

Biological Technicians

Labor Market Analysis: San Diego County

August 2025

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED LEVEL OF EDUCATION
 <p>Do Not Proceed with New Program</p>	 	 	<ul style="list-style-type: none"> <input type="checkbox"/> Doctorate Degree <input type="checkbox"/> Master's Degree <input checked="" type="checkbox"/> Bachelor's Degree <input type="checkbox"/> Associate Degree <input type="checkbox"/> Some College or Certificate <input type="checkbox"/> HS Diploma or Equivalent <input type="checkbox"/> Less Than a HS Diploma <input type="checkbox"/> Apprenticeship
SUPPORT FOR PROGRAM MODIFICATION?	NUMBER OF INSTITUTIONS THAT PROVIDE TRAINING	NUMBER OF ANNUAL JOB OPENINGS	
 	<p>HIGH</p> 	<p>HIGH</p> 	

The San Diego & Imperial Center of Excellence (COE) developed this brief to assist the region’s community colleges with strategic planning and program development. According to available data, *Biological Technicians* in San Diego County have a labor market demand of 289 annual job openings (while average demand for a single occupation in San Diego County is 289 annual job openings), and eight institutions supply 313 awards for this occupation. Entry-level wages are above the living wage. This brief recommends that the colleges do not proceed with developing a new program for this occupation but supports a program modification because 1) there is an oversupply in San Diego County and 2) a high number of institutions provide training for this occupation. Colleges should note, that the expected level of education for *Biological Technicians* is a bachelor’s degree.

Introduction

This report provides labor market information in San Diego County for the following occupational code in the Standard Occupational Classification (SOC)¹ system:

Biological Technicians (SOC 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. Sample reported job titles include:

- Wildlife Technician
- Laboratory Technician
- Research Associate
- Wildlife Biology Technician
- Microbiology Technician
- Research Technician
- Marine Fisheries Technician
- Biological Science Technician
- Research Specialist

Projected Occupational Demand

Between 2023 and 2028, *Biological Technicians* are projected to decrease by 225 net jobs or nine percent (Exhibit 1). Employers in San Diego County will need to hire 289 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

Exhibit 1: Number of Jobs for *Biological Technicians* (2023-2028)²

Occupational Title	2023 Jobs	2028 Jobs	2023 - 2028 Net Jobs Change	2023 - 2028 % Net Jobs Change	Annual Job Openings (Demand)
Biological Technicians	2,460	2,235	- 225	- 9%	289

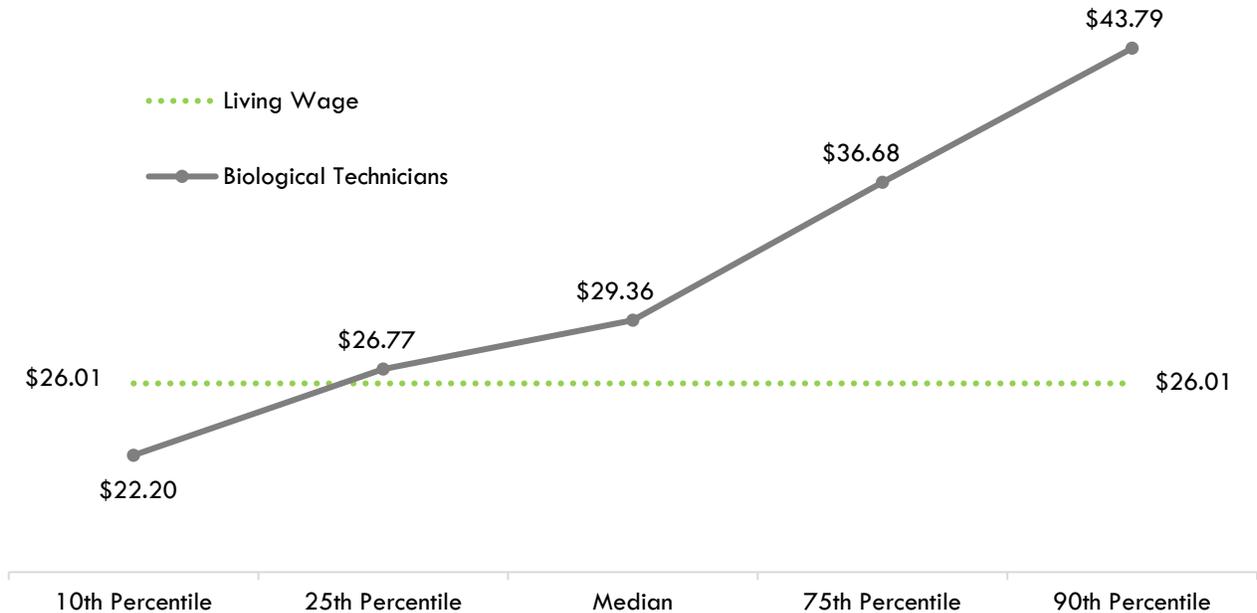
¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. <https://www.bls.gov/soc/>.

