

# Food Scientists and Technologists Labor Market Analysis: San Diego County

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## Summary

According to available labor market information, there is a small demand for *Food Scientists and Technologists* in San Diego County. The occupation of *Food Scientists and Technologists* has a labor market demand of 23 annual job openings, while the average demand for an occupation in San Diego County is 276 annual job openings. This occupation's entry-level and median wages are higher than the Self-Sufficiency Standard, suggesting that students who successfully complete a program and obtain employment in a related field may earn living wages. The labor market analysis suggests that new programs created for this occupation should be in undergraduate-level coursework related to a bachelor's degree.

The following list summarizes findings from the labor market analysis for *Food Scientists and Technologists*:

- Between 2018 and 2023, *Food Scientists and Technologists* is projected to increase by 10 jobs or five percent.
- Employers in San Diego County will need to hire 23 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.
- Between 2010 and 2018, there was an average of 10 online job postings per year for *Food Scientists and Technologists*.
- *Food Scientists and Technologists* earn median hourly earnings of \$27.54; this is more than the Self-Sufficiency Standard for a single adult in San Diego County, which is \$15.99 per hour.
- There are three Taxonomy of Programs (TOP) codes and five Classification of Instructional Programs (CIP) codes related to *Food Scientists and Technologists*.
- According to TOP and CIP data analysis, no community college supplies the region with awards for this occupation. Although San Diego State University offers food science and technology courses, no awards have been reported.
- Comparing labor demand (annual openings) with labor supply suggests that there is a supply gap for this occupation in San Diego County, with 23 annual openings and no awards. Comparatively, in California there are 307 annual openings and 255 completions.

- Between January 1, 2016 and December 31, 2018, the top five employers in San Diego County for this occupation were Alcock & Mcfadden, Alere Incorporated, Anthem Blue Cross, Applied Proteomics, and Aries Pharmaceuticals.
- The typical entry-level education for *Food Scientists and Technologists* 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)<sup>1</sup> 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:

- Technical Director
- Seafood Technology Specialist
- Research Scientist
- Research Food Technologist
- Research Chef
- Research and Development Manager
- Quality Control Inspector (QC Inspector)

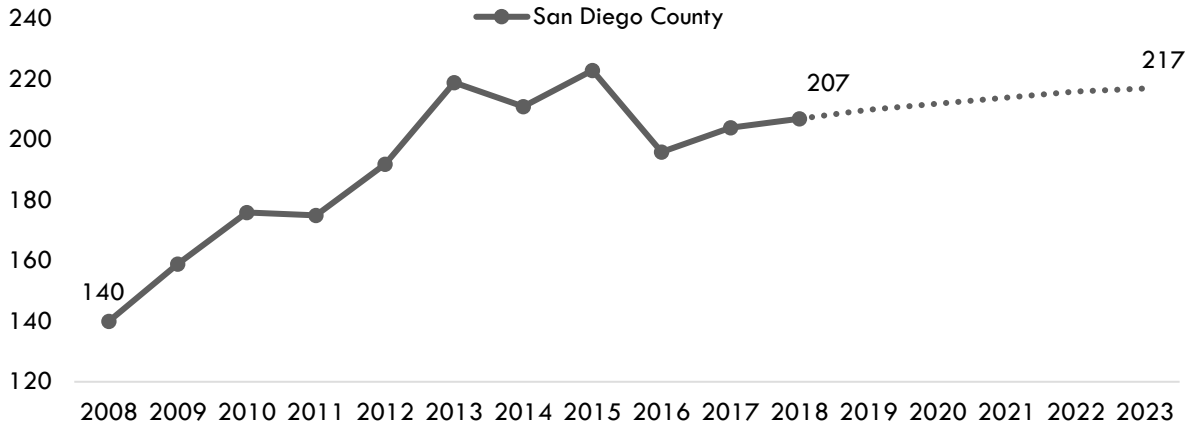
## Projected Occupational Demand

Between 2018 and 2023, the occupation of *Food Scientists and Technologists* is projected to increase by **10** jobs or **five** percent (Exhibit 1). Employers in San Diego County will need to hire **23** workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

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<sup>1</sup> 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).

