All STEM Connections WORKFORCE SOLUTIONS MARKET OVERVIEW

UNDER PRESSURE: OVERCOMING WORKFORCE CHALLENGES IN AN UNPREDICTABLE LABOR MARKET

2025

TABLE OF CONTENTS

ABOUT THIS REPORT	3
U.S. OVERVIEW	5
INDUSTRY SPOTLIGHT	
Advancing Life Sciences With Al	8
Shaping Emerging Trends In Technology1	0
A Renewed Focus On The Skills Powering The Energy Sector	11
TOP SOLUTIONS	3
CITATIONS 1	5

ABOUT THIS REPORT



he labor market is under constant pressure, shaped by rising costs, shifts in talent availability, and the disruptive possibilities of AI and automation. Companies must navigate these changes while securing the right talent at the right time-a task that's becoming increasingly complex in an unpredictable hiring market.

These challenges are redefining workforce priorities. Over the next

five years, nearly two-fifths of workers' current skill sets are expected to evolve or become obsolete.² In light of these developments, businesses are prioritizing upskilling and reskilling initiatives. Failing to adapt could leave companies

As of early 2025, there were nearly 8 million job openings across the country, with more than half requiring some level of STEM proficiency.⁴

struggling to fill critical roles and remain competitive in an evolving job market. As hiring complexities increase, organizations need agile, data-driven solutions to optimize their talent acquisition and management efforts.

Economic factors, including rising costs and inflation, further complicate hiring. Global unemployment remained at a historic low of 5 percent in 2024, underscoring the continued challenges of a tight labor market.³ Meanwhile, demographic shifts—such as aging populations in higher-income economies and expanding working-age in STEM education, these businesses risk slowed innovation and reduced competitiveness in an already volatile market.

populations in lower-income regions—are also reshaping workforce

The impact is especially pronounced for STEM businesses, which are

expertise, have been among the hardest hit by the labor shortage. As

experiencing acute talent shortages across fields like life sciences, technology, and energy. These sectors, which rely heavily on STEM

dynamics. These trends are driving demand for skills in talent

management, teaching, mentoring, and adaptability.

In this edition of AIISTEM Connections' Labor Market Overview. we examine the key factors shaping today's labor market and offer strategic solutions backed by our industry-leading expertise. As part of our expansive market research, we provide the latest data and economic insights affecting the United States with a focus on key trends impacting STEM businesses.

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workforce strategies, including

stronger industry-academic

partnerships and investment

ABOUT THIS REPORT

Skills on the rise, 2025-2030¹

Share of employers that consider skills to be increasing, decreasing, or remaining stable in importance.



About AllSTEM Connections

Connecting businesses with highquality talent.

AllSTEM Connections takes the time to understand the needs of STEM professionals and companies to make the best connections in STEM-related industries. We are part of the ActOne Group of Companies, whose mission is to become the business community's global partner in providing forwardthinking talent and resource management solutions. By leveraging the expertise of the various companies of the ActOne Group, our clients can access the powerful potential of today's diverse global workforce.

Decreasing use Stable use Increasing use

AllSTEM Connections Market Study: 2025 Report

U.S. OVERVIEW

Evolving trade policies, ongoing inflation, a skilled talent shortage, and the rise of artificial intelligence are reshaping the U.S. economy. As a result, businesses are adjusting their workforce strategies, focusing on flexibility to remain competitive in a changing market. With hiring and employment models continuing to shift, both employers and workers will need to adapt to new challenges and opportunities.

Trade policy has once again become a defining force in the labor market. With new tariffs in place or under consideration, industries that rely on international supply chains are reassessing their workforce needs. The manufacturing and logistics sectors are expected to bear the brunt of this effort, with some economists warning that these trade tensions could continue to impact the job market for some time to come.⁶ The uncertainty surrounding trade agreements has made longterm workforce planning more challenging, forcing businesses to weigh short-term cost management against long-term growth strategies. At the same time, it could also drive a historic investment in American jobs. Recently, Taiwanese semiconductor manufacturer TSMC announced that it is investing \$100 billion in U.S. chip plants, creating tens of thousands of jobs, while Apple is investing \$500 billion to add 20,000 jobs across manufacturing and Al infrastructure.⁷⁸ Still, trade uncertainty is adding complexity to an already challenging economic outlook, with inflation remaining a persistent concern years into the post-pandemic recovery. The annual inflation rate rose to 3 percent in January, up from 2.9 percent in December, impacting both business operations and workers' financial stability.¹⁰ Though wages have increased in recent years, they have struggled to keep pace with the rising cost of living, placing significant strain on middle-income workers.¹¹ In response, employees are seeking additional income sources, demanding more flexibility, or transitioning to new industries. Employers, meanwhile, are facing the difficult task of balancing competitive wages with profitability, making workforce retention a challenge. As businesses manage these shifts, many are turning to alternative hiring models—such as contingent staffing—to maintain agility in an unpredictable market.



