










Food Scientists and Technologists

Labor Market Analysis: San Diego County

March 2022

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED LEVEL OF EDUCATION
 Do Not Proceed with New Program	 	 	<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	
 	<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> 	

The San Diego-Imperial Center of Excellence for Labor Market Research (COE) developed this brief to assist the region's community colleges with strategic planning and program development. According to available labor market information, *Food Scientists and Technologists* in San Diego County have a labor market demand of seven annual job openings (while average demand for a single occupation in San Diego County is 242 annual job openings), and two educational institutions in San Diego County supply two awards for this occupation, suggesting that supply is met in the labor market. Entry-level and median wages for this occupation are above the living wage. This brief recommends to not proceed with developing a new program, but supports a program modification because 1) supply is met in the region by the community colleges; 2) there is a low number of annual job openings; and 3) entry-level earnings for this occupation are above the living wage. The colleges should note that **the typical entry-level education for this occupation 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:

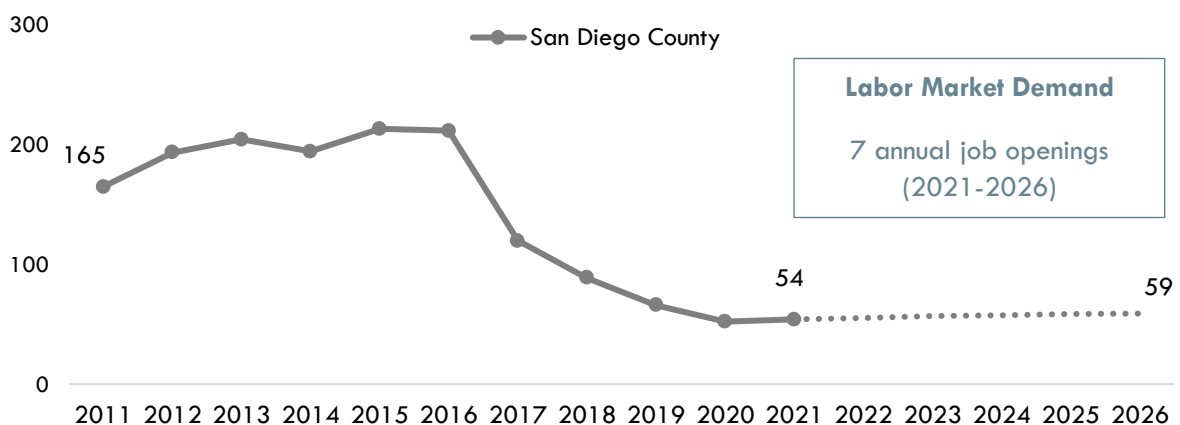
Food Scientists and Technologists (SOC 19-1012): Use chemistry, microbiology, engineering, and other sciences to study the principles underlying the processing and deterioration of foods; analyze food content to determine levels of vitamins, fat, sugar, and protein; discover new food sources; research ways to make processed foods safe, palatable, and healthful; and apply food science knowledge to determine best ways to process, package, preserve, store, and distribute food. Sample reported job titles include:

- Product Development Scientist
- Scientist
- Research Scientist
- Research Food Technologist
- Research Chef
- Formulator
- Food Engineer
- Food Chemist

Projected Occupational Demand

Between 2021 and 2026, *Food Scientists and Technologists* are projected to increase by **five** net jobs or **nine** percent (Exhibit 1). Employers in San Diego County will need to hire **seven** 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 Food Scientists and Technologists (2011-2026)²