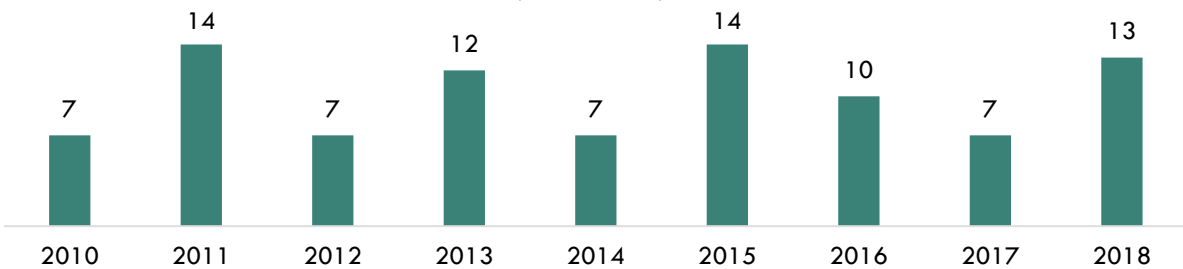
**Exhibit 1: Number of Jobs for Food Scientists and Technologists (2008-2023)<sup>2</sup>**



## Online Job Postings

Between 2010 and 2018, there was an average of 10 online job postings per year for *Food Scientists and Technologists* (Exhibit 2).

**Exhibit 2: Number of Online Job Postings for Food Scientists and Technologists in San Diego County (2010-2018)<sup>3</sup>**



## Earnings

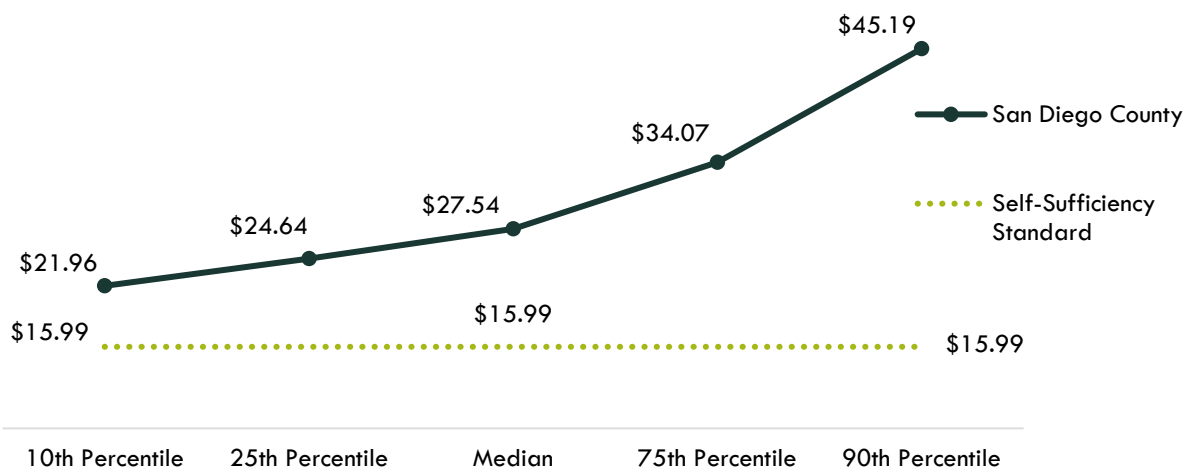
*Food Scientists and Technologists* receives median hourly earnings of \$27.54; this is more than the Self-Sufficiency Standard for a single adult in San Diego County, which is \$15.99 per hour (Exhibit 3).<sup>4</sup>

<sup>2</sup> Source: Emsi 2018.04; QCEW, Non-QCEW, Self-Employed.

<sup>3</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2010-2018.

<sup>4</sup> "Self-Sufficiency Standard," Insight: Center for Community Economic Development, last updated 2018. insightcced.org/2018-self-sufficiency-standard.

