










Laboratory Science Occupations

Labor Market Analysis: San Diego County

December 2023

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED EDUCATION FOR MAJORITY OF OCCUPATIONS ANALYZED
 Proceed with New Program	 	 	<input type="checkbox"/> Doctorate Degree <input type="checkbox"/> Master's Degree <input checked="" type="checkbox"/> Bachelor's Degree <input type="checkbox"/> Apprenticeship <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
SUPPORT FOR PROGRAM MODIFICATION?	NUMBER OF INSTITUTIONS THAT PROVIDE TRAINING	NUMBER OF ANNUAL JOB OPENINGS	
 	<div style="background-color: #4a7c9c; color: white; padding: 2px; font-weight: bold;">LOW</div> 	<div style="background-color: #4a7c9c; color: white; padding: 2px; font-weight: bold;">HIGH</div> 	

This brief provides labor market information about *Laboratory Science Occupations* to assist the San Diego & Imperial Counties Community Colleges with program development and strategic planning. *Laboratory Science Occupations* include “Chemical Technicians” and “Clinical Laboratory Technologists and Technicians.” According to available labor market information, *Laboratory Science Occupations* in San Diego County have a labor market demand of 319 annual job openings (while average demand for a single occupation in San Diego County is 289 annual job openings), and two institutions supply 27 awards for these occupations, suggesting that there is a supply gap in the labor market. This brief recommends proceeding with a new program and supports a program modification because 1) there is a supply gap in San Diego County; 2) entry-level earnings for these occupations are above the living wage; and 3) there is a high number of annual job openings; however, 4) colleges should note that **employers typically require a bachelor’s degree as the minimum educational requirement for these occupations.**

Introduction

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

- **Chemical Technicians** (SOC 19-4031): Conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analyses of solids, liquids, and gaseous materials for research and development of new products or processes, quality control, maintenance of environmental standards, and other work involving experimental, theoretical, or practical application of chemistry and related sciences.
- **Clinical Laboratory Technologists and Technicians** (SOC 29-2018): Perform complex or routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. Technologists may train or supervise staff while technicians may work under the supervision of a medical technologist.

For the purpose of this report, these occupations are referred to as *Laboratory Science Occupations*.

Projected Occupational Demand

Between 2022 and 2027, employers in San Diego County will need to hire 319 workers annually to fill new jobs and backfill jobs in *Laboratory Science Occupations* due to attrition caused by turnover and retirement, for example (Exhibit 1). “Clinical Laboratory Technologists and Technicians” are projected to have the most labor market demand between 2022 and 2027, with 292 annual job openings.

Exhibit 1: Number of Jobs for *Laboratory Science Occupations* in San Diego County (2022-2027)²

Occupational Title	2022 Jobs	2027 Jobs	2022 - 2027 Net Jobs Change	2022-2027 % Net Jobs Change	Annual Job Openings (Demand)
Clinical Laboratory Technologists and Technicians	3,466	3,783	317	9%	292
Chemical Technicians	986	1,074	88	9%	27
Total	4,452	4,857	405	9%	319

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. [bls.gov/soc/](https://www.bls.gov/soc/).

² Lightcast 2023.04; QCEW, Non-QCEW, Self-Employed.

Earnings

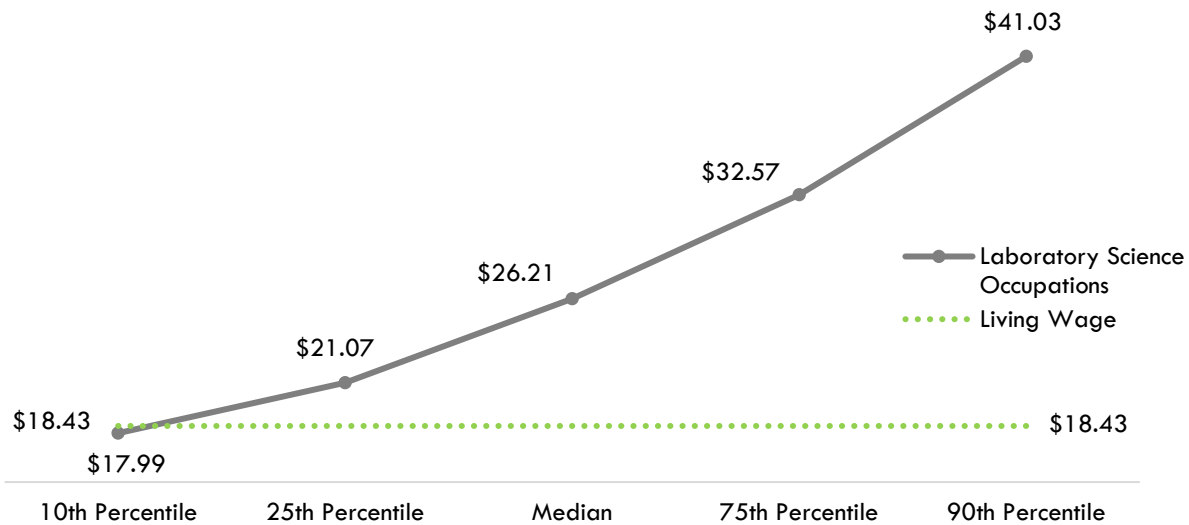
The entry-level hourly earnings for *Laboratory Science Occupations* range from \$20.48 to \$21.67 (Exhibit 2a).