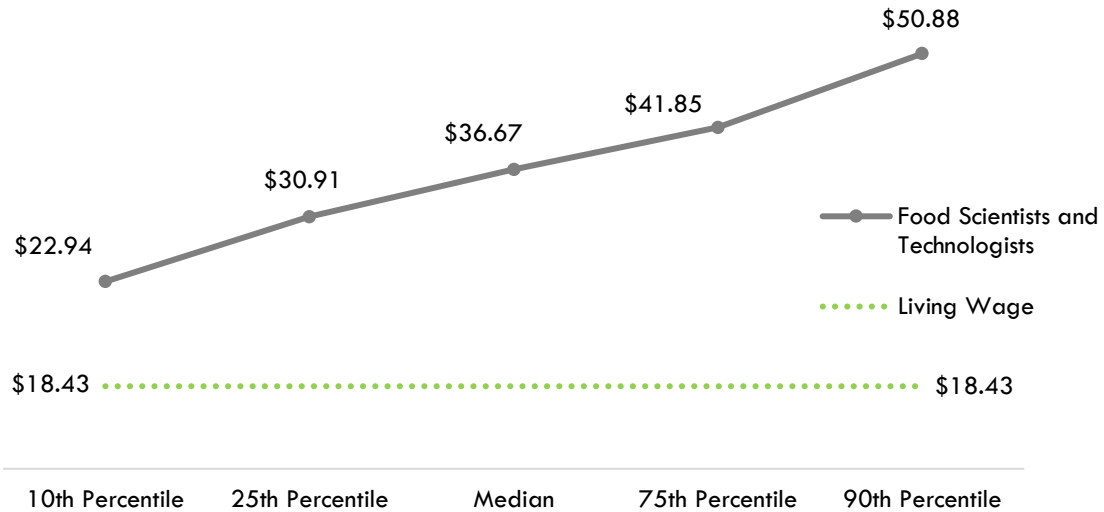
¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc/).

² EMSI 2022.01; QCEW, Non-QCEW, Self-Employed.

Earnings

Food Scientists and Technologists receive entry-level hourly earnings of \$30.91; 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 Earnings⁴ for Food Scientists and Technologists in San Diego County⁵



³ "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightccd.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 EMSI 2022.01; 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 are **three** TOP codes and **six** CIP codes related to *Food Scientists and Technologists* (Exhibit 3).

Exhibit 3: Related TOP and CIP Codes for Food Scientists and Technologists

TOP or CIP Code	TOP or CIP Program Title
TOP 0101.00	Agriculture Technology and Sciences, General
TOP 0104.00	Viticulture, Enology, and Wine Business
TOP 0113.00	Food Processing and Related Technologies
CIP 01.0102	Agribusiness/Agricultural Business Operations
CIP 01.0309	Viticulture and Enology
CIP 01.0401	Agricultural and Food Products Processing
CIP 01.1002	Food Technology and Processing
CIP 01.1003	Brewing Science
CIP 12.0510	Wine Steward/Sommelier

According to TOP data, **two** community colleges supply the region with awards for this occupation: **Cuyamaca College** and **MiraCosta 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 2016-17 through PY2019-20 Average)**

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY17-18 to PY19-20)	Other Educational Institutions 3-Yr Annual Average Awards (PY16-17 to PY18-19)	3-Yr Total Average Supply (PY16-17 to PY19-20)
0104.00	Viticulture, Enology, and Wine Business	2	0	2
	<ul style="list-style-type: none"> Cuyamaca 	1	0	
	<ul style="list-style-type: none"> MiraCosta 	1	0	
			Total	2

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).

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply⁷ suggests that the supply is met for this occupation in San Diego County, with seven annual openings and two awards. Comparatively, there are 208 annual openings in California and 840 awards, suggesting that there is an oversupply across the state⁸ (Exhibit 5).

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

	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego	7	2	5
California	208	840	632

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.

