










Medical Laboratory Technology Occupations

Labor Market Analysis: San Diego County

January 2023

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED EDUCATION FOR MAJORITY OF OCCUPATIONS ANALYZED
 <p>Proceed with Caution</p>	 	 	<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>LOW</p> 	<p>HIGH</p> 	

This brief provides labor market information about *Medical Laboratory Technology Occupations* to assist the Center of Excellence (COE) for the San Diego and Imperial Counties Community Colleges with program development and strategic planning. *Medical Laboratory Technology Occupations* include “Medical Scientists, Except Epidemiologists” and “Clinical Laboratory Technologists and Technicians.” According to available labor market information, *Medical Laboratory Technology Occupations* in San Diego County have a labor market demand of 571 annual job openings (while average demand for a single occupation in San Diego County is 245 annual job openings), and four institutions supply 239 awards for these occupations, suggesting that there is a supply gap in the labor market. On average, entry-level and median wages are above the living wage. This brief recommends proceeding with caution when developing a new program and supports a program modification because 1) there is a supply gap in the region; 2) entry-level and median earnings are above the living wage; but 3) the typical entry-level education for this occupation is a bachelor’s degree or higher. **The colleges should also note that employers typically posted a bachelor’s degree as the 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:

- **Medical Scientists, Except Epidemiologists** (SOC 19-1042): Conduct research dealing with the understanding of human diseases and the improvement of human health. Engage in clinical investigation, research and development, or other related activities. Includes physicians, dentists, pharmacologists, and medical pathologists who primarily conduct research. Practitioners who primarily provide medical or dental care or dispense drugs are included in Healthcare Diagnosing or Treating Practitioners.
- **Clinical Laboratory Technologists and Technicians** (SOC 29-2018): Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical technologist.

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

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).

Projected Occupational Demand

Between 2021 and 2026, *Medical Laboratory Technology Occupations* are projected to increase by **599** net jobs or **nine** percent (Exhibit 1 a). Employers in San Diego County will need to hire **571** workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

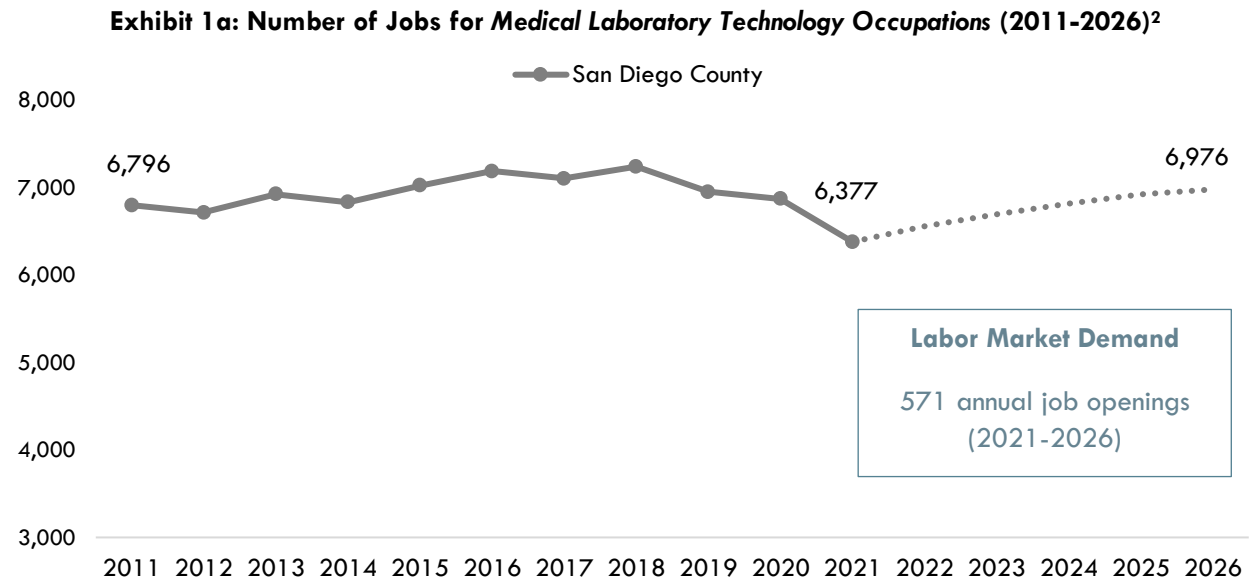


Exhibit 1b disaggregates the projected number of jobs change by occupation. “Medical Scientists, Except Epidemiologists” are projected to have the most labor market demand between 2021 and 2026, with **323** annual job openings.

