










Precision Instrument and Equipment Repairers, All Other

Labor Market Analysis: San Diego County

October 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 Caution	 	 	<input type="checkbox"/> Doctorate Degree <input type="checkbox"/> Master's Degree <input type="checkbox"/> Bachelor's Degree <input type="checkbox"/> Apprenticeship <input type="checkbox"/> Associate Degree <input type="checkbox"/> Some College or Certificate <input checked="" 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; text-align: center; font-weight: bold;">LOW</div> 	<div style="background-color: #4a7c9c; color: white; padding: 2px; text-align: center; font-weight: bold;">LOW</div> 	

This brief provides labor market information about *Precision Instrument and Equipment Repairers, All Other* to assist the San Diego & Imperial Counties Community Colleges with program development and strategic planning. According to available labor market information, *Precision Instrument and Equipment Repairers, All Other* in San Diego County have a labor market demand of 29 annual job openings (while average demand for a single occupation in San Diego County is 289 annual job openings), and no institutions supply awards for this occupation, suggesting that there is a small supply gap in the labor market. This brief recommends proceeding with caution in developing a new program because while entry-level wages pay at or above the living wage and a supply gap exists for these occupations, **employers typically require a high school diploma or equivalent as the minimum educational requirement.**

Introduction

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

Precision Instrument and Equipment Repairers, All Other (SOC 49-9069): skilled technicians responsible for diagnosing, repairing, and maintaining a diverse assortment of precision instruments and equipment that are essential for the functioning of various industries. Their primary focus is on ensuring that these instruments and equipment operate at peak efficiency and accuracy.

Sample reported job titles include:

- Gyroscope Repairer
- Weapons System Instrument Mechanic
- Telescope Maintenance
- Scale Tester
- Scale Mechanic
- Scale Expert
- Scale Adjuster
- Repairing Calibrator
- Radioactivity Instrument Maintenance Technician
- Optical Instrument Repairer

Projected Occupational Demand

Between 2022 and 2027, employers in San Diego County will need to hire 29 workers annually to fill new jobs and backfill jobs in *Precision Instrument and Equipment Repairers, All Other* due to attrition caused by turnover and retirement, for example (Exhibit 1).

Exhibit 1: Number of Jobs for *Precision Instrument and Equipment Repairers, All Other* 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)
Precision Instrument and Equipment Repairers, All Other	272	271	-1	0%	29

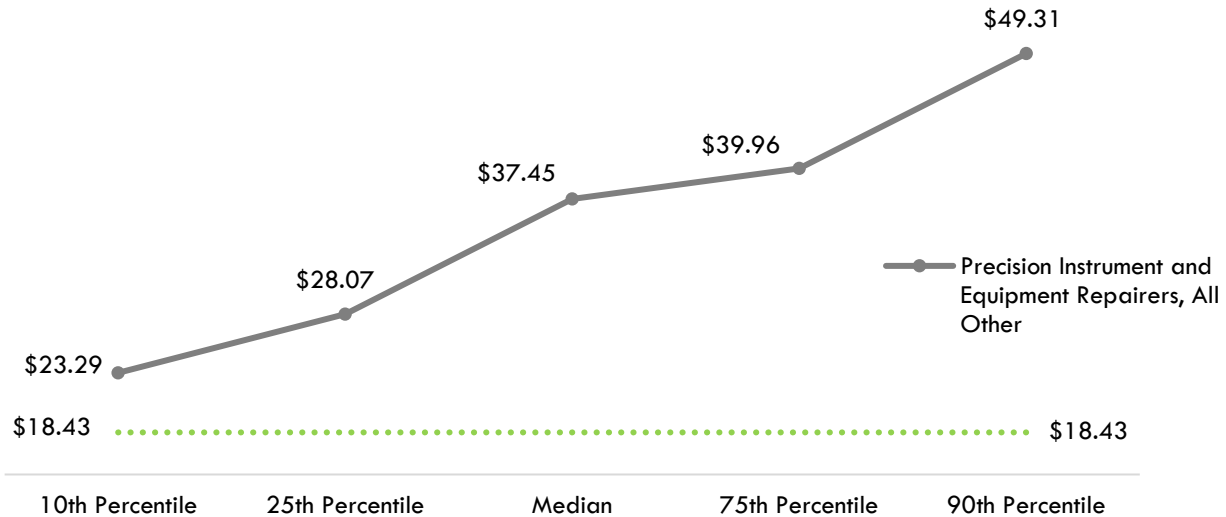
¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. [bls.gov/soc/](https://www.bls.gov/soc/).

² Lightcast 2023.03; QCEW, Non-QCEW, Self-Employed.

Earnings

Precision Instrument and Equipment Repairers, All Other receive entry-level hourly earnings of **\$28.07**; 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: Average Hourly Earnings⁴ for *Precision Instrument and Equipment Repairers, All Other* in San Diego County⁵



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 are **two** TOP codes and **one** CIP code related to *Precision Instrument and Equipment Repairers, All Other* (Exhibit 3).