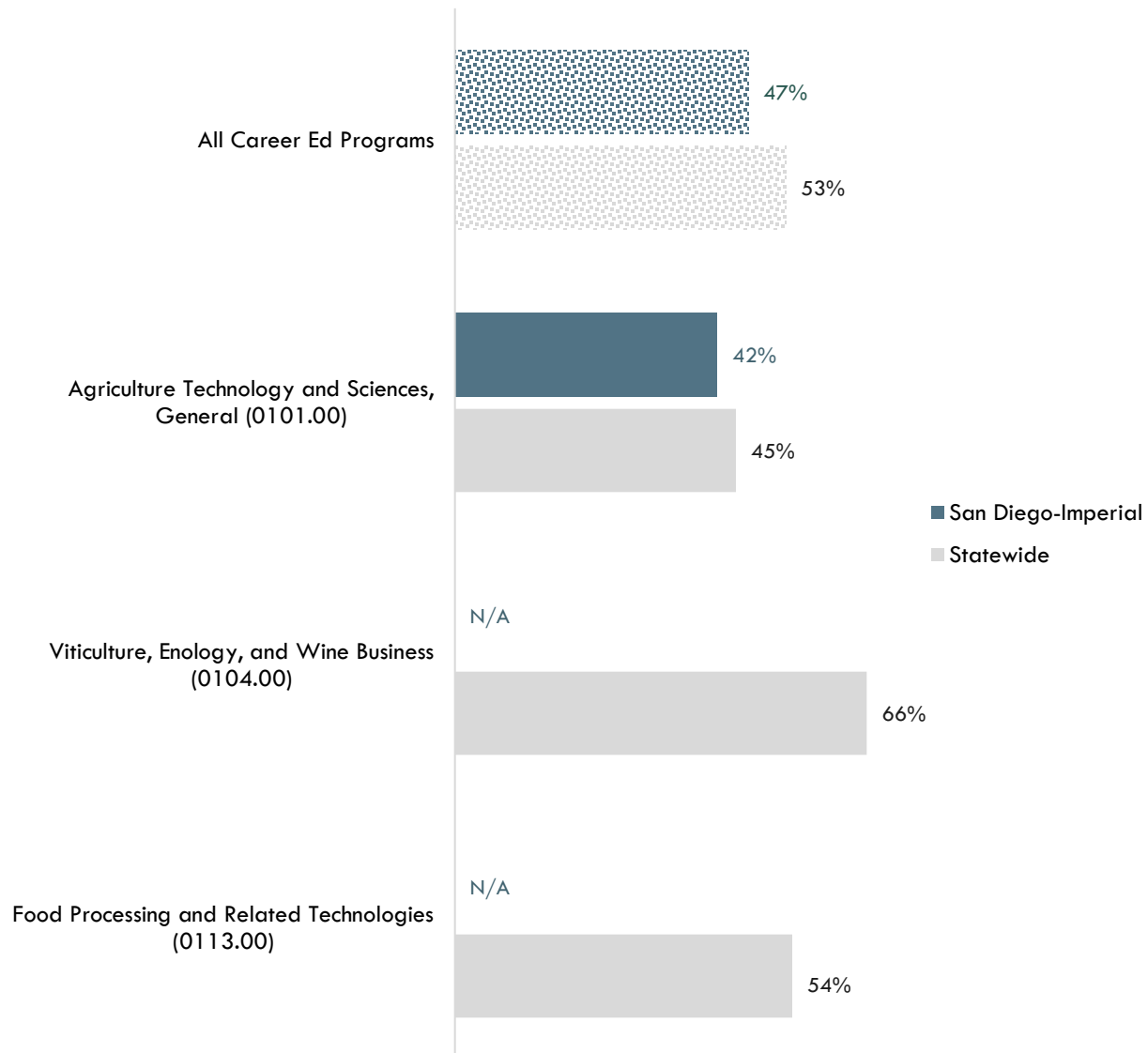
⁷ Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

⁸ "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/Supply-and-Demand.aspx.

Student Outcomes and Regional Comparisons

According to the California Community Colleges LaunchBoard, 42 percent of students in the San Diego-Imperial region earned a living wage after completing a program related to *Food Scientists and Technologists*, compared 45 to 66 percent statewide and 53 percent of students in Career Education programs in general across the state (Exhibit 6a).⁹

Exhibit 6a: Percentage of Students Who Earned a Living Wage by Program, PY2018-19¹⁰



