

Employment predictions: The research team also analyzed Bureau of Labor Statistics data to determine the employment projections for the period 2012 to 2022.

These attributes include:

1. Current employment – 30 percent
2. Wages – 30 percent
3. Work environment – 25 percent
4. Employment projection – 15 percent

The four components were added together with a possible maximum point total of 100. Researchers then condensed the list by including only those jobs for which the typical entry-level educational requirement was a bachelor's degree. Jobs that required long-term on-the-job training also were eliminated from the list to ensure that all the careers listed were ones that college graduates could easily attain. This analysis did not affect the weighted score but was included to ensure that the jobs would provide a more accurate picture of where employment opportunities are growing for college graduates.

Results

Here is what the algorithm revealed about what constitutes a hot career in today's world for recent and mid-career college graduates. The table below shows how the top ten careers, labeled by Standard Occupational Classification (SOC) code, were scored and ranked:

SOC code*	Occupation Title	Current Employment
15-1132	Software Developers, Applications	77
15-1133	Software Developers, Systems Software	74.5
13-2011	Accountants and Auditors	72
13-1161	Market Research Analysts and Marketing Specialists	70
13-1051	Cost Estimators	65
15-1143	Computer Network Architects	62.5
13-1111	Management Analysts	62.5
13-2052	Personal Financial Advisors	62.5
25-2021	Elementary School Teachers, Except Special Education	57
13-2051	Financial Analysts	55

*Standard Occupational Classification Code

The first column in the chart is the classification code for each job as determined by the Bureau of Labor Statistics for the Occupational Employment Statistics Database. Note: Career fields contain various jobs, and the researchers looked at both jobs and careers.

Top Ten Hot Careers for 2015

1. Software Developers, Applications

Software application developers are the creative minds who have helped transform our daily lives by designing computer programs to make work tasks easier and life more interesting and enjoyable. The meteoric rise and demand for digital apps, including mobile ones for smart phones and tablets, has resulted in an increased demand for those who can design, develop, and test these apps. The work of software app developers is highly collaborative, and a team of developers is typically in charge of the entire design process from conceptualizing the application to ensuring that it delivers the appropriate user experience without any glitches or bugs. These applications can be anything from Internet games to word processing programs to complex databases for organizations.

Growth: Job growth for software developers is projected to grow by 23 percent between 2012 and 2022, which is much faster than the average for all other occupations. The Bureau of Labor Statistics also reported the median annual salary for a software developer in 2012 was \$90,060, with the lowest 10 percent earning less than \$55,190 and the top 10 percent earning more than \$138,880.

Skills: Software application developers typically need a bachelor's degree in computer science, engineering, or related field as well as a strong background in writing code. Important qualities for software application developers include creativity, attention to detail, and the ability to problem solve and communicate effectively.

2. Software Developers, Systems Software

Software system developers design and maintain the systems that serve as the control panel of the digital world, ensuring computers and other devices run properly. They also work to ensure that these systems are seamless and simple for the end user by researching, developing, and testing this software for a wide range of industries from health care to communications to business as well as for the general public. Among the tasks that system software developers must perform are developing and deploying testing systems as well as modifying software to improve function and adapt to new hardware. Designing new systems also requires consulting with customers and users to receive feedback about performance and monitoring and maintaining the system's performance.

Growth: The number of jobs for system software developers is expected to grow by 20 percent, which is much faster than the average for other occupations. The Bureau of Labor Statistics predicts that systems developers are likely to see more job opportunities because computers systems are being incorporated into a wide array of consumer electronics, including cell phones and tablets as well as in appliances and automobiles. The median annual wage for systems software developers was \$99,000 in 2012, with the lowest 10 percent earning less than \$62,800, and the top 10 percent earning more than \$148,850.

Skills: Software systems developers typically need a bachelor's degree in computer science, engineering, or related field as well as a strong background in writing code. Important qualities for software application developers include critical thinking, complex problem solving, attention to detail, and the ability to communicate effectively.