Exhibit 1b: Number of Jobs for Medical Laboratory Technology Occupations in San Diego County (2021-2026)³

Occupational Title	2021 Jobs	2026 Jobs	2021 - 2026 Net Jobs Change	2021- 2026 % Net Jobs Change	Annual Job Openings (Demand)
Medical Scientists, Except Epidemiologists	3,250	3,641	391	12%	323
Clinical Laboratory Technologists and Technicians	3,127	3,335	208	7%	248
Total	6,377	6,976	599	9%	571

² Lightcast 2022.03; QCEW, Non-QCEW, Self-Employed.

³ Lightcast 2022.03; QCEW, Non-QCEW, Self-Employed.

Earnings

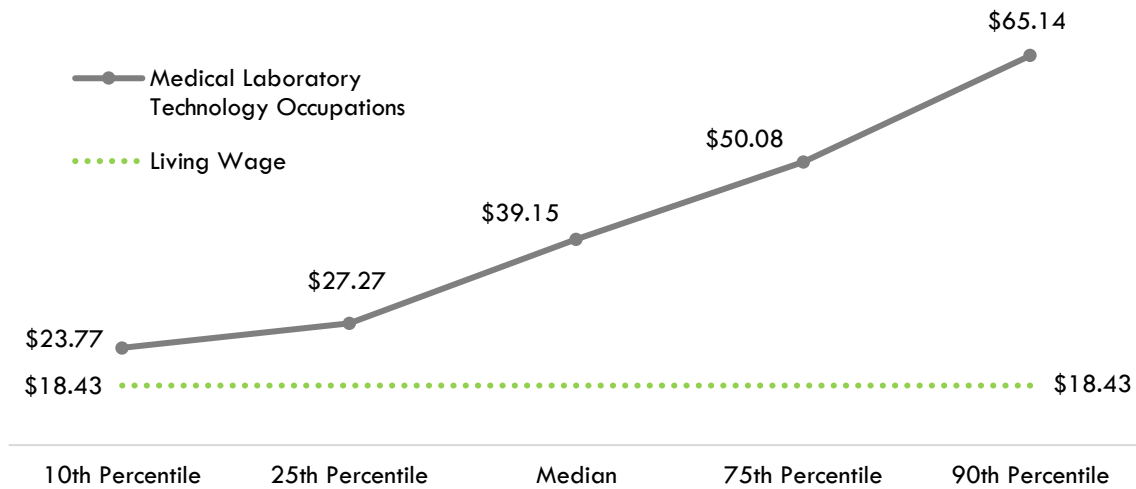
Exhibit 2a disaggregates hourly earnings by occupation. The entry-level hourly earnings for *Medical Laboratory Technology Occupations* range from \$19.63 to \$34.92.

Exhibit 2a: Hourly Earnings for Medical Laboratory Technology Occupations in San Diego County⁴

Occupational Title	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Medical Scientists, Except Epidemiologists	\$34.92	\$48.97	\$63.88
Clinical Laboratory Technologists and Technicians	\$19.63	\$29.32	\$36.28

On average, the entry-level hourly earnings for *Medical Laboratory Technology Occupations* are \$27.27; this is more than the living wage for a single adult in San Diego County, which is \$18.43 per hour (Exhibit 2b).⁵

Exhibit 2b: Average Hourly Earnings⁶ for Medical Laboratory Technology Occupations in San Diego County⁷



⁴ Lightcast 2022.03; QCEW, Non-QCEW, Self-Employed.

⁵ "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightccd.org/family-needs-calculator/.

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 2022.03; 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.⁸ There are **four** TOP codes and **seven** CIP codes related to *Medical Laboratory Technology Occupations* (Exhibit 3).

Exhibit 3: Related TOP and CIP Codes for *Medical Laboratory Technology Occupations*⁹

TOP or CIP Code	TOP or CIP Program Title
TOP 0430.00	Biotechnology and Biomedical Technology
TOP 0934.70	Electron Microscopy
TOP 0955.00	Laboratory Science Technology
TOP 1205.00	Medical Laboratory Technology
CIP 15.0401	Biomedical Technology/Technician
CIP 15.0404	Instrumentation Technology/Technician
CIP 15.0499	Electromechanical and Instrumentation and Maintenance Technologies/ Technicians, Other
CIP 26.1104	Computational Biology
CIP 41.0101	Biology Technician/Biotechnology Laboratory Technician
CIP 41.0301	Chemical Technology/Technician
CIP 51.1004	Clinical/Medical Laboratory Technician

⁸ 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).

