LSWC LIFE SCIENCES WORKFORCE COLLABORATIVE

TECONOMY PARTNERS LLC

2025 Life Sciences Workforce Trends

Evaluating Industry Talent Dynamics Amid Slower Growth and Rapid Technology Advances

The seventh edition of the *Life Sciences Workforce Trends* report identifies major themes and trends based on intelligence from three primary sources, supplemented with other data-driven insights:

- A national life sciences industry hiring survey completed by more than 500 companies, with responses received from 30 states and Puerto Rico.
- Interviews with more than 200 life sciences industry executives across 22 states and Puerto Rico.
- Analysis of 2.9 million U.S. job postings from life sciences companies over the last four years.

Four themes have emerged from these inputs and this latest assessment:

1 The U.S. Life Sciences industry is experiencing lower hiring volumes and a modest overall contraction, though the situation remains mixed across companies, with segments of the industry continuing to grow and announcing major new investments. Implications of slower growth and changing demand dynamics include a focus on strategic hires, targeted cost reductions, and investments in existing employees' skills and career development as well as automation. Companies are reporting greater ease in filling key roles.

2 AI, machine learning, and industrial automation are creating both disruptive opportunities and challenges for the industry, with significant implications for workforce and talent. Large and leading life sciences companies are more widely integrating these technologies, ahead of their small- and mid-sized counterparts.

3 Companies are placing a major emphasis on incumbent worker upskilling, reskilling, and other skills training and development in response to ongoing digital transformations and regulatory changes across and throughout the industry's value chain spanning R&D, production, and distribution.

4 Companies are placing a major and increasing emphasis on engaging students early, supporting STEM education programming, and informing career pathways and connections at all student levels. Work-based learning plays a central role in employer-student connections at postsecondary levels.

INNOVATEBIO National Biotechnology Education Center

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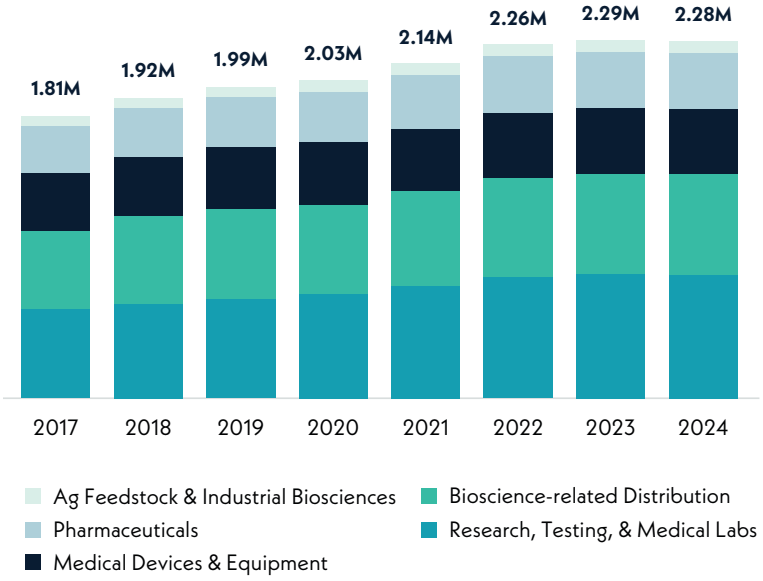
Funding for this project has been provided through the National Science Foundation's Advanced Technology Education Program, DUE 2349809. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation, or its partners.

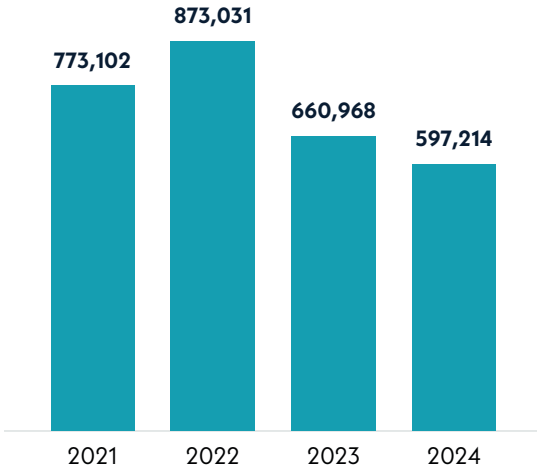
1. Implications of slower employment growth and changing demand dynamics include a focus on strategic hires, targeted cost reductions, and investments in existing employees' skills and career development as well as automation. Companies are reporting greater ease in filling key roles.