**Exhibit 3: Hourly Earnings<sup>5</sup> for Food Scientists and Technologists in San Diego County<sup>6</sup>**



## Educational Supply

The 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.<sup>7</sup> There are **three** TOP codes and **five** CIP codes related to *Food Scientists and Technologists* (Exhibit 4).

**Exhibit 4: Related TOP and CIP Codes in San Diego County**

### SOC 19-1012: Food Scientists and Technologists

TOP 010100: Agriculture Technology and Sciences, General

TOP 010400: Viticulture, Enology, and Wine Business

TOP 011300: 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 12.0510: Wine Steward/Sommelier

<sup>5</sup> 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.

<sup>6</sup> Source: Emsi, 2018.04; QCEW, Non-QCEW, Self-Employed.

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

According to TOP and CIP data, no community college supplies the region with awards for this occupation. However, San Diego State University offers food science and technology courses<sup>8</sup> (Exhibit 5).

**Exhibit 5: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2013-14 through PY2016-17 Average)**

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY14-15 to PY16-17)	Other Educational Institutions 3-Yr Annual Average Awards (PY13-14 to PY15-16)	3-Yr Total Average Supply (PY13-14 to PY16-17)
010100	Agriculture Technology and Sciences, General	0	0	0
010400	Viticulture, Enology, and Wine Business	0	0	0
011300	Food Processing and Related Technologies	0	0	0
01.0102	Agribusiness/Agricultural Business Operations	0	0	0
01.0309	Viticulture and Enology	0	0	0
01.0401	Agricultural and Food Products Processing	0	0	0
01.1002	Food Technology and Processing	0	0	0
12.0510	Wine Steward/Sommelier	0	0	0
			<b>Total</b>	<b>0</b>

## Demand vs. Supply

A comparison of labor demand (annual openings) to labor supply<sup>9</sup> suggests a supply gap for this occupation in San Diego County, with 23 annual openings and no awards. A statewide comparison also suggests a supply gap in California, with 307 annual openings and 255 completions<sup>10</sup> (Exhibit 6).

<sup>8</sup> "13 Institutions in California Offering On-Campus Food Science and Technology Courses," San Diego State University, Hotcoursesabroad: An IDP Company. [hotcoursesabroad.com/study/training-degrees/california/food-science-and-technology-courses/loc/18/cgory/b11-3/sin/ct/programs.html](http://hotcoursesabroad.com/study/training-degrees/california/food-science-and-technology-courses/loc/18/cgory/b11-3/sin/ct/programs.html)

<sup>9</sup> 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.

<sup>10</sup> Source: Emsi, 2018.04; QCEW, Non-QCEW, Self-Employed.

**Exhibit 6: Labor Demand (Annual Openings) Compared to Labor Supply (Average Annual Awards)**

Community Colleges and Other Postsecondary Educational Institutions	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego	23	0	23
California	307	255	52

**Please note:** This is a basic analysis of supply and demand of labor. 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. Additionally, the data does not include workers who are currently in the labor force who could fill these positions or workers who are not captured by publicly available data.

**Student Outcomes**

Based on the information available in the CTE LaunchBoard, students who took courses in the related TOP codes exhibited the following outcomes (Exhibit 7).

**Exhibit 7: Strong Workforce Program Metrics for TOP 011300: Food Processing and Related Technologies in San Diego-Imperial Region vs. California (PY2015-16)**

Metric	San Diego-Imperial	California
Number of course enrollments <sup>11</sup>	19	291
Completed 12+ CTE units in one year <sup>12</sup>	N/A	19
Completed 48+ CTE contact hours in one year <sup>13</sup>	0	0
Number of students who got a degree or certificate <sup>14</sup>	N/A	11
Number of students who transferred <sup>15</sup>	N/A	N/A
Employed in the second fiscal quarter after exit <sup>16</sup>	N/A	78%
Employed in the fourth fiscal quarter after exit <sup>17</sup>	N/A	78%
Job closely related to field of study	N/A	N/A

<sup>11</sup> The number of enrollments in courses assigned to the TOP code in the selected year.