⁹ This brief uses a conservative estimate of program supply and only calculates awards from the TOP code listed in Exhibit 3.

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

**Exhibit 4: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions
(Program Year 2017-18 through Program Year 2020-21 Average)**

TOP6 or CIP Code	TOP6 or CIP Program Title	3-Yr Annual Average CC Awards (PY18-19 to PY20-21)	Other Educational Institutions 3-Yr Annual Average Awards (PY17-18 to PY19-20)	3-Yr Total Average Supply (PY17-18 to PY20-21)
0430.00	Biotechnology and Biomedical Technology	210	0	210
	• MiraCosta	124	0	
	• San Diego Mesa	0	0	
	• San Diego Miramar	85	0	
	• Southwestern	1	0	
1205.00	Medical Laboratory Technology	29	0	29
	• San Diego Miramar	22	0	
	• Southwestern	7	0	
			Total	239

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply¹⁰ suggests that there is a **supply gap** for these occupations in San Diego County, with **571** annual openings and **239** awards. Comparatively, there are **4,205** annual openings in California and **662** awards, suggesting that there is also a supply gap across the state¹¹ (Exhibit 5).

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

	Demand (Annual Openings)	Supply¹² (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego	571	239	332
California	4,205	662	3,543

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.

¹⁰ 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.

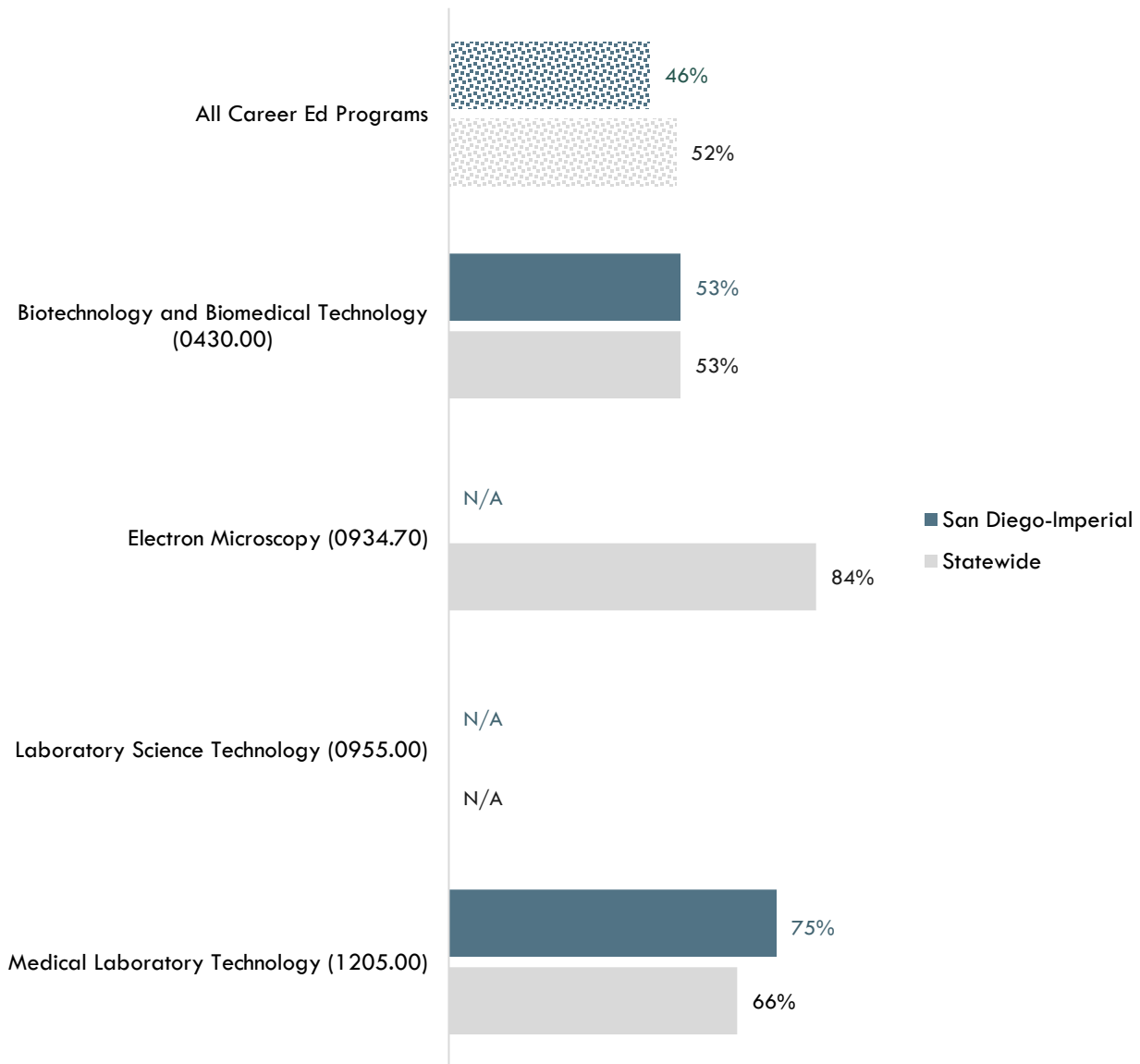
¹¹ "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/our-resources.