Exhibit 2a: Hourly Earnings for *Laboratory Science Occupations* in San Diego County³

Occupational Title	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Clinical Laboratory Technologists and Technicians	\$21.67	\$27.88	\$35.73
Chemical Technicians	\$20.48	\$24.54	\$29.41

On average, the entry-level hourly earnings for *Laboratory Science Occupations* are \$21.07; this is more than the living wage for a single adult in San Diego County, which is \$18.43 per hour (Exhibit 2b).⁴

Exhibit 2b: Average Hourly Earnings⁵ for *Laboratory Science Occupations* in San Diego County⁶



³ Lightcast 2023.04; QCEW, Non-QCEW, Self-Employed.

⁴ "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightccd.org/family-needs-calculator.

⁵ 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.

⁶ Lightcast 2023.04; QCEW, Non-QCEW, Self-Employed.

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.⁷ There are **three** TOP codes and **three** CIP codes related to *Laboratory Science Occupations* (Exhibit 3).

Exhibit 3: Related TOP and CIP Codes for Laboratory Science Occupations⁸

TOP or CIP Code	TOP or CIP Program Title
TOP 0954.00	Chemical Technology
TOP 0955.00	Laboratory Science Technology
TOP 1205.00	Medical Laboratory Technology
CIP 41.0301	Chemical Technology/Technician
CIP 41.0303	Chemical Process Technology
CIP 51.1004	Clinical/Medical Laboratory Technician

According to TOP data, **two** community colleges supply the region with awards for these occupations: **San Diego Miramar College** and **Southwestern College**. According to CIP data, **no** non-community-college institutions supply the region with awards. (Exhibit 4).

Exhibit 4: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2019-20 through Program Year 2020-21 Average)

TOP6 or CIP Code	TOP6 or CIP Program Title	3-Yr Annual Average CC Awards (PY19-20 to PY21-22)	Other Institutions 2-Yr Annual Average Awards (PY19-20 to PY20-21)	Total Average Supply (PY19-20 to PY21-22)
1205.00	Medical Laboratory Technology	27	0	27
	<ul style="list-style-type: none"> San Diego Miramar Southwestern 	19	0	
		8	0	
			Total	27

⁷ TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data).

⁸ This brief uses a conservative estimate of program supply and only calculates awards from the TOP codes in Exhibit 3.

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply⁹ suggests that there is a supply gap for these occupations in San Diego County, with 319 annual openings and 27 awards. Comparatively, there are 3,831 annual openings in California and 244 awards, suggesting that there is a supply gap across the state¹⁰ (Exhibit 5).

Exhibit 5: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

	Demand (Annual Openings)	Supply¹¹ (Annual Awards)	Supply Gap or Oversupply
San Diego	319	27	292
California	3,831	244	3,587

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 a program should be developed.

⁹ 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.

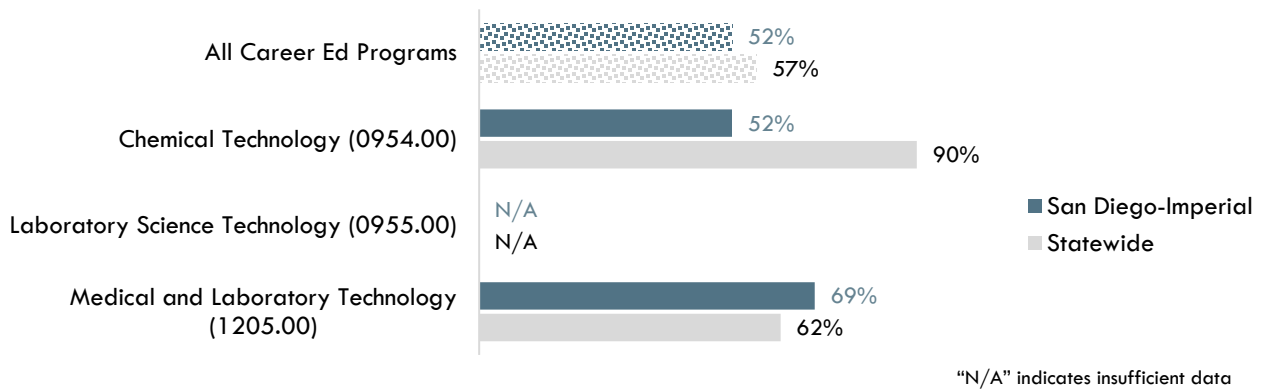
¹⁰ "Supply and Demand," Centers of Excellence Student Outcomes, <https://coecc.net/our-resources/>.