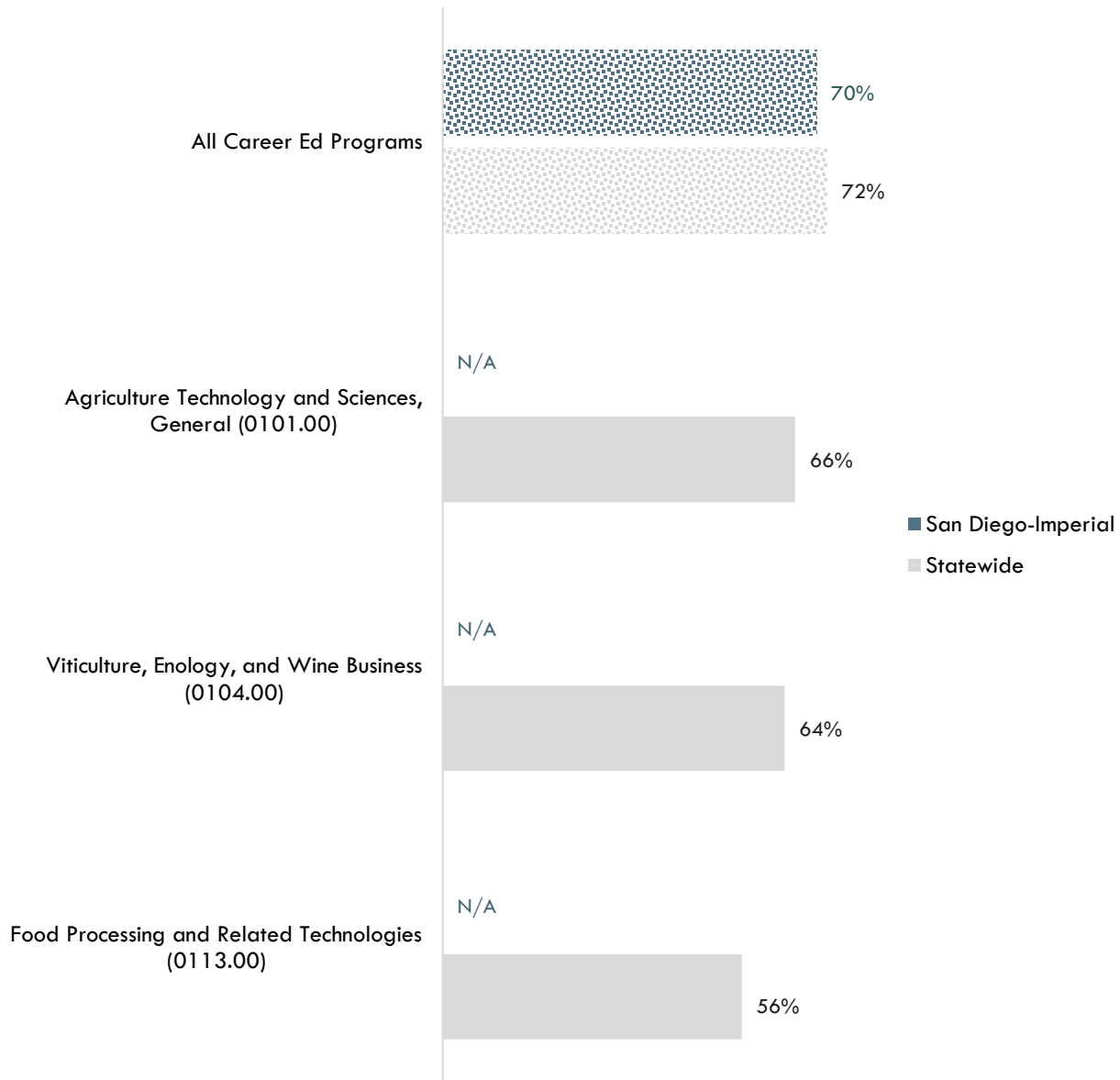
"N/A" indicates insufficient data

⁹ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁰ Among completers and skills builders who exited, the percentage of students who attained a living wage.

According to the California Community Colleges LaunchBoard, 56 to 66 percent of students statewide obtained a job closely related to their field of study after completing a program related to *Food Scientists and Technologists*, compared 72 percent of students in Career Education programs in general across the state (Exhibit 6b).¹¹