² Lightcast 2025.02; QCEW, Non-QCEW, Self-Employed.

Earnings

According to traditional³ labor market information (LMI), entry-level hourly earnings for *Biological Technicians* were \$26.77—or \$55,681.60 annual salary⁴; this is more than the living wage for a single adult in San Diego County, which is \$26.01 per hour (Exhibit 2).⁵

Exhibit 2: Hourly Earnings⁶ for *Biological Technicians* in San Diego County⁷



In online job postings, employers advertised between \$22 to \$25 per hour between January 1, 2022 and December 30, 2024 for *Biological Technicians* in San Diego County (Exhibit 3).⁸ This suggests that employers in recent years are increasing wages due to labor market forces that may not be captured by traditional LMI.

³ Traditional LMI is generally historical data captured by the U.S. Bureau of Labor Statistics (BLS) or the California Employment Development Department (EDD). It does not account for recent technological, economic, or legislative changes that may affect labor market demand and wages.

⁴ Annualized salaries assume a full-time position with 2,080 hours. Multiplying the hourly wage with 2,080 yields the annual salary.

⁵ Center for Women's Welfare, University of Washington. (2024). The self-sufficiency standard for California 2024.

selfsufficiencystandard.org/California.

⁶ 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

⁷ Lightcast 2025.02; QCEW, Non-QCEW, Self-Employed.

⁸ Lightcast 2025.02; "Job Posting Analytics." 2022-2024.

**Exhibit 3: Entry-Level Advertised Salaries in Online Job Postings for
Biological Technicians in San Diego County (2022-2024)***



*Hourly wages are rounded to the nearest dollar amount.

Expected Level of Education

According to traditional LMI (data reported to EDD and BLS), *Biological Technicians* have a national educational attainment of a [bachelor’s degree](#) (Exhibit 4).⁹

Exhibit 4: National Educational Attainment for *Biological Technicians*¹⁰

Occupational Title	Typical Entry-Level Education
Biological Technicians	Bachelor’s degree

Online job postings between January 1, 2022 and December 31, 2024 in San Diego County had a [bachelor’s degree](#) as the most requested educational requirement for *Biological Technicians*; however, employers also expected the following certifications (Exhibit 5).¹¹

⁹ Lightcast 2025.02; QCEW, Non-QCEW, Self-Employed.
¹⁰ Lightcast 2025.02; QCEW, Non-QCEW, Self-Employed.
¹¹ Lightcast 2025.02; “Job Posting Analytics.” 2022-2024.

**Exhibit 5: Top Certifications for *Biological Technicians*
in San Diego County in Online Job Postings (2022-2024)¹²**

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. American Association For Laboratory Animal Science (AALAS) Certification 2. Registered Vascular Technologist (RVT) 3. Certified Veterinary Technician 4. Cardiopulmonary Resuscitation (CPR) Certification 5. Pesticide Applicator License | <ol style="list-style-type: none"> 6. First Aid Certification 7. Commercial Driver's License (CDL) 8. Secret Clearance 9. Security Clearance 10. Automated External Defibrillator (AED) Certification |
|---|--|

Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes. There are **three** TOP codes and **seven** CIP codes related to *Biological Technicians* (Exhibit 6).

Exhibit 6: Related TOP and CIP Codes for *Biological Technicians*¹³

TOP or CIP Code	TOP or CIP Program Title
TOP 0403.00	MicroBiology
TOP 0430.00	Biotechnology and Biomedical Technology
TOP 0955.00	Laboratory Science Technology
CIP 15.0401	Biomedical Technology/Technician
CIP 26.0499	Cell/Cellular Biology and Anatomical Sciences, Other
CIP 26.0502	Microbiology, General
CIP 26.1104	Computational Biology
CIP 41.0101	Biology/Biotechnology Technology/Technician
CIP 41.0301	Chemical Technology/Technician
CIP 41.0303	Chemical Process Technology

¹² Lightcast 2025.02; "Job Posting Analytics." 2022-2024.

¹³ This brief uses a conservative estimate of program supply and only calculates awards from the TOP code listed in Exhibit 6.

According to TOP data, five community colleges supply the region with awards for these occupations: MiraCosta College, San Diego City College, San Diego Mesa College, San Diego Miramar College, and Southwestern College. According to CIP data, three non-community-college institution supplies the region with awards: National University, San Diego State University, and University of California-San Diego (Exhibit 7).