Difference between the inflation rate and growth of wages⁹

U.S. OVERVIEW

At the same time, employers are contending with a widening skills gap. Key industries such as healthcare, accounting, and logistics face ongoing talent shortages exacerbated by federal job cuts and demographic shifts. Many businesses are unable to fill critical positions, leading to productivity bottlenecks and increased competition for qualified professionals. In response, organizations are investing in upskilling initiatives and

leveraging technology to fill gaps. For instance, IBM's SkillsBuild program offers over 1,000 free online courses in areas like artificial intelligence, research indicates that more than 30 percent of U.S. workers could see at least half of their tasks impacted by generative AI, while approximately 85 percent might experience some effect on their job roles.¹⁷ While these technologies create new opportunities, they also introduce uncertainty, particularly as federal labor protections surrounding AI have been rolled back, raising concerns about job security and ethical implementation.

More than 30 percent of U.S. workers could see at least half of their tasks impacted by generative AI, while approximately 85 percent might experience some effect on their job roles.¹⁶ Businesses should be careful to balance technological adoption with workforce development, ensuring that automation enhances productivity

cybersecurity, and data analysis, aiming to equip learners with market-relevant skills.¹⁴ Similarly, Amazon's Upskilling 2025 initiative commits \$1.2 billion to provide 300,000 employees with training in fields like machine learning and robotics, enhancing their capabilities for in-demand roles.¹⁵

However, skill-building initiatives take time to yield results and are unfolding against the backdrop of rapid shifts in how work is performed. Artificial intelligence and automation are accelerating this transformation, fundamentally altering job functions across multiple industries. Recent without leaving workers behind. Those who invest in structured upskilling and responsible Al integration will be best positioned to undergo this transformation.

Amid these shifts, workforce flexibility has become a strategic imperative. Organizations are turning to contingent staff, services procurement, and project-based hiring models to manage uncertainty. By leveraging a more adaptable workforce, companies can respond to economic fluctuations, access specialized skills on demand, and mitigate risks associated with long-term hiring commitments. This is particularly relevant in STEM fields, where occupations such as data science, software development, and renewable energy are projected to experience significant growth. For instance, the demand for data scientists is expected to grow by 35%, reaching 228,000 workers, while software developers are anticipated to have 136,000 job openings annually.¹⁹ The ability to scale staffing needs efficiently will be a defining factor in business resilience moving forward, favoring those who embrace flexibility, invest in skills development, and manage technological change.

Software development job postings on Indeed¹²

Percent change from February 1, 2020; 7-day moving average¹³ 120% 100 80 60 40 20 0 -20 2021
2022
2023
2024
2025

U.S. OVERVIEW



Expected growth among STEM occupations: 2022-32¹⁸



Advancing life sciences with AI

Rapid technological advancements, strategic investments, and evolving regulatory landscapes are reshaping the life sciences industry across the United States. As the demand for innovative therapies, personalized medicine, and digital health solutions continues to rise, companies are accelerating their adoption of cutting-edge technologies to improve patient outcomes and streamline operations.

A significant catalyst for this transformation is the integration of artificial intelligence across many corners of the industry. Companies are leveraging AI to expedite

drug discovery, enhance clinical trial designs, and optimize manufacturing processes. For instance, a collaborative project involving the UK Biobank and 14 pharmaceutical companies aims to utilize AI models

to analyze extensive proteomic data and improve disease prediction and personalized treatment strategies.²⁰ This integration of AI not only accelerates research and development but also addresses the growing demand for precision medicine, marking a pivotal shift toward more individualized patient care.

In the United States, there is a notable emphasis on strengthening domestic manufacturing capabilities within the life sciences sector,

underscored by Eli Lilly's announcement of a \$27 billion investment to construct four new manufacturing plants across the

> country. This move is partly in anticipation of potential import tariffs, reflecting a broader industry effort to mitigate supply chain vulnerabilities and align with the federal government's priorities to revitalize

American manufacturing.²² At the same time, lab and research and development leasing activity trended higher in 2024, with a 41 percent year-over-year increase in Q3, indicating a robust demand for research space. Employment in the industry also



reached a record 2.1 million workers by October 2024, reflecting a dynamic and fast-growing job market. While growth in the pharmaceutical and medicine manufacturing subsector has been sluggish, the biotechnology research and development sector has seen accelerated hiring, adding 10,700 jobs between January and October-a 3.7 percent increase-bringing total employment in the subsector to an alltime high of 303,000. This surge is driven by breakthroughs in cell and gene therapy, a growing need for specialized talent, and sustained investment in next-generation therapeutics, positioning the sector for continued expansion.²³



to expand their workforce

within the next three years.²¹

Advancing life sciences with AI

Flexible hiring solutions, such as leveraging MSP, recruitment process outsourcing (RPO), or statement of work (SOW) arrangements, provide a critical strategy for addressing challenges like talent shortages, fluctuating project demands, regulatory compliance needs, and the high costs associated with full-time hiring.

