C·O·E CENTERS OF EXCELLENCE FOR LABOR MARKET RESEARCH

Medical Scientists, Except Epidemiologists

Labor Market Analysis: San Diego County

January 2023

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED LEVEL OF EDUCATION
Proceed with Caution	☑	☑	☑ Doctorate Degree ☐ Master's Degree ☐ Bachelor's Degree ☐ Associate Degree ☐ Some College or Certificate ☐ HS Diploma or Equivalent ☐ Less than a HS Diploma ☐ Apprenticeship
SUPPORT FOR PROGRAM MODIFICATION?	**NUMBER OF INSTITUTIONS THAT PROVIDE TRAINING**	**NUMBER OF ANNUAL JOB OPENINGS**	
☑	MEDIUM	HIGH	

The Center of Excellence (COE) for the San Diego and Imperial Counties Community Colleges developed this brief to assist the region's community colleges with strategic planning and program development. According to available labor market information, *Medical Scientists, Except Epidemiologists* in San Diego County have a labor market demand of 323 annual job openings (while average demand for a single occupation in San Diego County is 242 annual job openings), and four educational institutions in San Diego County supply 210 awards for this occupation, suggesting that there is a supply gap in the labor market. Entry-level and median wages for this occupation 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; and 2) entry-level and median earnings are above the living wage. **The colleges should note, however, that the typical entry-level education for this occupation is a doctorate degree; therefore, a program would only be suitable if intended for working professionals or those with existing advanced degrees.**

Introduction

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

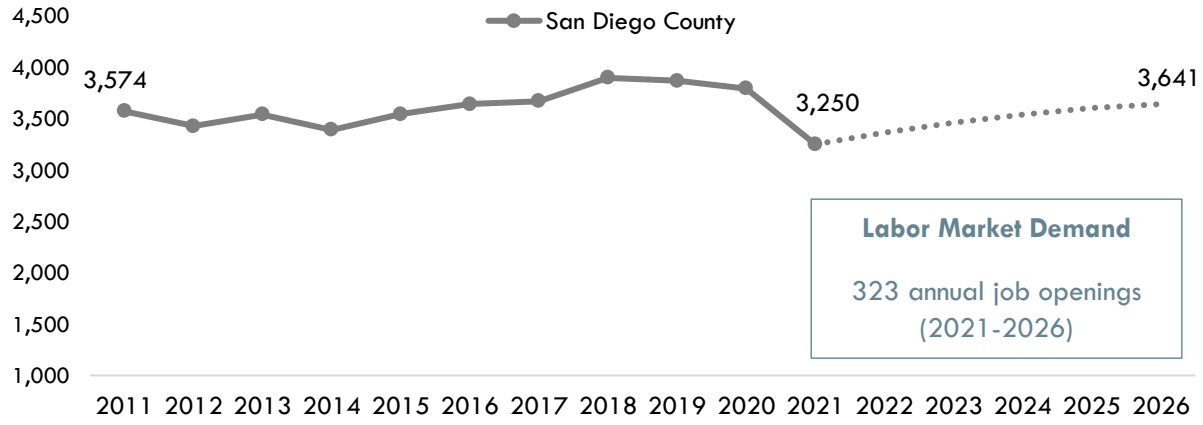
Medical Scientists, Except Epidemiologists (SOC 19-1042): Conduct research dealing with the understanding of human diseases and the improvement of human health. Engage in clinical investigation, research and development, or other related activities. Includes physicians, dentists, pharmacologists, and 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. Sample reported job titles include:

- Clinical Pharmacologist
- Study Director
- Scientist
- Researcher
- Research Scientist
- Toxicologist
- Medical Research Scientist
- Clinical Laboratory Scientist
- Medical Health Researcher
- Clinical Research Scientist

Projected Occupational Demand

Between 2021 and 2026, *Medical Scientists, Except Epidemiologists* are projected to increase by 391 net jobs or 12 percent (Exhibit 1). Employers in San Diego County will need to hire 323 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 *Medical Scientists, Except Epidemiologists* (2011-2026)[2]