Tempered Growth and Hiring Activity in the Life Sciences:
A Leveling-Off in Employment, Significant Reductions in Job Postings

Life Sciences Industry Employment



Life Sciences Industry Job Postings



Macroeconomic forces and industry developments impacting hiring:

- Inflation
- General global uncertainties
- Investment funding, fundraising challenges
- Lower turnover, greater retention

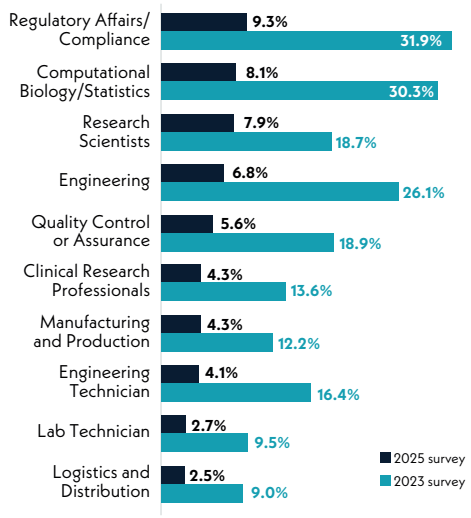
Implications of Changing Industry Dynamics for Workforce and Talent Demand, Based on Executive Interviews and Survey Findings

- **Narrower Emphasis on "Strategic" Hires**
- **Utilizing Contractors, Consultants**
- **Targeting Cost Reductions, Including via Automation Investments**
- **Investing More in Existing Employees' Development, Upskilling**
- **Less Challenging to Hire for Key Roles**

Signaling renewed industry confidence and long-term growth, leading U.S. life sciences investments announced in early 2025 include **Johnson & Johnson** ($55B), **Roche** ($50B), **Bristol Myers Squibb** ($40B), **Eli Lilly & Co.** ($27B), and **Novartis** ($23B); a complete list of announcements totaling over $200B is available in the full report.

Companies are reporting greater ease in filling key roles.

Share of Life Sciences Companies Rating "Very Difficult" to Hire in Selected Occupations, 2023 vs. 2025 Survey Results



2. AI, machine learning, and industrial automation are creating both disruptive opportunities and challenges for the industry, with significant implications for workforce and talent.

Industry executives consistently identify two existing/emerging technology areas impacting talent needs:

- Artificial Intelligence (AI) and
- The Automation and Broader Digital Transformation of manufacturing and business operations—areas that are in many respects highly interrelated and coupled.

Industry Application Areas, Use Cases for AI Tools Cited by Life Sciences Industry Executives

- Automation in Manufacturing and Operational Processes
- Data Analytics and Decision Making
- Drug Discovery and Development
- Regulatory Compliance and Quality Control
- Clinical Support
- Customer Support
- Supply Chain and Logistics Optimization
- Recruitment and Talent Management

To make AI and automation work, companies need the right infrastructure, skilled people, and internal systems to support them.

- AI and automation are reshaping the workforce by transforming and enhancing roles rather than simply replacing them.
- Companies are also focused on rethinking job design and integrating advanced technologies across various business operations.

Leading Specialized Skills in Life Sciences Industry Job Postings for AI- and Data Sciences-Specific Roles—Leaders in Both Share of Total Postings and Projected Skill Growth

- Python (Programming Language)
- Data Sciences
- Machine Learning
- R (Programming Language)
- Artificial Intelligence
- Algorithms
- SQL (Programming Language)
- Data Visualization
- PyTorch (Machine Learning Library)
- Automation
- TensorFlow
- Scikit-Learn (Python Package)
- Microsoft Azure
- Tableau (Business Intelligence Software)

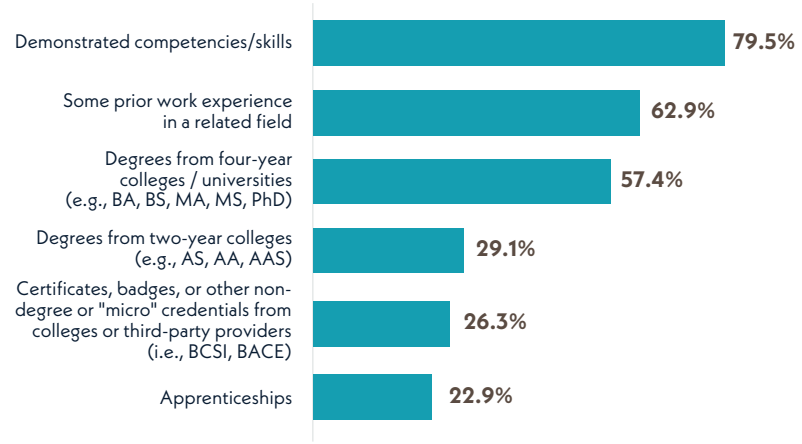
3. Companies are placing a major emphasis on incumbent worker upskilling, reskilling, and other skills training and development in response to ongoing digital transformations and regulatory changes.

