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THE ADVISORY

2024 STEM Job Growth Index

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2024 STEM Job Growth Index

Since 2016, RCLCO has published the STEMdex, an annual analytical ranking of U.S. metropolitan areas that evaluates their potential for future growth in Science, Technology, Engineering, and Mathematics (STEM) industries. These rankings identify markets with the strongest prospects for STEM employment and industry expansion, providing valuable insights for stakeholders across sectors.

STEM industries are vital drivers of innovation and economic growth. These jobs are among the highest-paying and most impactful, attracting a diverse, highly educated workforce. Nationwide from 2019 to 2023, employment in STEM roles grew by 2%, outpacing the 0.9% growth in non-STEM jobs. Salaries in STEM fields averaged $112,800 annually, nearly double the $61,600 average for non-STEM roles.[1]

RCLCO's STEMdex rankings focus on the 50 largest Metropolitan Statistical Areas (MSAs), which account for nearly 70% of U.S. STEM jobs and 60% of all employment nationwide. The analysis forecasts the concentration of STEM job growth over the next five to ten years, making it a critical tool for policy makers, urban planners, real estate developers, and corporate leaders.

The Strategic Importance of STEMdex

RCLCO has been a leading advisor on property investment, planning, and real estate development for nearly six decades. The firm's work is deeply impacted by the growth of the STEM industry, which drives demand for housing, office space, and infrastructure. The STEMdex model evaluates 24 factors, including economic trends, workforce quality, tax environments, and quality of life metrics, to predict where STEM industries will flourish. These insights inform decisions on municipal policies, talent acquisition strategies, and urban development plans.

Trends Driving STEM Job Growth

Over the past five years, Professional Services, Information, and Financial Services have driven the most significant gains in STEM jobs, collectively adding 180,000 roles annually. While STEM employment in Manufacturing and Natural Resources has declined[2], emerging technologies such as Artificial Intelligence (AI) and green technology are creating new opportunities:

» **Artificial Intelligence:** AI is revolutionizing STEM fields by enabling faster research and development, enhancing automation, and creating new job categories. AI-driven sectors are experiencing 4.8 times greater labor productivity compared to those without AI exposure. Notably, job postings in generative AI rose by 750% between April 2022 and April 2024[3]. AI advancements, such as streamlining drug discovery processes[4], highlight its transformative impact across industries.

» **Green Technology:** Climate resilience and sustainability efforts are fueling demand for STEM roles in renewable energy, green manufacturing, and sustainable infrastructure. Positions such as renewable energy engineers and battery technicians are increasingly sought after as governments and businesses prioritize combating climate change.

[1]BLS Occupational Employment and Wage Statistics
[2]BLS Occupational Employment and Wage Statistics NAICS Sector Codes
[3]PWC 2024 Global AI Jobs Barometer
[4]Harnessing AI to Accelerate Innovation in the Biopharmaceutical Industry; ITIF

Challenges Amid Tech Layoffs

Despite strong overall growth, the tech sector has faced headline-grabbing layoffs. Between 2022 and 2024, 554,000 employees of tech firms were laid off due to factors such as rising interest rates, inflation, and shifts in venture capital priorities. However, much of the downsizing affected non-technical roles, including HR and communications, which often transition to other industries. The long-term outlook for STEM jobs remains positive as technology adoption and innovation continue to expand.

The Cities Poised to Lead

2024 STEM Job Growth Index (STEMdex)			
RANK	CITY	RANK	CITY
1	Austin, TX	11	Dallas, TX
2	Seattle, WA	12	San Diego, CA
3	Denver, CO	13	Nashville, TN
4	San Francisco, CA	14	Orlando, FL
5	Raleigh, NC	15	Charlotte, NC
6	Portland, OR	16	Minneapolis, MN
7	San Jose, CA	17	Richmond, VA
8	Washington, DC	18	Atlanta, GA
9	Boston, MA	19	Baltimore, MD
10	Salt Lake City, UT	20	Phoenix, AZ

Austin Leads the Rankings

For the sixth time in eight years, Austin, Texas, has secured the top spot in the STEMdex. Known for its dynamic economy, skilled labor pool, and innovative culture, Austin excels in economic and workforce quality metrics. The city also ranks in the top five for quality-of-life factors, benefiting from its cultural vibrancy and outdoor amenities. However, challenges such as high office costs and limited airport connectivity could impact its future competitiveness.