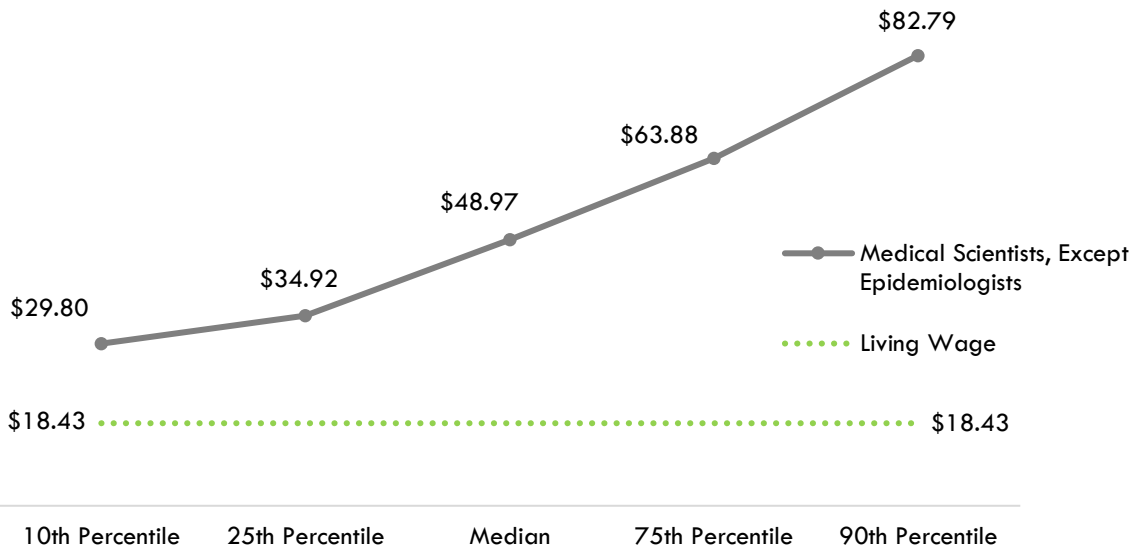


[1] The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. bls.gov/soc.
[2] Lightcast 2022.03; QCEW, Non-QCEW, Self-Employed.

Earnings

Medical Scientists, Except Epidemiologists receive entry-level hourly earnings of $34.92; this is more than the living wage for a single adult in San Diego County, which is $18.43 per hour (Exhibit 2).[3]

Exhibit 2: Hourly Earnings[4] for *Medical Scientists, Except Epidemiologists* in San Diego County[5]



[3] "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightcced.org/family-needs-calculator/.
[4] 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.
[5] 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.[6] There is one TOP code and three CIP codes related to *Medical Scientists, Except Epidemiologists* (Exhibit 3).

Exhibit 3: Related TOP and CIP Codes for *Medical Scientists, Except Epidemiologists*[7]

TOP or CIP Code	TOP or CIP Program Title
TOP 0430.00	Biotechnology and Biomedical Technology
CIP 15.0401	Biomedical Technology/Technician
CIP 26.1104	Computational Biology
CIP 41.0101	Biology/Biotechnology Technology/Technician

According to TOP data, four community colleges supply the region with awards for this occupation: MiraCosta College, San Diego Mesa College, 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 2017-18 through Program Year 2020-21 Average)

TOP6 or CIP	TOP6 or CIP 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	
			Total	**210**

[6] 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).
[7] This brief uses a conservative estimate of program supply and only calculates awards from the TOP code listed in Exhibit 3.

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply[8] suggests that there is a supply gap for this occupation in San Diego County, with 323 annual openings and 210 awards. Comparatively, there are 1,842 annual openings in California and 525 awards, suggesting that there is a supply gap across the state[9] (Exhibit 5).

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

	Demand (Annual Openings)	**Supply**[10] (Total Annual Average Supply)	**Supply Gap or Oversupply**
San Diego	323	210	**113**
California	1,842	525	**1,317**

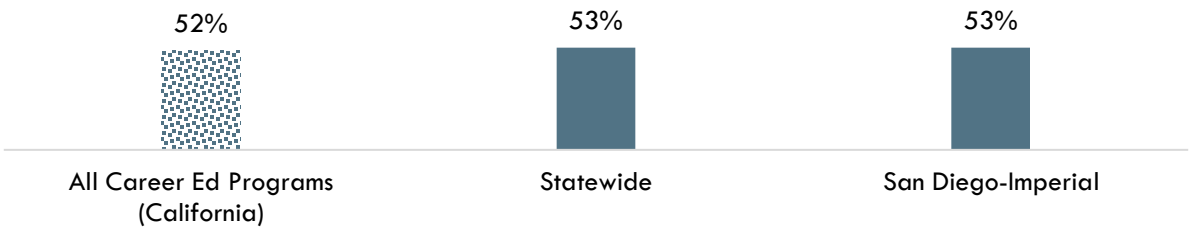
Please note: This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers;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