Drivers and needs for this strategic imperative include:

- Regulatory changes and shifts
- Manufacturing automation and digital integration
- AI implementation and adoption
- Leveraging data capture and advanced analytics

Demonstrated Skills & Competencies Remain Key for Entry-Level Technician, Production Hires

Share of Companies Surveyed Ranking Various Qualifications as "Very Important" When Hiring Entry-Level Technical Positions



Leading Specialized Skills in Life Sciences Industry Job Postings Ranked by Increase in Use/Reference from 2021 to 2024, by Major Industry Subsector

Ag Feedstock & Industrial Biosciences	Medical Devices & Equipment	Pharmaceuticals	Research, Testing, & Medical Labs
Good Manufacturing Practices	Data Management	Project Portfolio Management	R (Programming Language)
Systems Engineering	Data Governance	Artificial Intelligence	Continuous Improvement Process
Quality Control	Python (Programming Language)	Clinical Trials	Root Cause Analysis
Process Control	SQL (Programming Language)	Data Science	Continuous Integration/ Continuous Delivery
Product Quality (QA/QC)	Data Architecture	Good Clinical Practices (GCP)	Patient Safety
Process Engineering	Data Warehousing	Continuous Improvement Process	Artificial Intelligence
Predictive Maintenance	Microsoft Azure	Cross-Functional Collaboration	PostgreSQL
Power BI			SAP Applications
Systems Design			

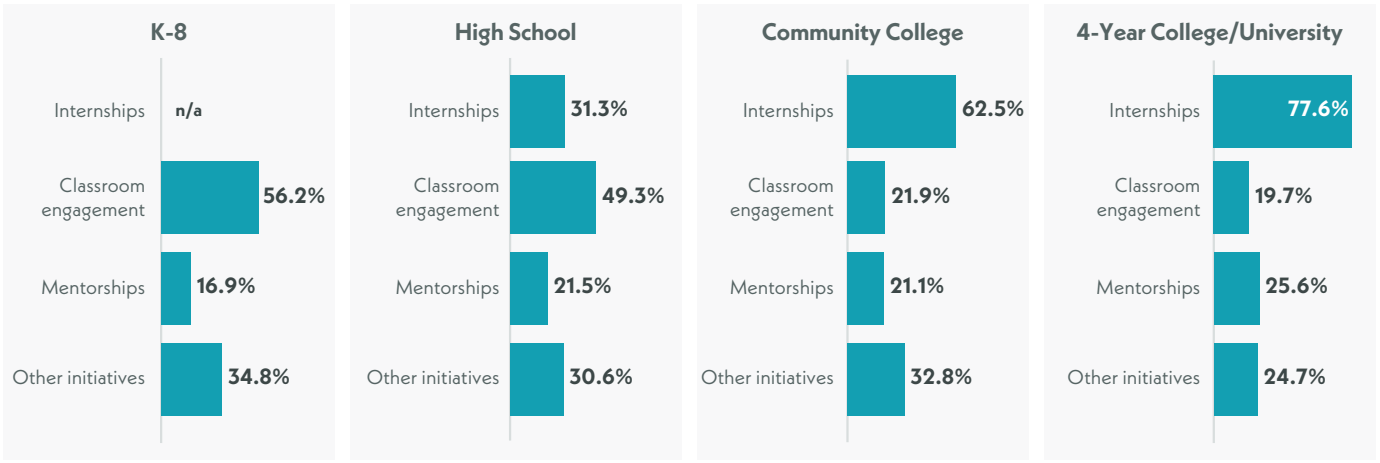
4. Companies are placing a major and increasing emphasis on engaging students early, supporting STEM education programming, and informing career pathways and connections at all student levels.

The hiring survey finds a significantly greater level of involvement from life sciences employers in STEM education and talent pipelines.

Forms of engagement:

- Scholarship programs
- Internships, mentorships, co-op programs, and other career connections
- Guest lectures, classroom visits, science fairs and STEM events, career awareness
- Curriculum design and input
- Senior capstone and design projects
- Research collaborations
- (Pre-)Apprenticeship programs
- Teacher professional development

Share of Life Sciences Companies Surveyed with Initiatives to Seek and Develop a STEM Talent Pipeline, by Education Level and Type of Initiative



Growth in Shares of Companies Engaging U.S. Students, 2023 to 2025

This is a companion to the 2025 *Life Sciences Workforce Trends* Report, published by the **Life Sciences Workforce Collaborative (LSWC)** and TEConomy Partners, LLC in June 2025. The findings, graphics, and other content presented herein are drawn from this report and the following sources:

TEConomy Partners' analysis of: Lightcast 2025.1 data set and Lightcast JPA Database, 2025.1.

LSWC and TEConomy Partners Life Sciences Industry Hiring Survey and Executive Interviews.