Top Performers: Seattle, Denver, & San Francisco Among Others

1

AUSTIN, TEXAS

» Prior Year: #1

» Population[5]: 2.47 Million

» STEM Location Quotient[6]: 1.81

Austin has earned its nickname "Silicon Hills" for its thriving tech economy. Home to major players like Dell, Oracle, and Tesla, Austin has become a hub for startups and tech giants alike, thanks to its pro-business environment and vibrant culture. The city boasts a robust employment market in software development, IT services, and emerging fields like artificial intelligence and biotech. Austin's relatively affordable cost of living (compared to other tech hubs) and its highly educated workforce from institutions like the University of Texas contribute to its appeal as a tech hotspot. Austin excels in economic and workforce quality metrics.

[5]American Community Survey 2023 ACS 1-Year Estimates Detailed Tables; MSA level-population
[6]Bureau of Labor Statistics NAICS

2

SEATTLE, WASHINGTON

» Prior Year: #3

» Population[5]: 4.04 Million

» STEM Location Quotient[6]: 2.06

Seattle, home to tech giants like Amazon and Microsoft, anchors the Pacific Northwest as a leading center for innovation and technology. Its employment market is diverse, ranging from cloud computing and AI to gaming and e-commerce. The city's rich ecosystem of startups benefits from access to top-tier talent and venture capital. Seattle's focus on sustainability and green tech adds another layer of opportunity in its evolving economy, while its high quality of life continues to attract skilled workers despite rising living costs. Seattle is among the top ten metros in economic factors, workforce quality, quality of life, and business climate.

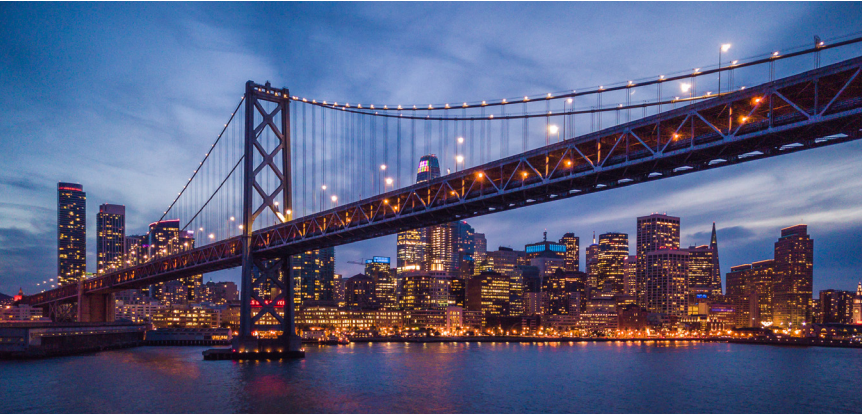
3

DENVER, COLORADO

» Prior Year: #2

» Population[5]: 3.01 Million

» STEM Location Quotient[6]: 1.57

Denver's tech economy has been steadily growing, earning it recognition as a rising star in the innovation landscape. Known for its dynamic blend of startups and established firms in aerospace, cybersecurity, and renewable energy, Denver's employment market is attractive to STEM professionals seeking a balance between career opportunities and outdoor lifestyle. With favorable business policies, an expanding infrastructure, and a talented workforce from nearby universities, Denver is carving out a strong position as a regional tech leader. Denver scores highly in economic factors, workforce quality, and business climate, although the high cost of living and urban sprawl weigh on quality of life metrics.

4

SAN FRANCISCO, CALIFORNIA

» Prior Year: #6

» Population[5]: 4.57 Million

» STEM Location Quotient[6]: 2.07

San Francisco remains the epicenter of the tech industry, driven by Silicon Valley's legacy and the presence of companies like Google, Facebook (Meta), and Salesforce. Its employment market is unparalleled in offering roles in cutting-edge fields such as fintech, AI, and software development. The city's proximity to venture capital resources and leading universities like Stanford and Berkeley keeps it at the forefront of innovation. Despite its high cost of living, San Francisco attracts top-tier talent globally, maintaining its dominance in the tech economy. While economic factors and workforce quality rank among the highest in the nation, the high cost of doing business prevents the Bay Area from scoring at the top of our model.