Looking ahead, the life sciences industry is poised for continued growth, driven by technological innovations and strategic realignments. The convergence of biology with engineering and computational sciences, known as bioconvergence, is expected to open new avenues for therapeutic development and personalized medicine.²⁵ However, the industry must navigate challenges such as regulatory uncertainties, pricing pressures, and the need for a skilled workforce adept at integrating new technologies. Flexible hiring solutions, such as contingent staffing and statement of work (SOW) arrangements, provide a critical strategy for addressing these

challenges. With shortages in specialized roles like pathologists and biotech researchers, pharma companies can leverage contract professionals to scale operations efficiently, ensuring that research, clinical trials, and regulatory processes remain on track.²⁶ SOW agreements offer further agility, allowing organizations to secure specialized expertise for defined projects without long-term overhead costs. By embracing flexible workforce models alongside Al-driven advancements and bioconvergence strategies, life sciences companies can mitigate talent shortages, accelerate innovation, and maintain a competitive edge no matter what the market has in store.



U.S. life sciences employment trends²⁴

Shaping emerging trends in technology

The technology sector is finding itself caught between rapid innovation. shifting workforce demands, and an evolving regulatory landscape. Employing approximately 5.6 million people in the U.S., the sector has maintained a low unemployment rate of 2.9 percent. significantly below the national average of 4 percent.²⁷ The rise of artificial intelligence tools is reshaping job roles, particularly in software development. Al-powered coding assistants like GitHub Copilot have boosted efficiency, allowing developers to focus on complex problem-solving rather than repetitive tasks. While these tools are designed to augment rather than replace human workers, some entry-level positions may be at risk.²⁸ As a result, companies are streamlining teams and becoming more selective in hiring, prioritizing developers who can effectively leverage AI tools alongside strong problem-solving and communication skills.

The proliferation of AI technologies is a common factor influencing labor markets in the U.S. While AI has the potential to automate routine tasks, leading to some concerns about job displacement, it also creates opportunities for workers to engage in more complex problem-solving activities. For instance, AI coding tools have increased efficiency, allowing developers to focus on more intricate aspects of their work. However, this shift necessitates a workforce adept at leveraging these new technologies, especially as the technology sector continues to expand. The tech sector is projected to have grown by 3% in 2024, adding more than 300,000 new jobs, outpacing the overall labor market. This growth is expected to create high demand for data scientists, machine learning engineers, and IT specialists.²⁹

In response to these changes, there is a growing emphasis on regulatory measures and workforce development initiatives. For example, the California Labor Federation is advocating for new regulations to protect worker privacy amidst the rise of AI-driven workplace surveillance.³⁰ Even smaller U.S. regions like Tulsa, Oklahoma, are investing in transforming into tech hubs to attract



and retain tech talent, thereby revitalizing local economies.³¹ These efforts reflect a broader recognition of the need to balance technological innovation with ethical considerations and the well-being of the workforce, ensuring that the benefits of technological advancements are equitably distributed.

A renewed focus on the skills powering the energy sector

he alobal energy utilities industry is powering a once-in-a-generation shift to a low-carbon future, operating under an imperative to increase the adoption of renewable energy sources. This shift is creating new opportunities for innovation and economic growth, but it is also presenting substantial challenges in workforce development.