3. Accountants and Auditors

A recovering economy is boosting the demand for accountants and auditors. As more companies start up and grow, there is an increased demand for accounting services. Accountants and auditors are key to a business' financial health since they are tasked with forecasting and tracking revenue and expenses as well as preparing accurate final reports and ensuring that any taxes or other fees are paid properly and on time. This means knowing the appropriate laws and regulations to ensure all financial statements are in compliance. Many accountants and auditors specialize either by focusing on a specific industry such as health care or manufacturing or by concentrating on a specific type of accounting such as risk management. Public accountants, a subset of this occupation, perform a wide range of services including accounting, auditing, and tax consulting for corporations, governments, and individuals for financial documents that by law must be made public. Management accountants, also known as industrial, corporate, or private accountants, perform a separate set of duties by preparing and analyzing financial documents that are for internal use only. Internal auditors are tasked with looking out for financial mismanagement and for identifying ways to eliminate inefficiencies and waste.

Growth: In 2012, about 1.3 million people held jobs as accountants or auditors. Employment of accountants and auditors is projected to grow 13 percent from 2012 to 2022, which is about as fast as the average for all other occupations. In 2012, the median annual wage for accountants and auditors was \$63,550, with the lowest 10 percent earning less than \$39,930, and the top 10 percent earning more than \$111,510.

Skills: Accountants and auditors generally have at least a bachelor's degree in accounting or a related field, with many universities offering specialized programs such as degrees in internal auditing. It is important to note that every accountant who files a report with the Securities and Exchange Commission is required to be a Certified Public Accountant (CPA), which typically requires additional coursework beyond a bachelor's degree. Accountants and auditors typically are good at math, possess both strong analytical and organizational skills, and are detail oriented.

4. Market Research Analysts and Marketing Specialists

Analyzing social and economic trends, defining and attracting new customers and clients and assessing what those customers and clients want constitute the fundamental work of a market research analyst. They mine databases, gather data on consumer demographics, study consumer buying preferences and interests, and write reports to help a company target the right audience with the right message. They also research competitors, analyze pricing strategies, and monitor marketing methods. It's a job that requires the ability to crunch numbers and ensure those numbers work to inform a broader strategy for attracting and retaining customers or clients.

Marketing specialists help take that data and craft compelling tactics and strategies via a variety of mediums, including digital channels such as websites and social media, as well as print and broadcast.

Growth: Because of the vital role market research analysts and marketing specialists play in an organization's overall health, it is an occupation on the rise. The Bureau of Labor Statistics projects this occupation category will increase by 32 percent from 2012 to 2022, which is a much faster rate than all other occupations. The increased use of data and market research to understand consumer preferences is what is fueling this growth. According to the Bureau of Labor Statistics, the national median annual salary for a market research analyst in 2012 was \$60,300. In 2012, the lowest 10 percent earned less than \$33,280, and the top 10 percent earned more than \$113,500.

Job Skills: Becoming a market research analyst typically requires a bachelor's degree in market research or a related field such as math, statistics, or computer science. Other important coursework includes communications and social sciences such as economics, sociology, and psychology. Key traits of a marketing specialist include an eye for detail, strong analytical skills, and proficiency as a writer and a communicator.

5. Cost Estimators

The work of a cost estimator is critical to ensuring a project – whether it is a building, a product, or a service – is created in the most cost-efficient manner possible. This requires cost estimators to collect and analyze data to accurately estimate what resources such as time, money, and materials a project will require. To cull all the relevant data needed to estimate the appropriate cost and time of a project, cost estimators often travel to job sites, review blueprints and other technical documents as well as consult and collaborate with engineers, architects, clients, contractors, and other industry experts. Through this data collection and analysis, cost estimators also determine ways to cut costs to improve profits. Oftentimes they will use computer software, including databases and budget modeling. Cost estimators typically specialize in a certain industry. For instance, construction cost estimators work on projects such as bridges, housing developments, or retail centers. Manufacturing cost estimators focus on the development, design, and production of a company's products, which could be anything from a washing machine to a bicycle helmet.

Growth: More companies are looking for new ways to cut costs to boost their bottom lines, which is driving the demand for cost estimators. The Bureau of Labor Statistics is projecting that employment of cost estimators will grow by 26 percent between 2012 to 2022, which is much faster than the average for all occupations. In 2012, there were some 202,000 cost estimators in the United States. The median annual wage is \$58,860, with the lowest 10 percent making \$34,520 and the top 10 percent earning \$96,670.

