CENTER OF EXCELLENCE FOR LABOR MARKET RESEARCH
BAY AREA

# Labor Market Analysis for Program Recommendation
# Biotechnology Occupations
# Mid-Peninsula Subregion

**Prepared by the Bay Region Center of Excellence for Labor Market Research**

**Certificate Program**

**October 2026**

## Summary

| **Recommendation Based on Labor Market Data: ☑ Yes ☐ With Reservations ☐ No** | | |
|---|---|---|
| | **Earning Wage Meets Living Wage** | **Meets Demand** |
| **Bay Region** | **Entry Level Hourly Wage- $30**<br>**Mid-Career Hourly Wage- $41**<br><br>**Mid-Career Hourly Wage at or above the Bay Living Wage ($27)?**<br>**☑ Yes**<br>**☐ No** | **Demand: 445**<br>**Supply: 206 (46% of Demand is Met)**<br>**Gap: 239**<br><br>**In-Demand?**<br>**☑ Yes**<br>**☐ No** |
| **Mid-Peninsula Subregion** | **Entry Level Hourly Wage- $35**<br>**Mid-Career Hourly Wage- $49**<br><br>**Mid-Career Hourly Wage at or above the Subregion Living Wage ($31)?**<br>**☑ Yes**<br>**☐ No** | **Demand: 186**<br>**Supply: 30 (17% of Demand is Met)**<br>**Gap: 156**<br><br>**In-Demand?**<br>**☑ Yes**<br>**☐ No** |

**Note:** An occupation is considered to provide a living wage if the mid-career wage is at or above the amount required for a single adult to be economically self-sufficient within a specified region. In this report, living wage estimates are based on the California Self-Sufficiency Standard. The Bay Region Center of Excellence is gradually transitioning to the MIT Living Wage Calculator. During this transition, we include estimates in the methodology section from both sources for reference and comparison. As a rule of thumb, an occupation will be considered **in-demand** when the supply is less than 75% of the demand and the labor market gap exceeds 40 openings (a reasonable regional threshold for starting a new program), but this approach may not apply in all cases. For definitions of demand, supply, and living wage, please scroll to the bottom of the report under **Definitions**.

## Recommendation

The labor market data supports this proposed program. The occupations meet both the Bay Region and Mid-Peninsula subregion living wage at the entry and mid-career levels. An additional 239 students are needed in the Bay Region and 156students in the Mid-Peninsula subregion to complete their program. Lastly, only 46% of labor market demand is being met in the Bay Region, and 17% of demand is being met in the Mid-Peninsula subregion overall.

## Introduction

This report provides student outcomes data on employment and earnings for TOP 0430.00 - Biotechnology and Biomedical Technology programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at subregion in the state and region.

This report profiles Biotechnology Occupations in the 12 county Bay Region and in the Mid-Peninsula subregion. The occupations classified as middle-skill occupations require a certificate, or an associate degree, or it may require a bachelor's degree, but 33% or fewer of current workers in these roles hold one.

**Biological Technicians (19-4021):** Assist biological and medical scientists. Set up, operate, and maintain laboratory instruments and equipment, monitor experiments, collect data and samples, make observations, and calculate and record results. May analyze organic substances, such as blood, food, and drugs.

Typical Entry-Level Education: Bachelor's degree
Skill Level: Middle-Skill
Work Experience Required: None
Percentage of individuals 25+ with an associate degree, certificate, or some postsecondary coursework as their highest level of education attainment: 33%

## Occupational Demand

**Table 1. Employment Outlook for Biotechnology Occupations in the Bay Region**

| Occupation | 2025 Jobs | 2030 Jobs | 5-yr Change | 5-yr % Change | 5-yr Total Openings | Annual Openings | Entry Level Hourly | Mid-Career Hourly Wage |
|---|---|---|---|---|---|---|---|---|
| Biological Technicians | 3,850 | 4,012 | 161 | 4% | 2,224 | 445 | $30 | $41 |
| **Total** | **3,850** | **4,012** | **162** | **4%** | **2,224** | **445** | **$30** | **$41** |