¹¹ Awards included: associate degree; award <1 year; award 1<2 years; and postsecondary awards.

Student Outcomes and Regional Comparisons

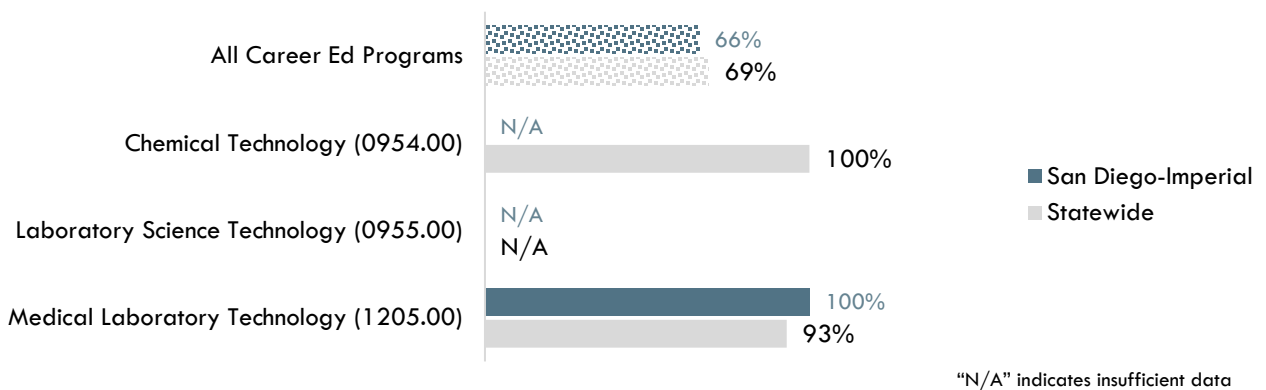
According to the California Community Colleges LaunchBoard, 52 to 69 percent of students in the San Diego-Imperial region earned a living wage after completing a program related to *Laboratory Science Occupations*, compared 62 to 90 percent statewide and 57 percent of students in Career Education programs in general across the state (Exhibit 6a).¹²

Exhibit 6a: Percentage of Students Who Earned a Living Wage by Program, PY2020-21¹³



According to the California Community Colleges LaunchBoard, 100 percent of students in the San Diego-Imperial region obtained a job closely related to their field of study after completing a program related to *Laboratory Science Occupations*, compared to 93 to 100 percent statewide and 69 percent of students in Career Education programs in general across the state (Exhibit 6b).¹⁴

Exhibit 6b: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2019-20¹⁵



¹² "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹³ Most recent year with available data is Program Year 2020-21. Among completers and skills builders who exited, the percentage of students who attained a living wage.

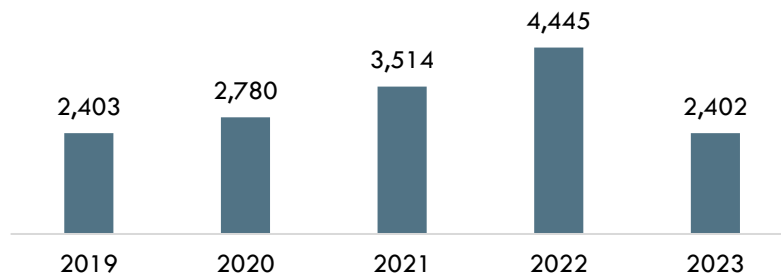
¹⁴ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁵ Most recent year with available data is Program Year 2019-20. 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.