[8] Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.
[9] "Supply and Demand," Centers of Excellence Student Outcomes, https://coeccc.net/our-resources.
[10] Awards included: associate degree; award <1 year; award 1<2 years; postsecondary awards; and bachelor's degrees

Student Outcomes and Regional Comparisons

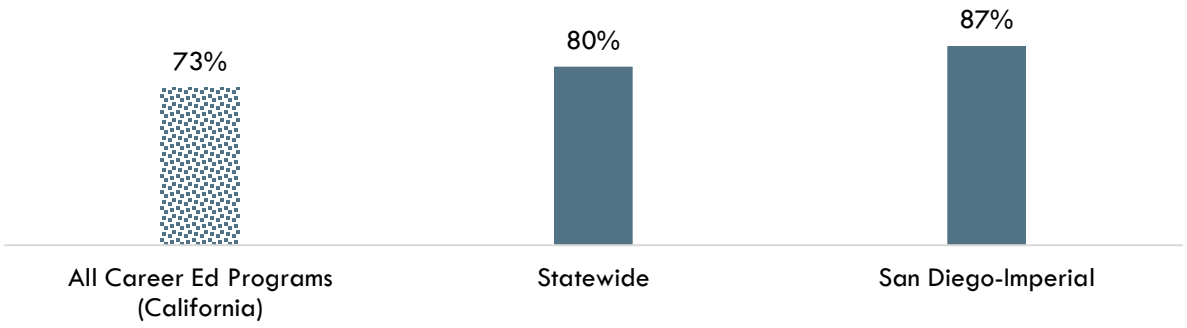
According to the California Community Colleges LaunchBoard, 53 percent of students in the San Diego-Imperial region earned a living wage after completing a Biotechnology and Biomedical Technology (TOP 0430.00) program, compared to 53 percent statewide and 52 percent of students in Career Education programs in general across the state (Exhibit 6a).[11]

Exhibit 6a: Percentage of Students Who Earned a Living Wage by Program, (Biotechnology and Biomedical Technology, PY2019-20)[12]



According to the California Community Colleges LaunchBoard, 87 percent of students in the San Diego-Imperial region obtained a job closely related to their field of study after completing a Biotechnology and Biomedical Technology (TOP 0430.00) program, compared to 80 percent statewide and 73 percent of students in Career Education programs in general across the state (Exhibit 6b).[13]

Exhibit 6b: Percentage of Students in a Job Closely Related to Field of Study by Program (Biotechnology and Biomedical Technology, PY2018-19)[14]

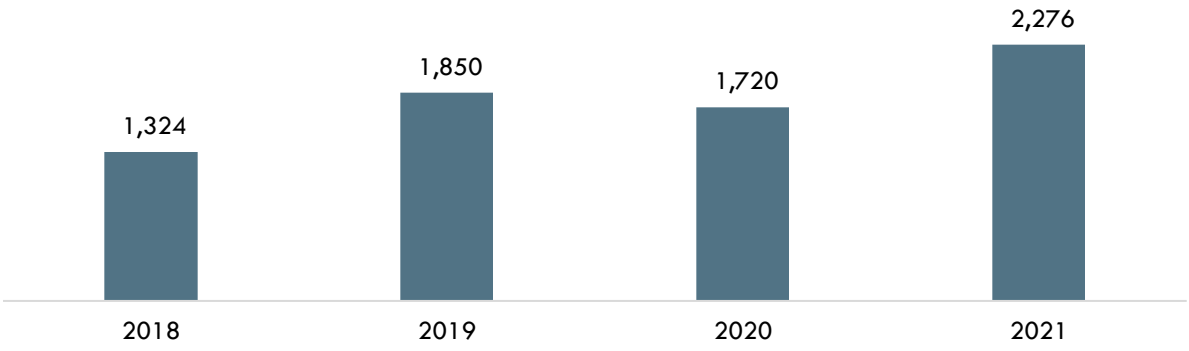


[11] "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.
[12] Most recent year with available data is Program Year 2019-20. Among completers and skills builders who exited, the percentage of students who attained a living wage.
[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 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 1,793 online job postings per year for *Medical Scientists, Except Epidemiologists* 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 *Medical Scientists, Except Epidemiologists* in San Diego County (2018-2021)[15]



[15] 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 Scientists, Except Epidemiologists* were Pfizer, University of California San Diego, Kelly Services, Scripps Health, and Fate Therapeutics based on online job postings (Exhibit 8).