5

RALEIGH, NORTH CAROLINA

» Prior Year: #4

» Population[5]: 1.51 Million

» STEM Location Quotient[6]: 1.77

Raleigh is a cornerstone of North Carolina's Research Triangle, which includes Durham and Chapel Hill. The city's tech economy thrives on sectors like biotechnology, software development, and data analytics, supported by proximity to research institutions like NC State University. Raleigh's employment market is bolstered by its affordability and high quality of life, making it a magnet for tech talent and companies relocating from pricier hubs. Its collaborative ecosystem has positioned it as a rising contender in the national tech scene. Home price to income ratio and the rent index are the only negatives weighing down Raleigh.

6 PORTLAND, OREGON

» Prior Year: #7

» Population[5]: 2.51 Million

» STEM Location Quotient[6]: 1.42

Portland's tech economy, often associated with hardware and semiconductor industries, has diversified into software development, green technology, and e-commerce. Companies like Intel and Nike contribute significantly to its employment market. The city is also a hub for startups focused on sustainability and innovation, benefiting from its eco-conscious culture and strong support for small businesses. Portland's affordability and lifestyle appeal make it a preferred choice for tech professionals looking for alternatives to traditional hubs. Portland scores the highest in our quality-of-life rankings, although the local cost of doing business is a significant drawback.

7 SAN JOSE, CALIFORNIA

» Prior Year: #8

» Population[5]: 1.95 Million

» STEM Location Quotient[6]: 3.60

San Jose, the heart of Silicon Valley, is synonymous with technological innovation. Home to tech behemoths like Apple, Cisco, and Adobe, the city boasts one of the most robust employment markets in the world for software engineers, data scientists, and IT professionals. With unparalleled access to venture capital and a culture of entrepreneurship, San Jose continues to be a global leader in the tech economy. Despite high salaries, the cost of living significantly dampens quality-of-life scores, and the high cost of office space remains a barrier to entry.

8

WASHINGTON, D.C.

» Prior Year: #5

» Population[5]: 6.3 Million

» STEM Location Quotient[6]: 1.86

Washington, D.C., has a unique tech economy heavily influenced by its proximity to federal government agencies. The city excels in cybersecurity, data analytics, and IT services, with significant opportunities in government contracts and defense-related technology. The employment market is further supported by a growing private tech sector and venture capital investment in the region. Washington's diverse economy and well-educated workforce make it an attractive hub for tech professionals, particularly those interested in policy-driven innovation. The nation's capital is among the best in workforce quality and scores admirably in economic factors and quality of life although business taxes and office rents are a negative factor.

9

BOSTON, MASSACHUSETTS

» Prior Year: #9

» Population[5]: 4.92 Million

» STEM Location Quotient[6]: 1.77

Boston's tech economy is deeply intertwined with its world-renowned educational institutions like MIT and Harvard. The city is a powerhouse in biotechnology, robotics, and artificial intelligence. Its employment market offers abundant opportunities in cutting-edge research and development, attracting both startups and established companies. Boston's thriving innovation ecosystem benefits from strong venture capital activity and collaborations between academia and industry. While the cost of living is high, Boston continues to draw talent seeking careers in pioneering technologies. Boston is among the tops in workforce quality.

[5]*American Community Survey 2022: ACS 1-Year Estimates Detailed Tables; MSA level-population*
[6]*Bureau of Labor Statistics NAICS*

10 SALT LAKE CITY, UTAH

» Prior Year: #12

» Population[5]: 1.27 Million

» STEM Location Quotient[6]: 1.40

Salt Lake City has emerged as a rapidly growing tech hub, often referred to as the heart of "Silicon Slopes." The city's tech economy is driven by sectors like cloud computing, software development, and fintech, supported by a low cost of living and a business-friendly climate. Companies like Adobe and Qualtrics have established significant operations in the region, while the local universities supply a steady stream of skilled graduates. Salt Lake City's robust employment market and quality of life make it an increasingly attractive option for tech professionals. Salt Lake City has the second-best quality of life score in our model, buoyed by relative affordability, access to cultural amenities, and reasonable commute times.

Rising Stars and Notable Shifts

Phoenix entered the Top 20 rankings this year, replacing Philadelphia. Population growth, a diversifying economy, and relatively lower office costs have bolstered Phoenix's position as a rising STEM hub. Conversely, Philadelphia's drop reflects challenges in economic momentum and affordability, which are critical drivers of competitiveness.

The 2024 STEMdex highlights the dynamic nature of metro area performance, influenced by shifting economic conditions, workforce trends, and lifestyle preferences. Austin's sustained leadership underscores the importance of balancing economic vitality, workforce quality, and quality of life. Meanwhile, the rise of metros like Phoenix demonstrate the power of favorable cost structures and demographic trends in propelling emerging markets.