Exhibit 3: Related TOP and CIP Codes for *Precision Instrument and Equipment Repairers, All Other*⁷

TOP or CIP Code	TOP or CIP Program Title
TOP 0934.70	Electron Microscopy
TOP 0943.00	Instrumentation Technology
CIP 15.0404	Instrumentation Technology/Technician

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 2023.03; QCEW, Non-QCEW, Self-Employed.

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 codes in Exhibit 3.

According to TOP and CIP data, no community college or non-community college supplies the region with awards for this occupation. (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)
0934.70	Electron Microscopy	0	0	0
0943.00	Instrumentation Technology	0	0	0
			Total	0

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply⁸ suggests that there is a supply gap for this occupation in San Diego County, with 29 annual openings and zero awards. Comparatively, there are 291 annual openings in California and 13 awards, suggesting that there is also a supply gap across the state⁹ (Exhibit 5).

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

	Demand (Annual Openings)	Supply ¹⁰ (Annual Awards)	Supply Gap or Oversupply
San Diego	29	0	29
California	291	13	278

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: 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.

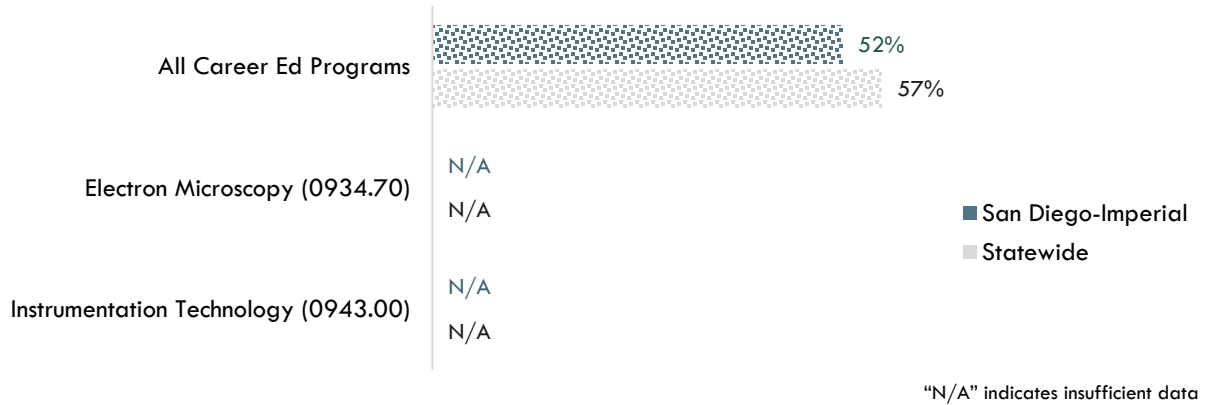
⁹ "Supply and Demand," Centers of Excellence Student Outcomes, <https://coecc.net/our-resources/>.

¹⁰ Awards included: associate degree; award <1 year; award 1<2 years; and postsecondary awards.

Student Outcomes and Regional Comparisons

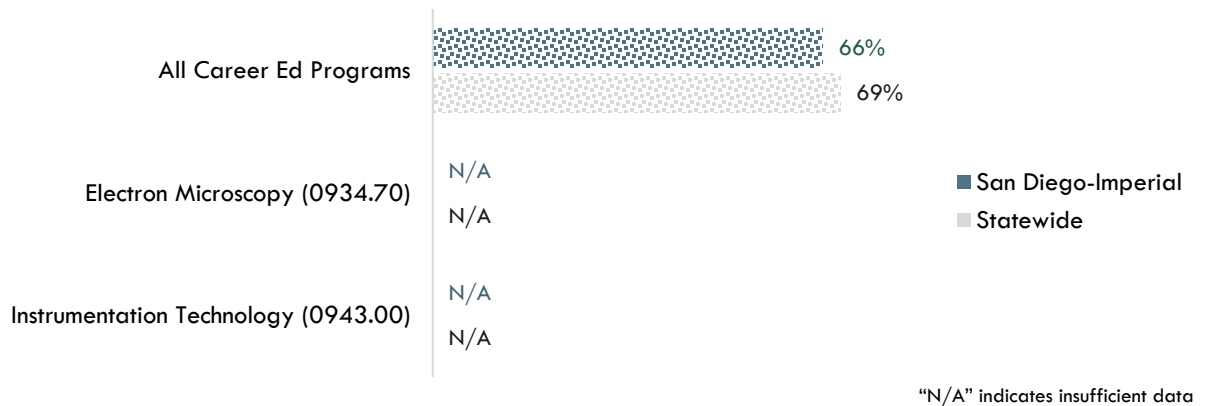
According to the California Community Colleges LaunchBoard, 57 percent of students earned a living wage in Career Education programs in general across the state (Exhibit 6a).¹¹

Exhibit 6a: Percentage of Students Who Earned a Living Wage by Program, PY2020-21¹²



According to the California Community Colleges LaunchBoard, 69 percent of students obtained a job closely related to their field of study 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, PY2019-20¹⁴



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 2020-21. Among completers and skills builders who exited, the percentage of students who attained a living wage.