Source: Lightcast 2026.3
Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

**Table 2. Employment Outlook for Biotechnology Occupations in the Mid-Peninsula Subregion**

| Occupation | 2025 Jobs | 2030 Jobs | 5-yr Change | 5-yr % Change | 5-yr Total Openings | Annual Openings | Entry Level Hourly | Mid-Career Hourly Wage |
|---|---|---|---|---|---|---|---|---|
| Biological Technicians | 1,597 | 1,675 | 78 | 5% | 930 | 186 | $35 | $49 |
| **Total** | **1,597** | **1,675** | **78** | **5%** | **930** | **186** | **$35** | **$49** |

Source: Lightcast 2026.3
Mid-Peninsula Subregion includes: San Francisco, San Mateo Counties

## Job Postings in the Bay Region and Mid-Peninsula Subregion

**Table 3. Number of Job Postings by Occupation for the latest 12 months**

| Occupation | Bay Region | Mid-Peninsula |
|---|---|---|
| Biological Technicians | 484 | 260 |

Source: Lightcast 2026.3; "Job Posting Analytics." Oct. 2025 - Sep. 2026

**Table 4a. Top Job Titles in Job Postings for Biotechnology Occupations in the Bay Region**

| Title | Bay | Title | Bay |
|---|---|---|---|
| Research Associates | 236 | Plant Science Research Associates | 5 |
| Research Assistants | 33 | Laboratory Assistants | 5 |
| Sample Management Technicians | 15 | Research Support Associates | 4 |
| Research Specialists | 13 | Neuroscience Research Assistants | 4 |
| Microbiology Technicians | 9 | Analytical Formulation Scientists | 4 |
| Wildlife Technicians | 8 | Sample Managers | 4 |
| Research and Development Associates | 7 | Therapy Technicians | 4 |
| Instructional Support Technicians | 6 | Research and Development Technicians | 4 |
| Life Sciences Research Assistants | 6 | Biological Science Technicians | 4 |

Source: Lightcast 2026.3; "Job Posting Analytics." Oct. 2025 - Sep. 2026

**Table 4b. Top Job Titles in Job Postings for Biotechnology Occupations in the Mid-Peninsula Subregion**

| Title | Subregion | Title | Subregion |
|---|---|---|---|
| Research Associates | 143 | Wildlife Technicians | 3 |
| Research Assistants | 19 | Contract Translators | 2 |
| Sample Management Technicians | 15 | Assistant/Associate/Full Professors | 2 |
| Research Support Associates | 4 | Laboratory Assistants | 2 |
| Sample Managers | 4 | Biological Science Technicians | 2 |
| Therapy Technicians | 4 | Research and Development Associates | 2 |
| Research and Development Technicians | 4 | Immunology Specialists | 2 |
| Neuroscience Research Assistants | 3 | Equity Research Associates | 2 |
| Chemistry Research Assistants | 3 | Imaging Research Associates | 1 |

Source: Lightcast 2026.3; "Job Posting Analytics." Oct. 2025 - Sep. 2026

## Industry Concentration

**Table 5. Industries Hiring for Biotechnology Occupations in the Bay Region**

| Industry - 6 Digit NAICS (No. American Industry Classification) Codes | Jobs in Industry (2025) | Jobs in Industry (2030) | % Change (2025-30) | % Occupation Group in Industry (2025) |
|---|---|---|---|---|
| Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology) | 1,298 | 1,373 | 6% | 34% |
| Research and Development in Biotechnology (except Nanobiotechnology) | 903 | 1,011 | 12% | 23% |
| Colleges, Universities, and Professional Schools (State Government) | 292 | 298 | 2% | 8% |
| Pharmaceutical Preparation Manufacturing | 258 | 217 | -16% | 7% |
| Colleges, Universities, and Professional Schools | 245 | 253 | 3% | 6% |
| Testing Laboratories and Services | 112 | 107 | -5% | 3% |
| Federal Government, Civilian, Excluding Postal Service | 102 | 96 | -5% | 3% |
| General Medical and Surgical Hospitals | 76 | 71 | -7% | 2% |
| Medicinal and Botanical Manufacturing | 50 | 52 | 3% | 1% |

| | | | | |
|---|---|---|---|---|
| Colleges, Universities, and Professional Schools (Local Government) | 44 | 43 | -1% | 1% |