In the United States, policies promoting domestic manufacturing and clean energy production have spurred a surge in demand for renewable energy in recent years. The solar sector has gained the most traction, potentially achieving a 34 percent growth rate to become the fastest-growing energy

source by the end of 2025. This expansion is forcing clean energy employers to double down in their pursuit of skilled labor to support the



which is exacerbated

and the slow pace of

workforce retraining

programs. With more

having fewer than 10

years of experience,

career development

there is a pressing need for upskilling and

utility workforce

by an aging workforce

Globally, the renewable energy sector employed about 16 million people as of 2023, with solar photovoltaics being the largest employer.³⁴

development, installation, and maintenance of renewable energy infrastructure. However, despite this growing demand, the sector faces a shortage of trained professionals,

as of 2023, with solar photovoltaics being the largest employer. However, the supply of the workforce for solar energy is lagging

to ensure industry resilience.³³ In response,

many utilities are ramping up hiring efforts

and investing in comprehensive workforce

cost efficiency and operational demands.

development programs, all while navigating

The shift towards renewable energy is also influencing employment trends. Globally, the renewable energy sector employed about 16 million people



behind demand, as educational institutions worldwide still produce more workforce for fossil fuels than for renewable energy industries.³⁵ Political dynamics are also reshaping the industry's future, with the potential to shift focus from renewable energy toward fossil fuel production. If policy incentives for renewables are weakened, workforce development efforts could be stymied, slowing the transition to a sustainable energy economy and creating uncertainty for job growth in the sector.

A renewed focus on the skills powering the energy sector

To address these challenges, there is a growing emphasis on workforce development and retraining programs. For instance, the U.S. Department of Energy has launched initiatives to reskill fossil fuel workers for clean energy jobs, recognizing the high transferability of skills from sectors like oil and gas to solar, wind, and energy efficiency. In 2023, the energy sector added more than 250,000 jobs, with clean energy accounting for 56% of these positions.³⁶ Additionally, the Infrastructure Investment and Jobs Act (IIJA) established 60 new Department of Energy programs, including 16 demonstration and 32 deployment programs, to support the transition to a clean energy economy.³⁷ These efforts highlight the importance of aligning workforce skills with the evolving demands of the energy sector to ensure a smooth and equitable transition to a sustainable energy future.

Rise in U.S. job postings across key fields since 2019³²



TOP SOLUTIONS

n a labor market defined by constant change, securing the right STEM talent takes more than just filling roles. It takes insight, strategy, and the right partner. AllSTEM Connections works closely with companies and professionals to align skills with opportunity, drawing on the broader capabilities of the ActOne Group to navigate complex workforce demands. Together, we help businesses build teams that are equipped for what's next.

With economic pressures and demographic shifts complicating hiring, AllSTEM Connections delivers data-driven insights and flexible workforce solutions to help businesses stay ahead.

Here are some of the leading strategies we're recommending to help companies combat today's challenges and foster a workforce built for tomorrow:

Identify creative solutions to uncover your spend on talent Understanding your total spend on talent is more critical than ever as businesses continue to experience high costs in a complex economy. In recent years, companies have faced financial pressures due to labor market shifts, supply chain disruptions, and inflation, leading many to scale back on capital expenditures, travel, salaries, and even workforce size. While inflation remains uncertain, the reality is that cost pressures remain. To stay ahead, organizations should consider strategic approaches to identifying and managing workforce expenses, leveraging creative solutions to uncover hidden costs and optimize spending. By gaining full visibility into your talent, you can make informed decisions that drive efficiency without compromising workforce quality.

2 Empower your workforce through Al-driven innovation Al is transforming the workplace

Al is transforming the workplace by creating new opportunities, enhancing productivity, and allowing employees to focus on more meaningful, creative tasks. Rather than replacing human talent, AI can serve as a powerful tool to augment and complement your workforce, providing better data, deeper insights, and more efficient workflows. By integrating AI-driven solutions, you can enable your teams to make smarter decisions, streamline processes, and ultimately work more effectively. As businesses continue to evolve, leveraging AI as a strategic asset will be key to driving your innovation and long-term success.

3 Future-proof your workforce through reskilling

With nearly 60 percent of workers requiring significant reskilling by 2027. businesses have no choice but to take a proactive approach to workforce development.³⁸ As industries evolve and new technologies emerge, staving competitive means anticipating skill gaps and preparing employees for the future. Investing in upskilling and reskilling initiatives ensures that talent remains relevant and fosters a culture of continuous learning and adaptability. By implementing robust training programs and educational opportunities, you can equip your team with the tools needed to handle changing job demands, drive innovation, and enhance overall productivity.

All STEM Connections

As one of North America's largest certified woman-minority-privately held staffing agencies, we are family-owned and fully solvent. Our 200 support centers and 24x7 dynamic sourcing infrastructure allow us to rapidly connect small and large employers alike with top direct hire and temporary talent without sacrificing quality matches. Our WMBE/ISO/IMAGE/UN Global Pact certifications ensure visibility to the integrity of every aspect of our hiring processes. Our high-touch customer service is called "hiring made human." After 60 years, our mission to find, to understand, and to fulfill the needs of each person we work with has never wavered.