¹² Awards included: associate degree; award <1 year; award 1<2 years; postsecondary awards; and bachelor's degrees

Student Outcomes and Regional Comparisons

According to the California Community Colleges LaunchBoard, 53 to 75 percent of students in the San Diego-Imperial region earned a living wage after completing a program related to *Medical Laboratory Technology Occupations*, compared 53 to 84 percent statewide and 52 percent of students in Career Education programs in general across the state (Exhibit 6a).¹³

Exhibit 6a: Percentage of Students Who Earned a Living Wage by Program, PY2019-20¹⁴



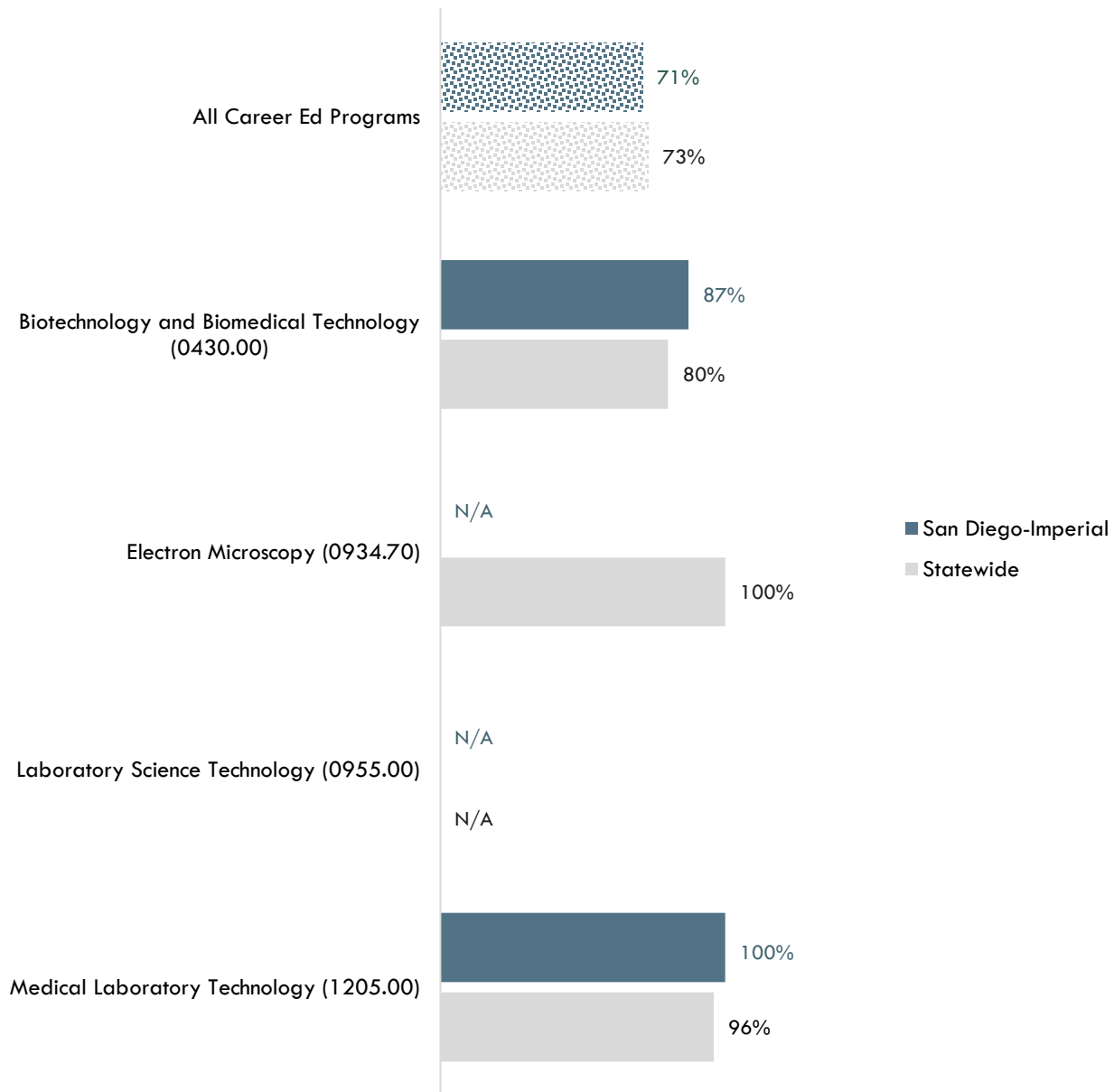
"N/A" indicates insufficient data

¹³ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁴ Most recent year with available data is Program Year 2019-20. Among completers and skills builders who exited, the percentage of students who attained a living wage.

According to the California Community Colleges LaunchBoard, 87 to 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 *Medical Laboratory Technology Occupations*, compared to 80 to 100 percent statewide and 73 percent of students in Career Education programs in general across the state (Exhibit 6b).¹⁵

Exhibit 6b: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2018-19¹⁶



"N/A" indicates insufficient data

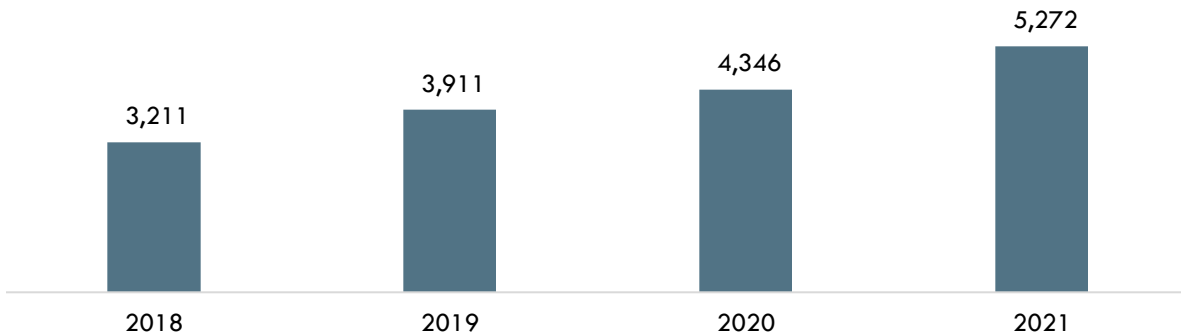