Skills: Becoming a cost estimator typically requires a bachelor's degree with a strong emphasis in mathematics. A construction cost estimator would need an undergraduate degree in a related field such as engineering or construction management. A manufacturing cost estimator, on the other hand, would likely have a major in statistics, physical sciences, engineering, or mathematics. Key qualities of a cost estimator include attention to detail, strong time-management skills, as well as analytical abilities. Because they must produce detailed reports, strong writing is also a must-have for cost-estimators.

6. Computer Network Architects

Think of computer network architects as the urban planners of the digital world. They are tasked with creating the structure and systems to ensure computers and other digital devices can communicate easily and effectively with each other. These networks can be as small as linking two offices together or as large as a system that spans the globe. To design these data communication systems, network architects need to understand both the organization's goals as well as possess technical know-how. Duties include creating a plan for a data communication systems and explaining how that system will best meet an organization's needs. Computer network architects must evaluate a wide range of issues from hardware, such as routers; to software; system design; and security measures. To determine a computer system's future needs, they must constantly monitor and analyze its current data traffic and performance.

Growth: According the Bureau of Labor Statistics, employment for computer network architects is projected to grow by 15 percent between 2012 and 2022. Demand is increasing for these types of jobs as more companies expand their use of mobile and wireless networks. The need to constantly upgrade current networks and the growth in health-care technology is also fueling demand in this field. In 2012, the median annual wage was \$91,000, with the lowest 10 percent earning \$52,580 and the top 10 percent earning more than \$141,590.

Skills: Typical bachelor's degrees for computer network architects include computer science, engineering, or information systems. Strong interpersonal and leadership skills as well as attention to detail and an analytical mind are all hallmarks of a computer network architect. Organization skills are also a must as computer network architects must be able to coordinate and plan complex systems using a variety of technologies.

7. Management Analysts

The work of a management analyst is that of a professional problem solver. Whether they work for a company or are brought in as consultants, management analysts look for ways to improve efficiency and bolster performance. To do this, they must understand a company's operations, conducting interviews with employees and managers, and analyzing financial data and operations. This often translates into frequent travel for on-site visits and interviews. Management analysts then use all the information they collect to devise new ways – whether it be improved procedures or a revamped organizational structure – to run an enterprise better. A key part of the job is not only making recommendations but also helping the company's management team implement the recommendations and then monitor results. Specialization is common for management analysts whether it be focusing on certain areas such as reorganizations or working for a specific industry such as health care or government agencies. Management analysts also must spend a portion of their time securing work by writing proposals or bidding on contracts solicited by companies hoping to improve their business operations.

Growth: Between 2012 and 2022, management analyst employment growth is projected to be 19 percent, which is faster than average growth, according to the Bureau of Labor Statistics. This growth is being driven, in large part, by the demand for consulting services as more businesses and organizations look for ways to streamline processes to improve productivity. According to the Bureau of Labor Statistics, the growth of international business will boost demand for management analysts as more companies open up offices abroad. Demand will also increase as more government agencies look for ways to improve efficiency. Small consulting firms with a specialized focus are expected to grow at an especially fast clip. It is important to note that many management consultants are self-employed. Of the 718,700 management analyst jobs in 2012, about 21 percent were estimated to be self-employed. The median annual wage for management analysts was \$78,600 in 2012. The lowest 10 percent of management analysts earned less than \$44,370 while the top 10 percent earned more than \$142,580.

Skills: Entry-level management analysts typically need a bachelor's degree in a related subject such as business, economics, political science, management, finance, accounting, or marketing. Other related degrees include psychology, government, English, or computer and information science. Among the most important traits of management analysts is the ability to analyze a wide range of data and come up with creative solutions to complex issues. They must also have strong communication and interpersonal skills in order to effectively draw out information needed to uncover organizational issues and effectively express why and how changes must be made. Since management analysts often work under tight deadlines, they must also have strong time management skills. Because of the high earning potential, competition can be stiff for management analyst positions. Those who are fluent in a foreign language or have specialized expertise often are better positioned to secure a job in the field.