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CITATIONS

- 1. <u>The Future of Jobs Report 2025,</u> <u>World Economic Forum, January 7,</u> <u>2025</u>
- 2. <u>The Future of Jobs Report 2025,</u> <u>World Economic Forum, January 7,</u> <u>2025</u>
- 3. <u>Global unemployment set to hold</u> <u>near historical low of 5%, ILO says,</u> <u>Reuters, January 16, 2025</u>
- 4. Job Openings and Labor Turnover - February 2025, Bureau of Labor Statistics, April 1, 2025
- 5. Job Openings and Labor Turnover February 2025, Bureau of Labor Statistics, April 1, 2025
- 6. <u>Storm clouds gather over US economy as Trump kicks off trade war.</u> <u>Reuters, March 4, 2025</u>
- Taiwan Semiconductor to Invest \$100 Billion in U.S. Chip Plants, Barron's, March 4, 2025
- 8. Apple announces plans to create 20,000 US jobs in pitch to Donald Trump, Financial Times, March 1, 2025
- 9. Difference between the inflation rate and growth of wages in the United States from December 2020 to December 2024, Statista, February 11, 2025

- 10. <u>Consumer Price Index January</u> 2025, Bureau of Labor Statistics, February 12, 2025
- 11. Difference between the inflation rate and growth of wages in the United States from December 2020 to December 2024, Statista, February 11, 2025
- 12. This chart shows just how bad things have gotten for software engineers, Business Insider, March 4, 2025
- Federal jobs went from reliable to risky overnight. Here's where Americans can find stable work now – and in the future, Marketwatch, March 1, 2025
- 14. <u>IBM SkillsBuild, IBM, February 2025</u> 15. Upskilling 2025, Amazon, October
- <u>Opskilling 2025</u>, <u>Anazon</u>, <u>October</u> <u>2, 2020</u>
 The AI Revolution Is Coming for
- <u>The AI Revolution Is Coming for</u> Your Non-Union Job, Time, October <u>10, 2024</u>
- 17. <u>The AI Revolution Is Coming for</u> Your Non-Union Job, Time, October 10, 2024
- <u>The STEM Labor Force: Scientists,</u> <u>Engineers, and Skilled Technical</u> <u>Workers, U.S. National Science Foundation, May 30, 2024</u>

- The STEM Labor Force: Scientists, Engineers, and Skilled Technical Workers, U.S. National Science Foundation, May 30, 2024
- 20. Launch of world's most significant protein study set to usher in new understanding for medicine, UK Biobank, January 10, 2025
- 21. U.S. Life Sciences Outlook 2025, CBRE, February 6, 2025
- 22. Lilly plans to invest \$27 billion in new US plants as Trump threatens pharmaceutical tariffs, Reuters, February 26, 2025
- 23. <u>U.S. Life Sciences Outlook 2025,</u> <u>CBRE, February 6, 2025</u>
- 24. <u>U.S. Life Sciences Outlook 2025,</u> <u>CBRE, February 6, 2025</u>
- 25. <u>Bioconvergence, Innovation Centre</u> Denmark, December 2022
- 26. <u>'Al can help solve global shortage of pathologists', The Times, January 12, 2025</u>
- 27. <u>Tech employment off to a strong</u> start as hiring momentum continues, <u>CompTIA, February 7, 2025</u>
- 28. <u>How AI Tools Are Reshaping the</u> <u>Coding Workforce, Wall Street Jour-</u> <u>nal, March 4, 2025</u>

- 29. <u>State of the Tech Workforce, Comp-TIA, March 2024</u>
- 30. <u>Labor's new front in the Al fight,</u> <u>Politico, March 4, 2025</u>
- 31. <u>A Case for Turning Tulsa Into the</u> <u>Next Big Tech Hub, Wired, March 4,</u> 2025
- 32. 2025 Power and Utilities Industry Outlook, Deloitte, December 9, 2024
- 33. <u>2025 Power and Utilities Industry</u> Outlook, Deloitte, December 9, 2024
- 34. <u>Renewable Energy Employment by</u> <u>Country, International Renewal Ener-</u> <u>gy Agency, October 30, 2024</u>
- 35. <u>Renewable Energy Employment by</u> <u>Country, International Renewal Ener-</u> <u>gy Agency, October 30, 2024</u>
- 36. <u>The Energy Transition Workforce</u> <u>Initiative, Federation of American</u> <u>Scientists, November 27, 2024</u>
- 37. Infrastructure Investment and Jobs Act, Department of Energy, 2024
- 38. <u>The 2020s will be a decade of</u> <u>upskilling. Employers should take</u> <u>notice, World Economic Forum, Jan-</u> <u>uary 10, 2024</u>