Source: Lightcast 2026.3

**Table 6. Top Employers Posting Biotechnology Occupations in the Bay Region and the Mid-Peninsula Subregion**

| Employer | Bay | Employer | Mid-Peninsula |
|---|---|---|---|
| University of California-San Francisco | 17 | University of California-San Francisco | 17 |
| University of California-Berkeley | 16 | Planet Pharma | 14 |
| Planet Pharma | 15 | Ucsf Medical Center | 10 |
| Actalent | 12 | Bayside Solutions | 9 |
| Kaiser Permanente | 12 | Natera | 9 |
| Bayside Solutions | 11 | Belcan | 8 |

Source: Lightcast 2026.3; "Job Posting Analytics." Oct. 2025 - Sep. 2026

## Educational Supply

There are 11 community colleges in the Bay Region issuing 206 awards on average annually (last 3 years ending 2024-25) on TOP 0430.00 - Biotechnology and Biomedical Technology. In the Mid-Peninsula subregion, there are three community colleges that issued 30 awards on average annually (last 3 years) on this TOP code.

There are no other CTE educational institutions in the Bay Region issuing awards on average annually (last 3 years) on CIP 41.0101- Biology/Biotechnology Technology/Technician.

**Table 7a. Community College Awards on TOP 0430.00 - Biotechnology and Biomedical Technology in the Bay Region**

| College | Subregion | Associate Degree | Bachelor's Degree | High unit Certificate | Low unit Certificate | Total |
|---|---|---|---|---|---|---|
| Berkeley City | East Bay | 6 | 0 | 0 | 11 | 17 |
| Cabrillo | SC-Monterey | 0 | 0 | 0 | 5 | 5 |
| Contra Costa | East Bay | 1 | 0 | 0 | 2 | 3 |
| Laney | East Bay | 4 | 0 | 0 | 18 | 22 |
| Las Positas | East Bay | 3 | 0 | 0 | 3 | 6 |
| Merritt | East Bay | 0 | 0 | 0 | 26 | 26 |
| Ohlone | East Bay | 2 | 0 | 0 | 8 | 10 |
| San Francisco | Mid-Peninsula | 6 | 0 | 0 | 17 | 23 |
| San Mateo | Mid-Peninsula | 0 | 0 | 0 | 5 | 5 |
| Skyline | Mid-Peninsula | 2 | 0 | 0 | 0 | 2 |
| Solano | North Bay | 28 | 21 | 0 | 38 | 87 |
| **Total** | | **52** | **21** | **0** | **133** | **206** |

Source: CCCCO DataMart
Note: The annual average for awards is 2022-23 to 2024-25.

## Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay Region with 445 annual openings for the Biotechnology occupational cluster and 206 annual (3-year average) awards for an annual undersupply of 239 students. In the Mid-Peninsula subregion, there is also a gap with 186 annual openings and 30 annual (3-year average) awards for an annual undersupply of 156 students.

## Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0430.00 - Biotechnology and Biomedical Technology**

| Metric Outcomes | Bay All CTE Program | State 0430.00 | Bay 0430.00 | Mid-Peninsula 0430.00 |
|---|---|---|---|---|
| Students with a Job Closely Related to Their Field of Study | 75% | 84% | 95% | NA |
| Median Annual Earnings for SWP Exiting Students | $59,448 | $50,448 | $60,548 | $58,406 |
| Median Change in Earnings for SWP Exiting Students | 30% | 35% | 22% | 19% |
| Exiting Students Who Attained the Living Wage | 50% | 45% | 56% | 42% |

Source: DataVista Program Median of 2021 to 2023.