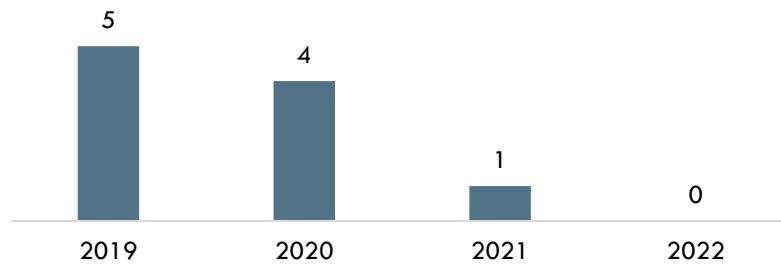
¹³ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁴ Most recent year with available data is Program Year 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 about recent changes in the labor market that are not captured by historical data. Between 2019 and 2022, there was an average of **three** online job postings per year for *Precision Instrument and Equipment Repairers, All Other* 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 *Precision Instrument and Equipment Repairers, All Other* in San Diego County (2019-2022)¹⁵



¹⁵ Lightcast; "Job Posting Analytics." 2018-2022.

Top Employers

Between January 1, 2020 and December 31, 2022, the top employers in San Diego County for *Precision Instrument and Equipment Repairers, All Other* were [Naval Air Systems Command](#), [University of California San Diego](#), and [Quidel Corporation](#) based on online job postings (Exhibit 8).

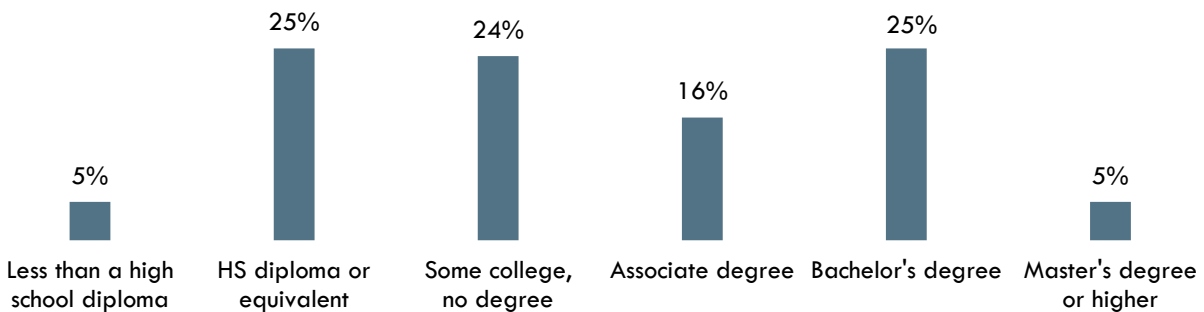
Exhibit 8: Top Employers for Precision Instrument and Equipment Repairers, All Other in San Diego County¹⁶

Top Employers
<ul style="list-style-type: none"> • Naval Air Systems Command • University of California San Diego • Quidel Corporation

Education, Skills, and Certifications

Exhibit 9 indicates that the typical educational attainment for the occupation found currently in the California labor force is between [high school diploma or equivalent](#) and [some college, no degree](#) and a [bachelor's degree](#). The typical entry-level education is a [high school diploma or equivalent](#).¹⁷

Exhibit 9: California Educational Attainment of Precision Instrument and Equipment Repairers, All Other¹⁸



*May not total 100 percent due to rounding

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¹⁶ Lightcast; "Job Posting Analytics." 2020-2022.

¹⁷ Lightcast 2023.03; 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, 2022. 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, 2020 and December 31, 2022.

Exhibit 10: Top Skills for Precision Instrument and Equipment Repairers, All Other in San Diego County¹⁹

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Customer Relationship Management • Instrument Development • Product Knowledge • Virology • Medical Devices • Oscilloscope • Technical Support • Systems Engineering • Calculations • Calibration • Cardiology • Configuration Management • Code Review • Programming Tools • Voltmeter 	<ul style="list-style-type: none"> • Computer Literacy • Communications • Professionalism • Organizational Skills • Resilience • Ethical Standards And Conduct • Self-Motivation • Research • Management • Sales • Leadership • Interpersonal Communications • Problem Solving • Operations • Troubleshooting 	<ul style="list-style-type: none"> • Spreadsheets • Programming Tools

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

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

**Exhibit 11: Top Certification for *Precision Instrument and Equipment Repairers, All Other*
in San Diego County²⁰**

Top Certification in Online Job Postings

Security Clearance

²⁰ 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.