For businesses, governments, and developers, the STEMdex provides a roadmap to identify opportunities, anticipate challenges, and align strategies with the future of STEM industry growth. As the STEM sector continues to drive innovation, these insights will be invaluable for shaping the next generation of cities and economies.

Methodology

RCLCO analyzed 24 metrics from various sources, including the US Census Bureau, Bureau of Labor Statistics, Oxford Economics, Numbeo, The Tax Foundation, Costar, and the Federal Aviation Administration. These metrics fall into four categories and are weighted based on their historical correlation to STEM employment growth. The categories include:

1. **STEM Trends**: Examines population growth, industry-specific growth, and STEM wages
2. **Workforce Quality**: Evaluates educational attainment and millennial/Gen-Z population factors
3. **Quality of Life/Health**: Incorporates cost of living, walk scores, and commute times
4. **Business Climate**: Considers factors such as office costs and the local tax environment. Notably, while Business Climate inversely correlates with current STEM employment concentrations, it remains a significant factor for firms and workers evaluating relocation or expansion opportunities

To determine the weights for each category, RCLCO reviewed past results of the STEMdex and STEM employment growth in the studied markets. This analysis demonstrates that markets with a high concentration of employment in a specific STEM industry tend to attract further investment from new firms. This is largely due to these markets' access to skilled talent, existing logistical infrastructure, and desirable lifestyle amenities. Consequently, factors related to established STEM concentrations and robust economic infrastructure receive a high weighting in the model, as they are likely to continue to fuel job growth in the sector. The other highest weighted factors relate to what will attract future talent such as access to education, commute mode variety, and home prices.

Currently, the highest concentrations of STEM employment in the U.S. are found in cities like San Jose (Silicon Valley), Washington, D.C., San Francisco, Austin, and Seattle. Other top markets include Boston, Raleigh, and Denver, which benefit from young, educated populations. Quality of life remains a crucial factor for families and workers choosing where to live and work, with hybrid and remote employment emerging as key drivers of migration. Knowledge-based jobs, which often allow for remote work, have contributed to suppressed office attendance in high-cost markets while driving growth in more affordable cities offering similar lifestyle amenities.

Despite current job concentrations being a critical consideration, RCLCO designed the STEMdex to forecast where growth will occur over the next five to ten years. By balancing factors like emerging trends, workforce quality, quality of life, and business climate, the model predicts which markets are best positioned for future STEM employment expansion. This forward-looking approach ensures that the STEMdex remains a valuable tool for anticipating shifts in the evolving STEM landscape.

Implications for Policymakers and Businesses

Policymakers and local stakeholders can use employment projections as a means of aligning education, infrastructure, and economic development. Infrastructure policies informed by employment projections can help support future economic needs. For example, growth in logistics or e-commerce may require investments in transportation networks, broadband expansion, or smart city initiatives. Similarly, rising demand for clean energy jobs could guide investments in renewable energy infrastructure, such as solar farms and EV charging networks – a significant consideration in land allocation decisions. Additionally, investments in affordable housing, public transit, and relocation incentives can enhance workforce mobility in response to regional job growth. Economic policies can use employment projections to incentivize high-growth sectors and address regional disparities. Identifying industries poised for expansion, such as biotech, green energy, or AI, allows policymakers to target tax incentives, subsidies, or grants to stimulate these areas.

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RCLCO leverages quantitative analytics and a strategic planning framework to provide end-to-end business planning and implementation solutions at an entity, portfolio, or project level. With the insights and experience gained over 50 years and thousands of projects—touching over $5B of real estate activity each year—RCLCO brings success to all product types across the United States and around the world.

RCLCO has expertise in three major areas: real estate analytics, investment advisory, and enterprise strategy. Our multidisciplinary team combines real-world experience with the analytical underpinnings of thousands of consulting engagements. We develop and implement strategic plans that strengthen our clients' positions in a market or sector, add value to a property or portfolio, and mitigate price erosion.

Since we first opened our doors, RCLCO has been governed by our core values. We believe that excellence, integrity, honesty, respect, exceeding expectations, and quality are great goals that all firms must possess. These goals and values shape the culture and define the character of our firm. They guide how we behave and make decisions. Our extensive network provides us with a unique and comprehensive outlook on the industry, not to mention unmatched access to the best minds in real estate.

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