## Skills, Certifications and Education

**Table 9. Top Skills in Job Postings for Biotechnology Occupations in the Bay Region**

| Skill | Posting | Skill | Posting |
|---|---|---|---|
| Biology | 238 | Cell Biology | 81 |
| Biochemical Assays | 139 | Laboratory Equipment | 76 |
| Cell Cultures | 119 | Asepsis | 72 |
| Molecular Biology | 119 | Automation | 72 |
| Data Analysis | 105 | Laboratory Techniques | 71 |
| Laboratory Experience | 99 | Polymerase Chain Reaction | 68 |
| Workflow Management | 96 | Standard Operating Procedure | 68 |
| Data Collection | 94 | Chemistry | 66 |
| Biotechnology | 92 | Ribonucleic Acid Sequencing | 58 |
| Biochemistry | 89 | High-Performance Liquid Chromatography | 55 |

Source: Lightcast 2026.3; "Job Posting Analytics." Oct. 2025 - Sep. 2026

**Table 10. Certifications in Job Postings for Biotechnology Occupations in the Bay Region**

| Certification | Posting | Certification | Posting |
|---|---|---|---|
| American Association For Laboratory Animal Science (AALAS) Certification | 4 | American Society For Clinical Pathology (ASCP) Certification | 2 |
| Animal Euthanasia Certification | 3 | Automated External Defibrillator (AED) Certification | 1 |
| Cardiopulmonary Resuscitation (CPR) Certification | 3 | COVID 19 Vaccination Certificate | 1 |
| First Aid Certification | 3 | | |

Source: Lightcast 2026.3; "Job Posting Analytics." Oct. 2025 - Sep. 2026

**Table 11. Education Requirements for Biotechnology Occupations in the Bay Region**

| Education Level | Job Postings | % of Total |
|---|---|---|
| High school or GED | 30 | 5% |
| Associate degree | 42 | 7% |
| Bachelor's degree & higher | 560 | 89% |

Source: Lightcast 2026.3; "Job Posting Analytics." Oct. 2025 - Sep. 2026

Note: 13% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample.

## Methodology

Occupations for this report were identified by use of job descriptions and skills listed in O*Net. Labor demand data is sourced from Lightcast occupation and job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CCCCO Data Mart and CTE Launchboard.

This report uses living wage estimates from the California Self-Sufficiency Standard. The Bay Region Center of Excellence is gradually transitioning to the Massachusetts Institute of Technology (MIT) Living Wage Calculator, which will become the primary living wage benchmark used in future reports. During this transition, we include both estimates to provide context and allow readers to understand how the selected benchmark affects wage comparisons. Because the California Self-Sufficiency Standard and the MIT Living Wage Calculator use different methodologies, their estimates are not directly interchangeable. The MIT Living Wage Calculator generally produces higher living wage thresholds; therefore, future reports may identify fewer occupations as providing a living wage, even when the underlying occupational wage data has not changed. For comparison, the MIT living wage is $33 per hour for the Bay Region and $35 per hour for the Mid-Peninsula subregion. Under the California Self-Sufficiency Standard, the living wage is $27 per hour for the Bay Region and $31 per hour for the Mid-Peninsula subregion.

## Definitions

**Demand** refers to average annual openings which includes a combination of both new jobs and replacement jobs between 2025 to 2030. New jobs represent the total number of additional workers required in an occupation, calculated as the difference between the current number of workers and the projected number of unfilled positions. Replacements are jobs that will need to be filled by new hires due to existing workers leaving the occupation. The average annual openings figure is derived by dividing total openings (2025 to 2030) by five years.

**Supply** refers to the average number of graduates between academic years 2021–2022 and 2023–2024. Graduates include students from community colleges, other two-year private and public institutions, as well as four-year institutions.

**Living wage** refers to the amount of income required for working families to meet basic needs at a minimally adequate level, considering family composition, ages of children, and geographic differences in costs based on the Self-Sufficiency Standard methodology.

**Entry-level** wages are the hourly earnings paid to workers who are newly entering an occupation.

**Mid-career wages** are the hourly earnings paid to workers who have accumulated several years of experience in an occupation, reflecting increased productivity, skill proficiency, and responsibility beyond entry-level roles but short of late-career or senior positions.

## Sources

O*Net Online
Lightcast
CTE LaunchBoard www.calpassplus.org
Statewide CTE Outcomes Survey
Employment Development Department Unemployment Insurance Dataset
CCCCO Data Mart

## Contacts

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