8. Personal Financial Advisors

As the U.S. population grows older, the need for personal financial planners grows as well. These advisors assess their clients' financial needs, helping them invest wisely and appropriately prepare for retirement. This job requires an intimate knowledge of investment options along with the ability to listen and understand a person's values and financial goals. Personal financial advisors provide recommendations on everything from saving for college education to buying life insurance to estate planning. They must review a wide range of investments so they can provide knowledgeable counsel on how clients can best invest their money whether it be in stocks, bonds, life insurance, or other avenues. As part of their suite of services, financial advisors must monitor and review investment performance and recalibrate investment strategy based on returns as well as on changing life circumstances such as marriage, children, divorce, or job loss. This requires providing their clients with written updates as well as having at least annual meetings to review portfolio performance and to refine investment strategies. To gain new clients, financial advisors must also market their offerings through a variety of channels including seminars and networking events.

Growth: In 2012, there were 223,400 personal financial advisors, with about 20 percent of those being self-employed. The projected growth for personal financial advisors is 27 percent from 2012 to 2022, which is much faster than it is for other professions. The Bureau of Labor Statistics attributes much of this growth to the aging population as Baby Boomers increasingly seek out assistance for their retirement planning. Longer life spans, which translate into longer periods of retirement, as well as the decline in corporate and public pensions, are also boosting the need for personal financial advisors. The median annual salary for personal financial advisors was \$67,520 in 2012, according to the Bureau of Labor Statistics. The lowest 10 percent earned less than \$32,280 while the highest 10 percent earned more than \$187,200.

Skills: Most personal financial advisors have at least a bachelor's degree in a related field of study such as finance, business, accounting, economics, mathematics, or legal studies. Courses in taxes, risk management, estate planning, and investments are helpful as well. Because personal financial advisors work so closely with their clients, it is critical that they have strong interpersonal skills so they can establish trust and keep the lines of communication open. Strong speaking skills, whether it be one-on-one or in front of large group, are also important for personal financial advisors. Equally important is a facility for numbers and the ability to analyze a variety of data points from economic trends to regulatory changes.

9. Elementary School Teachers, Except for Special Education

Teaching elementary students is not just about reading, writing and arithmetic. It involves creating the proper foundation for a lifetime of learning. Study after study has shown the importance of elementary school education in helping develop the skills needed to succeed in school and throughout life.

Because of its critical importance in preparing students for middle school and beyond, the work of elementary school teachers is both rewarding and demanding. These teachers are tasked with preparing their young students by teaching them math and reading as well as by helping them develop their social skills. This requires both command of the classroom during school and work after school to craft thoughtful and effective lesson plans. Elementary school teachers must also be able to assess and evaluate their students to ensure they are reaching their educational and developmental milestones. If a child is struggling, teachers also must be able to work collaboratively with families and school administrators to address any specific learning or behavioral challenges.

Growth: Because of increased enrollments, the employment for kindergarten and elementary school teachers is expected to grow by 12 percent from 2012 to 2022. In some parts of the country, schools are limiting class sizes to improve teacher-student ratios, which is also boosting demand for teachers. While the number of students enrolling in kindergarten and elementary school is expected to rise in the coming years, the uncertainty of local and state budgets that fund public education systems could temper demand. Another economic downturn could impact state and local budgets, forcing them to reduce costs and eliminate positions. In addition, opportunities will vary by region with better job prospects for teachers in the South and West. More openings are projected in urban and rural school districts compared to suburban ones. The annual median wage for an elementary teacher was \$53,400 in May 2012, with the lowest 10 percent earning \$35,630 and the highest 10 percent earning more than \$83,160.

Skills: All states require elementary school teachers to have a bachelor's degree in elementary education. Some of the classes required in this major include education theory and psychology. While teachers at private school aren't required to meet state requirements, most teachers at those schools do have at least a bachelor's degree. Beyond training, elementary school teachers must have the creativity to engage students and the patience and determination to constructively direct and educate a class of young minds. Strong communication skills are a must for any successful elementary school teacher.