¹⁵ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁶ Most recent year with available data is Program Year 2018-19. 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 about recent changes in the labor market that are not captured by historical data. Between 2018 and 2021, there was an average of 4,185 online job postings per year for *Medical Laboratory Technology 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 b). 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 *Medical Laboratory Technology Occupations* in San Diego County (2018-2021)¹⁷



¹⁷ Lightcast; "Job Posting Analytics." 2018-2021.

Top Employers

Between January 1, 2019 and December 31, 2021, the top five employers in San Diego County for *Medical Laboratory Technology Occupations* were [University of California San Diego](#), [Kelly Services](#), [Scripps Health](#), [Aerotek](#), and [Pfizer](#) based on online job postings (Exhibit 8).

Exhibit 8: Top Employers for *Medical Laboratory Technology Occupations* in San Diego County¹⁸

Top Employers	
<ul style="list-style-type: none">• University of California San Diego• Kelly Services• Scripps Health• Aerotek• Pfizer	<ul style="list-style-type: none">• Sharp Healthcare• Prime Healthcare Services• LabCorp Drug Development• Sanford Burnham Medical Discovery Institute• Rady Children's Hospital

Education, Skills, and Certifications

Medical Laboratory Technology Occupations have a national educational attainment ranging from a bachelor's degree to a doctoral or professional degree (Exhibit 9a).