Exhibit 6b: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2017-18¹²



"N/A" indicates insufficient data

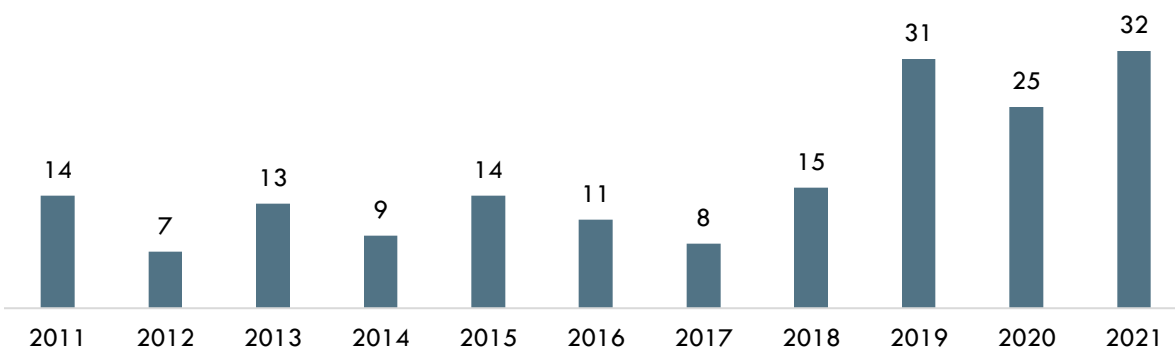
¹¹ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹² Most recent year with available data is Program Year 2017-18. 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 2011 and 2021, there was an average of 16 online job postings per year for *Food Scientists and Technologists* in San Diego County (Exhibit 7a). Please note that online job postings do **not** equal labor market demand; demand is represented by annual job openings (see Exhibit 1). Employers may post a position multiple times for various reasons, such as increasing the pool of applicants, for example.

Exhibit 7a: Number of Online Job Postings for Food Scientists and Technologists in San Diego County (2011-2021)¹³



Top Employers

Between January 1, 2019 and December 31, 2021, the top five employers in San Diego County for *Food Scientists and Technologists* were True Nutrition, Primarch Manufacturing, BioLegend, Inc., BASF Corporation, and NSF International based on online job postings (Exhibit 8).

Exhibit 8: Top Employers for Food Scientists and Technologists in San Diego County¹⁴

Top Employers	
<ul style="list-style-type: none">• True Nutrition• Primarch Manufacturing• BioLegend, Inc.• BASF Corporation• NSF International	<ul style="list-style-type: none">• Spatial Genomics• Underwriters Laboratories• Alfa Scientific Designs, Inc.• Consumer Testing Laboratories• DSSI

¹³ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2011-2021.

¹⁴ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2019-2021.

Education, Skills, and Certifications

Exhibit 9 indicates that the typical educational attainment for the occupation found currently in the national labor force is a *bachelor's degree*. The typical entry-level education is also a *bachelor's degree*.¹⁵

Exhibit 9: National Educational Attainment of Food Scientists and Technologists¹⁶



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 Food Scientists and Technologists in San Diego County¹⁷

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> Product Development Food Safety Packaging Biochemistry Experiments Cleaning Project Management Biology Customer Service Hazard Analysis Critical Control Point Immunology Molecular Biology Chemistry Data Analysis Process Improvement 	<ul style="list-style-type: none"> Communication Skills Teamwork / Collaboration Research Computer Literacy Creativity Problem Solving Organizational Skills Written Communication Physical Abilities Planning Troubleshooting Detail-Oriented Meeting Deadlines Presentation Skills Writing 	<ul style="list-style-type: none"> Microsoft Excel Microsoft Word Enterprise Resource Planning Microsoft Outlook Salesforce SQL Customer Relationship Management Adobe Campaign Adobe Experience Manager Eloqua Microsoft Project SAS Tableau Apache Ant

¹⁵ EMSI 2022.01; QCEW, Non-QCEW, Self-Employed.

¹⁶ "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified September 4, 2019. bls.gov/emp/tables/educational-attainment.htm.

¹⁷ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 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 *Food Scientists and Technologists* in San Diego County¹⁸

Top Certifications in Online Job Postings

1. Registered Environmental Health Specialist
 2. Hazard Analysis and Critical Control Point (HACCP) Certification
 3. Certified Professional - Food Safety
 4. Certified Sanitarian
 5. FSSC 22000
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¹⁸ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 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.

This workforce demand report uses state and federal job projection data that was developed before the economic impact of COVID-19. The COE is monitoring the situation and will provide more information as it becomes available. Please consult with local employers to understand their current employment needs.