10. Financial Analysts

The work of a financial analyst is that of a weathercaster for investments. It requires not only the ability to read a spreadsheet but also the savvy to study and understand business and economic trends shaping financial markets. The stakes can be high as the advice financial analysts give can inform strategies for much of the financial industry, including banks, pension funds, mutual funds, as well as insurance and security firms. They must be able to identify when an economic storm is brewing as well as craft investment strategies that minimizes risk and maximizes returns – and be able to justify that strategy both with written reports and in meetings with investors.

There are two categories of financial analysts: buy-side and sell-side. Buy-side analysts develop strategies for institutional investors, which are companies or organizations with large sums of money to invest in hedge funds and mutual funds as well as nonprofit organizations with large endowments. As the name indicates, sell-side analysts are agents that sell stocks, bonds, and other investments primarily to individual consumers.

Because depth of knowledge is key for financial analysts, most have specific focus areas whether it be in an industry sector or geographic region.

Growth: As investment portfolios increase and become complex, the need for financial analysts is growing as well. According the Bureau of Labor Statistics, employment for financial analysts is expected to grow by 16 percent from 2012 to 2022, which is faster than the average for other occupations. The growing global economy is making those who have expertise in emerging geographic regions especially desirable. Despite the growth in employment, the high salaries financial analysts earn mean that competition is fierce for these positions. The median annual wage was \$76,950 as of May 2012. Still, the top 10 percent of financial analysts earned more than \$148,430 while the lowest 10 percent earned less than \$47,130.

Skills: Most financial analyst positions require a bachelor’s degree in a related field such as economics, finance, accounting, statistics, engineering, or mathematics. Strong analytical and math skills are needed to properly evaluate potential investments. Financial analysts should also be detail-oriented and decisive with the ability to communicate complex information clearly and effectively.

Research Team

Dr. Josh Shapiro is the director of research and evaluation for the Center for Research on the Regional Economy at UC San Diego Extension. His current evaluation projects cover a wide range of topics, including health care, advanced manufacturing, STEM education, and the role of philanthropy in economic development. He has worked on a number of labor market and innovation reports, including a grant from the National Science Foundation on the role of social and cultural dynamics in regional economic development. Dr. Shapiro was one of the core evaluators on the effectiveness of the Department of Labor's \$500 million WIRED initiative, which involved 15 regions across the United States. He also leads Extension's market research team, which focuses on assisting educational programs to conduct market research and curricula development for workforce and education training programs. Dr. Shapiro has taught classes on research methodology for UC San Diego and is trained in both qualitative and quantitative methodologies with a specialization in survey design. Before attending graduate school, Dr. Shapiro worked in the conflict resolution field in Washington D.C., served as a public school teacher in South Carolina, and built homes with Habitat for Humanity in Louisiana. Dr. Shapiro holds a Ph.D. and M.A. in sociology from the UC San Diego and a B.A. in social thought and analysis from Washington University in St. Louis.

Dr. Sundari Baru is an economics consultant specializing in the areas of economic development policy and economic impacts of the innovation economy and workforce development. She works on research projects related to community economic development and workforce analysis with UC San Diego Extension. Previously, she was research director at the Center on Policy Initiatives, a research and policy think tank in San Diego that advocates for economic justice. While there, she worked on issues related to the living wage and analysis of regional economic development policy. She holds a Ph.D. in economics from the University of Michigan, Ann Arbor.

Gladys Bustos-Selfridge is a research associate with UC San Diego Extension. She has led numerous outreach surveys, interviews, and focus group efforts. Selfridge has experience working with workforce agencies, education systems, high school districts, community colleges, and universities. She has spearheaded efforts to expose jobseekers to careers in the manufacturing sector, collaborating with industry, workforce centers, educators, and other stakeholders. Selfridge was one of the project managers and researchers in the 2012 San Diego Regional Manufacturing Sector Report funded by the San Diego Workforce Partnership, which involved interviewing more than 280 manufacturers. She made strong contributions to the South and East County Comprehensive Economic Development Strategy (CEDS) and has provided expertise to SANDAG for their 2012 Traded Industry Clusters in the San Diego Region report. She earned her bachelor's degree at UC San Diego, graduating with honors in 2009.