Exhibit 9a: National Educational Attainment for *Medical Laboratory Technology Occupations*¹⁹

Occupational Title	Typical Entry-Level Education
Medical Scientists, Except Epidemiologists	Doctoral or professional degree
Clinical Laboratory Technologists and Technicians	Bachelor's degree

¹⁸ Lightcast; "Job Posting Analytics." 2019-2021.

¹⁹ Lightcast 2022.03; QCEW, Non-QCEW, Self-Employed.

Based on online job postings between January 1, 2019 and December 31, 2021 in San Diego County, employers posted a **bachelor's degree** as the educational requirement for *Medical Laboratory Technology Occupations* (Exhibit 9b).²⁰

Exhibit 9b: Educational Requirements for Medical Laboratory Technology Occupations in San Diego County²¹

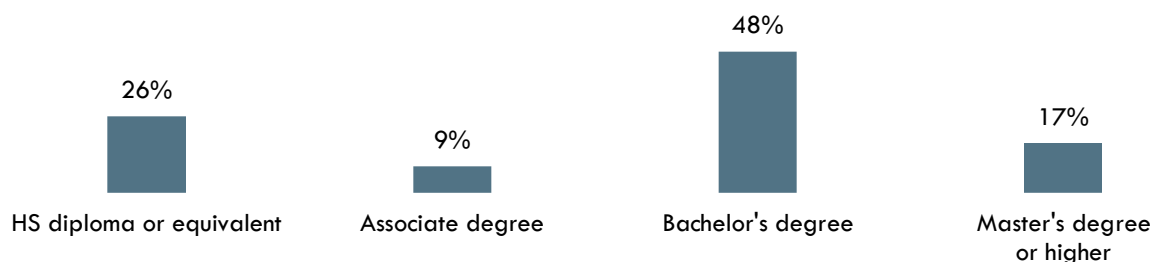


Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2019 and December 31, 2021.

Exhibit 10: Top Skills for Medical Laboratory Technology Occupations in San Diego County²²

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Biology • Medical Laboratory • Chemistry • Laboratory Experience • Biochemical Assays • Molecular Biology • Laboratory Equipment • Biochemistry • Cell Cultures • Immunology • Cell Biology • Data Analysis • Oncology • Clinical Trials • Clinical Laboratory Science • Standard Operating Procedure 	<ul style="list-style-type: none"> • Research • Communications • Detail Oriented • Management • Writing • Troubleshooting • Quality Control • Organizational Skills • Operations • Interpersonal Communications • Problem Solving • Presentations • Verbal Communication Skills • Self-Motivation • Customer Service 	<ul style="list-style-type: none"> • Microsoft Excel • Microsoft PowerPoint • Microsoft Word • Microsoft Outlook • Python • R • Microsoft Access • Microsoft Windows • MATLAB • Electronic Data Capture • SPSS • Graft • Linux • SAS • SAP Applications • Statistical Software

²⁰ Lightcast; "Job Posting Analytics." 2019-2021.

²¹ "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.

²² Lightcast; "Job Posting Analytics." 2019-2021.

Exhibit 11 lists the top certification that appeared in online job postings between January 1, 2019 and December 31, 2021.

Exhibit 11: Top Certification for *Medical Laboratory Technology Occupations* in San Diego County²³

Top Certification in Online Job Postings

1. Advanced Cardiovascular Life Support (ACLS) Certification
 2. Advanced Trauma Life Support
 3. American Board Of Optometry Certified
 4. American Medical Technologists (AMT) Certification
 5. American Registry Of Radiologic Technologists (ARRT) Certified
 6. American Society For Clinical Pathology (ASCP) Certification
 7. Assistant Laboratory Animal Technician
 8. Basic Cardiac Life Support
 9. Basic Life Support (BLS) Certification
 10. Board Certified/Board Eligible
 11. Board Certified In Internal Medicine
 12. CDL Class C License
 13. Certified Clinical Hemodialysis Technician
 14. Certified Hemodialysis Technologist/Technician (CHT)
 15. Certified Histotechnician (HT-ASCP)
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²³ Lightcast; "Job Posting Analytics." 2019-2021.

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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 for Labor Market Research (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.