**Exhibit 7: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions
(Program Year 2020-21 Through Program Year 2023-24 Average)**

TOP6 or CIP Code	TOP6 or CIP Program Title	3-Yr Annual Average CC Awards (PY21-22 to PY23-24)	Other Educational Institutions 3-Yr Annual Average Awards (PY20-21 to PY22-23)	Total Average Supply (PY20-21 to PY22-23)
0430.00	Biotechnology and Biomedical Technology	179	0	179
	MiraCosta	87	0	
	• Bachelor's degree	20	0	
	• Associate degree	15	0	
	• Certificate 30 < 60 units	25	0	
	• Certificate 6 < 18 units	2	0	
	• Certificate 8 < 16 units	25	0	
	San Diego City	0	0	
	• Associate degree	0	0	
	San Diego Mesa	0	0	
	• Associate degree	0	0	
	San Diego Miramar	92	0	
	• Associate degree	69	0	
	• Certificate 8 < 16 units	23	0	
	Southwestern	0	0	
	• Associate degree	0	0	
26.0499	Cell/Cellular Biology and Anatomical Sciences, Other	0	52	52
	National University	0	52	
	• Associate degree	0	52	

TOP6 or CIP Code	TOP6 or CIP Program Title	3-Yr Annual Average CC Awards (PY21-22 to PY23-24)	Other Educational Institutions 3-Yr Annual Average Awards (PY20-21 to PY22-23)	Total Average Supply (PY20-21 to PY22-23)
26.0502	Microbiology, General	0	82	82
	San Diego State University	0	29	
	• Bachelor's degree	0	29	
	University of California-San Diego	0	53	
	• Bachelor's degree	0	53	
			Total	313

Demand vs. Supply

Comparing labor demand with labor supply¹⁴ suggests that there is an **oversupply** for this occupation in San Diego County, with 289 annual openings and 313 awards. Comparatively, there are 1,444 annual openings in California and 1,305 awards, suggesting that there is an **oversupply** across the state (Exhibit 8).¹⁵

Exhibit 8: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

	Demand (Annual Openings)	Supply (Annual Awards)	Supply Gap or Oversupply
San Diego	289	313	- 24
California	1,444	1,305	- 139

Please note: This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

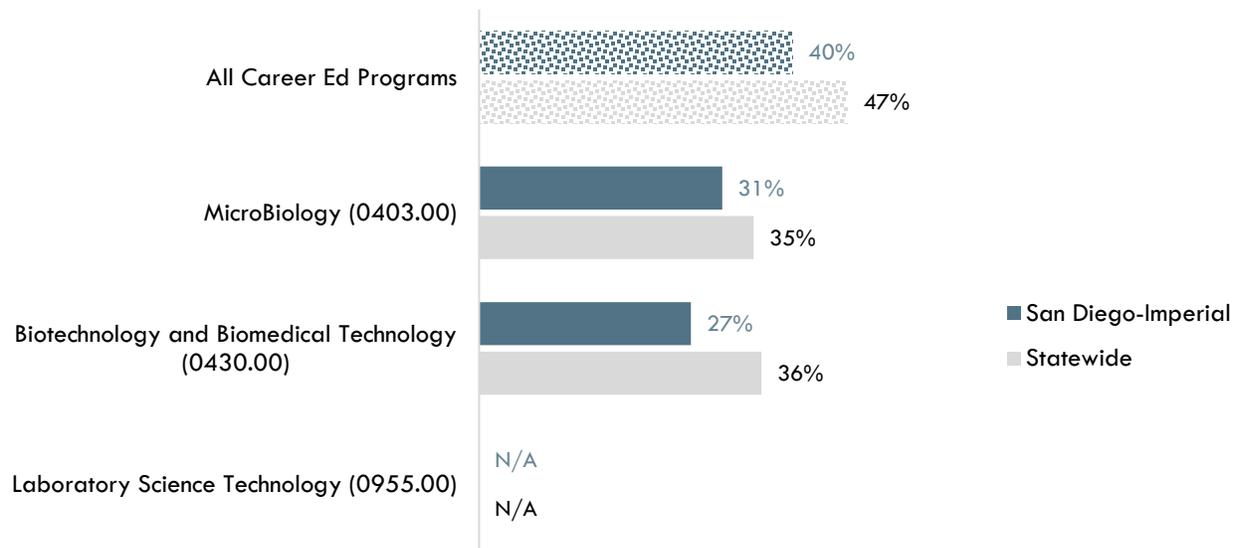
¹⁴ Labor supply can be found from two different sources: Lightcast or the California Community Colleges Chancellor's Office MIS Data Mart. Lightcast uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

¹⁵ "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/our-resources.