Online Job Postings

This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight into recent changes in the labor market that are not captured by historical data. Between 2019 and 2022, there was an average of 3,109 online job postings per year for *Laboratory Science Occupations* in San Diego County (Exhibit 7). Please note that online job postings do **not** equal labor market demand; demand is represented by annual job openings (see Exhibit 1). While this brief includes online jobs postings data to help with curriculum development, the community colleges should note that this type of data is impacted by several variables: employers may post a position multiple times to increase the pool of applicants; a job posting can remain posted after a business decides not to fill a position; or an employer may use one posting to fill multiple positions, for example.

Exhibit 7: Number of Online Job Postings for *Laboratory Science Occupations* in San Diego County (2019-2022)¹⁶



¹⁶ Lightcast; "Job Posting Analytics." 2018-2022.

Top Employers

Between January 1, 2020 and December 31, 2022, the top five employers in San Diego County for *Laboratory Science Occupations* were University of California San Diego, Kelly Services, Aerotek, Actalent, and Sharp HealthCare based on online job postings (Exhibit 8).

Exhibit 8: Top Employers for *Laboratory Science Occupations* in San Diego County¹⁷

Top Employers	
<ul style="list-style-type: none">• University of California San Diego• Kelly Services• Aerotek• Actalent• Sharp HealthCare	<ul style="list-style-type: none">• Labcorp Drug Development• Healthcare Employment Network• Scripps Health• Scripps Institution of Oceanography• Rady Children's Hospital

Education, Skills, and Certifications

Laboratory Science Occupations have a national educational attainment ranging from an [associate degree](#) to a [bachelor's degree](#) (Exhibit 9a).

Exhibit 9a: National Educational Attainment for *Laboratory Science Occupations*¹⁸

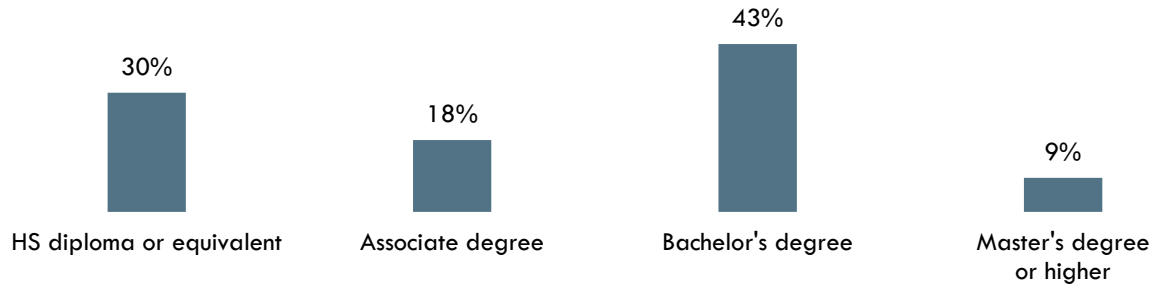
Occupational Title	Typical Entry-Level Education
Clinical Laboratory Technologists and Technicians	Bachelor's degree
Chemical Technicians	Associate degree

¹⁷ Lightcast; "Job Posting Analytics." 2020-2022.

¹⁸ Lightcast 2023.04; QCEW, Non-QCEW, Self-Employed.

Based on online job postings between January 1, 2020 and December 31, 2022 in San Diego County, employers posted a **bachelor's degree** as the most requested educational requirement for *Laboratory Science Occupations* (Exhibit 9b).¹⁹

Exhibit 9b: Educational Requirements for *Laboratory Science Occupations* in San Diego County²⁰



*May not total 100 percent due to rounding

Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2020 and December 31, 2022.

Exhibit 10: Top Skills for *Laboratory Science Occupations* in San Diego County²¹

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Biology • Medical laboratory • Chemistry • Laboratory equipment • Laboratory experience • Standard operating procedures • Biochemistry • Data entry 	<ul style="list-style-type: none"> • Communications • Research • Detail oriented • Quality control • Troubleshooting • Management • Operations • Writing • Customer service • Problem solving • Organizational skills • Interpersonal communication • Multitasking 	<ul style="list-style-type: none"> • Microsoft Excel

¹⁹ Lightcast; "Job Posting Analytics." 2020-2022.

²⁰ "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified April 9, 2021. bls.gov/emp/tables/educational-attainment.htm.

²¹ Lightcast; "Job Posting Analytics." 2020-2022.

Exhibit 11 lists the top certifications that appeared in online job postings between January 1, 2020 and December 31, 2022.

Exhibit 11: Top Certifications for *Laboratory Science Occupations* in San Diego County²²

Top Certification in Online Job Postings

1. Basic Life Support Certification
 2. American Society for Clinical Pathology Certification
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²² Lightcast; "Job Posting Analytics." 2020-2022.

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Important Disclaimers

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.