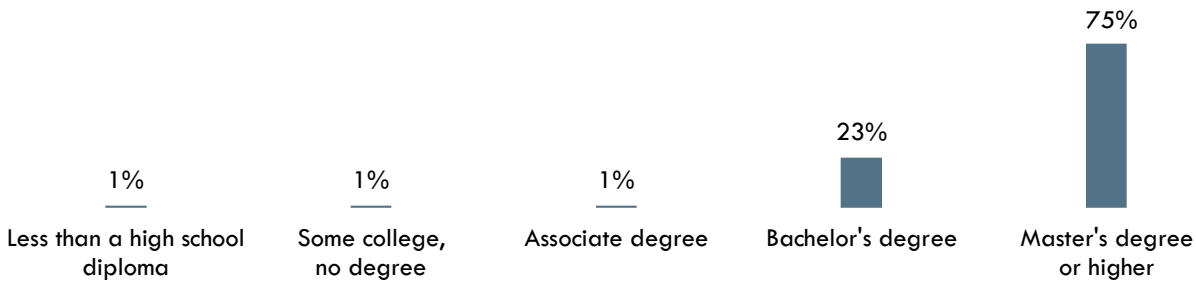
Exhibit 8: Top Employers for *Medical Scientists, Except Epidemiologists* in San Diego County[16]

Top Employers	
• Pfizer • University of California San Diego • Kelly Services • Scripps Health • Fate Therapeutics	• Johnson & Johnson • Novartis • Rady Children's Hospital • Sharp Healthcare • Aerotek

Education, Skills, and Certifications

Exhibit 9 indicates that the typical educational attainment for the occupation found currently in the national labor force is a master's degree or higher. The typical entry-level education is a doctoral or professional degree.[17]

Exhibit 9: National Educational Attainment of *Medical Scientists, Except Epidemiologists*[18]



*may not equal 100 percent due to rounding

[16] Lightcast; "Job Posting Analytics." 2019-2021.
[17] Lightcast 2022.03; QCEW, Non-QCEW, Self-Employed.
[18] "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified September 8, 2021. bls.gov/emp/tables/educational-attainment.htm.

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 Scientists, Except Epidemiologists* in San Diego County[19]

Specialized Skills	Soft Skills	Software Skills
• Biology • Biochemical Assays • Molecular Biology • Clinical Trials • Clinical Laboratory Science • Data Analysis • Oncology • Biochemistry • Cell Biology • Pharmaceuticals • Chemistry • Medical Laboratory • Immunology • Cell Cultures • Clinical Research	• Research • Communications • Presentations • Writing • Detail Oriented • Management • Microsoft Excel • Troubleshooting • Quality Control • Leadership • Problem Solving • Operations • Organizational Skills • Interpersonal Communications • Self-Motivation	• Microsoft Excel • Microsoft PowerPoint • Microsoft Word • Microsoft Outlook • Microsoft Access • R • Python • SAS • SPSS • Electronic Data Capture • MATLAB • Statistical Software • FoxPro • Adobe Photoshop • Perl

[19] Lightcast; "Job Posting Analytics." 2019-2021.

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

Exhibit 11: Top Certifications for *Medical Scientists, Except Epidemiologists* in San Diego County[20]

Top Certifications in Online Job Postings
1. Advanced Cardiovascular Life Support (ACLS) Certification
2. American Board Of Optometry Certified
3. American Medical Technologists (AMT) Certification
4. American Society For Clinical Pathology (ASCP) Certification
5. Apple Certified Support Professional
6. Assistant Laboratory Animal Technician
7. Basic Cardiac Life Support
8. Basic Life Support (BLS) Certification
9. Board Certified/Board Eligible
10. Board Certified In Internal Medicine
11. Certification in Neurophysiologic Intraoperative Monitoring (CNIM)
12. Certification Of Capability In Business Analysis (CCBA)
13. Certified Clinical Research Associate
14. Certified Diabetes Educator
15. Certified Histotechnologist (HTL-ASCP)

[20] 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.