Student Outcomes and Regional Comparisons

According to the California Community Colleges DataVista, 27 to 31% of students in the San Diego-Imperial region earned a living wage after completing a program related to *Biological Technicians*, compared to 35 to 36% statewide and 47% of students in Career Education programs in general across the state (Exhibit 9).¹⁶

Exhibit 9: Percentage of Students Who Earned a Living Wage by Program, PY2022-23¹⁷



"N/A" indicates insufficient data

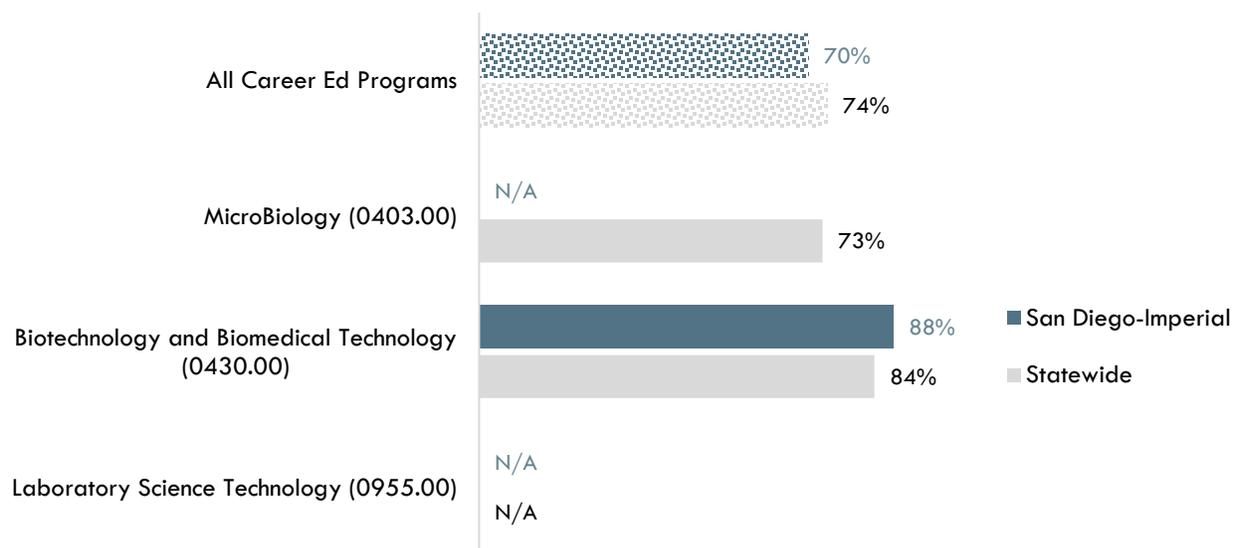
According to the California Community Colleges DataVista, 88% of students statewide obtained a job closely related to their field of study after completing a program related to *Biological Technicians*, compared to 73 to 84% statewide and 74% of students in Career Education programs in general across the state (Exhibit 10).¹⁸

¹⁶ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁷ Most recent year with available data is Program Year 2022-23. Among completers and skills builders who exited, the percentage of students who attained a living wage.

¹⁸ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

Exhibit 10: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2021-22¹⁹



"N/A" indicates insufficient data

Employers

Between January 1, 2022 and December 31, 2024, the top five employers in San Diego County for *Biological Technicians* were *Ajinomoto*, *Actalent*, *University of California-San Diego*, *Kelly Services*, and *AECOM* based on online job postings (Exhibit 11).

Exhibit 11: Top Employers for *Biological Technicians* in San Diego County²⁰

Top Employers	
<ul style="list-style-type: none"> • Ajinomoto • Actalent • University of California-San Diego • Kelly Services • AECOM 	<ul style="list-style-type: none"> • County Of San Diego • University of California San Diego • ManpowerGroup • Moore & Associates • State of California

¹⁹ Most recent year with available data is Program Year 2021-22. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

²⁰ Lightcast 2025.02; "Job Posting Analytics." 2022-2024.

Skills

Exhibit 12 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2022 and December 31, 2024.

Exhibit 12: Top Skills for *Biological Technicians* in San Diego County²¹

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none">• Biology• Microbiology• Data Entry• Asepsis• Standard Operating Procedure• Good Manufacturing Practices• Environmental Monitoring• Laboratory Equipment• Polymerase Chain Reaction• Animal Husbandry• Chemistry• Data Analysis• Botany• Life Sciences• Autoclaves	<ul style="list-style-type: none">• Research• Communication• Detail Oriented• Quality Control• Management• Operations• Troubleshooting• Lifting Ability• Writing• Verbal Communication Skills	<ul style="list-style-type: none">• Microsoft Excel• Microsoft Office

²¹ Lightcast 2025.02; "Job Posting Analytics." 2022-2024.

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Important Disclaimers

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