<sup>12</sup> The number of students who completed 12 or more credit CTE units.

<sup>13</sup> The number of students who completed 48 or more noncredit CTE instructional contact hours.

<sup>14</sup> The number of unduplicated students who earned a locally-issued certificate, Chancellor's Office approved certificate, associate degree, and/or California Community Colleges bachelor's degree in the selected TOP code.

<sup>15</sup> Students who took non-introductory courses or completed a California Community Colleges Chancellor's Office award in the selected TOP code in selected year who subsequently enrolled for the first time in a four-year institution the following year.

<sup>16</sup> Among all exiters with a valid SSN, the percentage who were employed two quarters after exiting California Community Colleges.

<sup>17</sup> Among exiting students with a valid SSN, the percentage who were employed four quarters after exiting California Community Colleges.

Metric	San Diego-Imperial	California
Job closely related to field of study <sup>18</sup>	N/A	N/A
Median earnings in the second fiscal quarter after exit <sup>19</sup>	N/A	\$8,137
Median change in earnings <sup>20</sup>	N/A	68%
Attained a living wage <sup>21</sup>	N/A	56%

## Top Employers and Work Locations

Between January 1, 2016 and December 31, 2018, the top five employers in San Diego County for this occupation were [Alcock & Mcfadden](#), [Alere Incorporated](#), [Anthem Blue Cross](#), [Applied Proteomics](#), and [Aries Pharmaceuticals](#) (Exhibit 8).

### Exhibit 8: Top Employers in San Diego County for Food Scientists and Technologists<sup>22</sup>

Top Employers	
<ul style="list-style-type: none"> <li>• Alcock &amp; Mcfadden, Inc.</li> <li>• Alere</li> <li>• Anthem Blue Cross</li> <li>• Applied Proteomics</li> <li>• Aries Pharmaceuticals</li> </ul>	<ul style="list-style-type: none"> <li>• AtWork SoCal</li> <li>• Chosen Foods</li> <li>• Foley Family Wines</li> <li>• Foodarom</li> <li>• Jack in the Box</li> </ul>

## Skills, Education, and Certifications

Exhibit 9 indicates the educational attainment for the occupation found currently in the national labor force. There is no typical on-the-job training for this profession. The typical entry-level education is a [bachelor's degree](#).<sup>23</sup>

<sup>18</sup> Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

<sup>19</sup> Among exiting students, the median second-quarter earnings one year after the year in which they exited California Community Colleges.

<sup>20</sup> Among exiting students with a valid SSN, the percentage change in earnings one year before and one year after exiting California Community Colleges.

<sup>21</sup> Among completers and skills builders who exited, the proportion of students who attained a living wage.

<sup>22</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2010-2018.

<sup>23</sup> Source: Emsi, 2018.04; QCEW, Non-QCEW, Self-Employed.

**Exhibit 9: National Educational Attainment of Food Scientists and Technologists<sup>24</sup>**



\*May not add to 100% due to rounding

Exhibit 10 lists the top specialized, soft and software skills that appeared in online job postings for this occupation between January 1, 2016 and December 31, 2018.

**Exhibit 10: Top Skills for Food Scientists and Technologists in San Diego County<sup>25</sup>**

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> <li>• Product Development</li> <li>• Chemistry</li> <li>• Experiments</li> <li>• Food Science</li> <li>• Project Management</li> </ul>	<ul style="list-style-type: none"> <li>• Research</li> <li>• Teamwork / Collaboration</li> <li>• Written Communication</li> <li>• Detail-Oriented</li> <li>• Problem Solving</li> </ul>	<ul style="list-style-type: none"> <li>• Automation Tools</li> <li>• Microsoft Excel</li> <li>• Microsoft PowerPoint</li> <li>• Microsoft SharePoint</li> <li>• Adobe Marketing Cloud</li> </ul>

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<sup>24</sup> "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified October 18, 2018. [bls.gov/emp/tables/educational-attainment.htm](https://bls.gov/emp/tables/educational-attainment.htm).

<sup>25</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2010-2018.



**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.