LIFE SCIENCES & BIOTECHNOLOGY

Orange County Sector Analysis Project

Nov 2021

Prepared by:
Orange County Center of Excellence
for Labor Market Research

POWERED BY
California Community Colleges

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Orange County Community Colleges

SECTOR OVERVIEW

This Sector Profile highlights key points from the entire Life Sciences and Biotechnology sector in Orange County as well as from the Orange County (OC) Sector Analysis Project – a research report conducted by the OC Center of Excellence for Labor Market Research. Life Sciences and Biotechnology is a sector that exists at the crossroads of innovative scientific research and the dynamic market economy. It is comprised of professional, scientific and technical industries that involve the scientific study of living organisms. Individuals who are able to obtain employment in this industry are typically rewarded with high-paying, challenging positions that provide considerable advancement opportunities. California leads the world in Life Sciences innovation and is the number one state for Life Sciences employment with over 488,000 direct jobs and 1,376,000 total jobs, including direct, indirect, and induced jobs. The 11,000 Life Sciences companies in California are mostly related to Medical Equipment and Device Manufacturing, Research, and Biotechnology.

Data Points

54,238
people employed in OC

3.6% (1,934)
5-year projected job change

2,193
businesses in OC

12.7%
of the sector's employment in California is from OC

$107,962
average earnings per job

11%
of the sector's businesses in California are from OC

The Life Sciences and Biotechnology sector accounts for 54,238 jobs in the Orange County region and 12.7% of all Life Sciences and Biotechnology jobs in California. There are approximately 2,193 individual businesses in the region which make up 11% of all the businesses for the sector in California. This sector is projected to grow by 3.6% (or 1,954 jobs) in the next five years in Orange County. The average earnings per Life Sciences and Biotechnology job are $107,692.

Local Employers

- Alcon
- Bio-Rad Laboratories
- Octapharma Plasma
- Medtronic
- AVID Bioservices
- Biophase

TOP MIDDLE-SKILL JOBS

Middle-skill jobs are occupations that community college students would be best prepared for after obtaining a certificate or degree. The top middle-skill jobs for the Life Sciences and Biotechnology sector are included below, along with corresponding entry-level and median hourly wages.

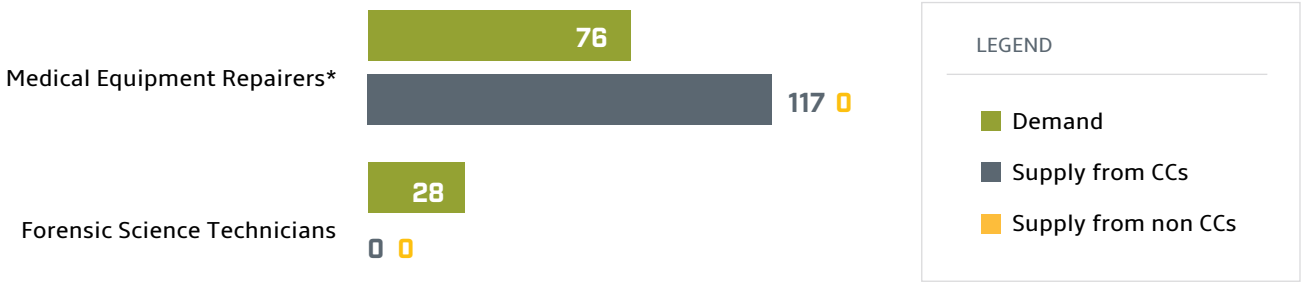
Middle-Skill Jobs Attainable with a Community College Education, Orange County (2020-2025)

SOC Code	SOC Occupational Title	Demand Annual Openings	Entry-Level Wage 25th Percentile	Median Wage
49-9062	Medical Equipment Repairers	76	$23.21	$31.40
19-4092	Forensic Science Technicians	28	$31.07	$41.27

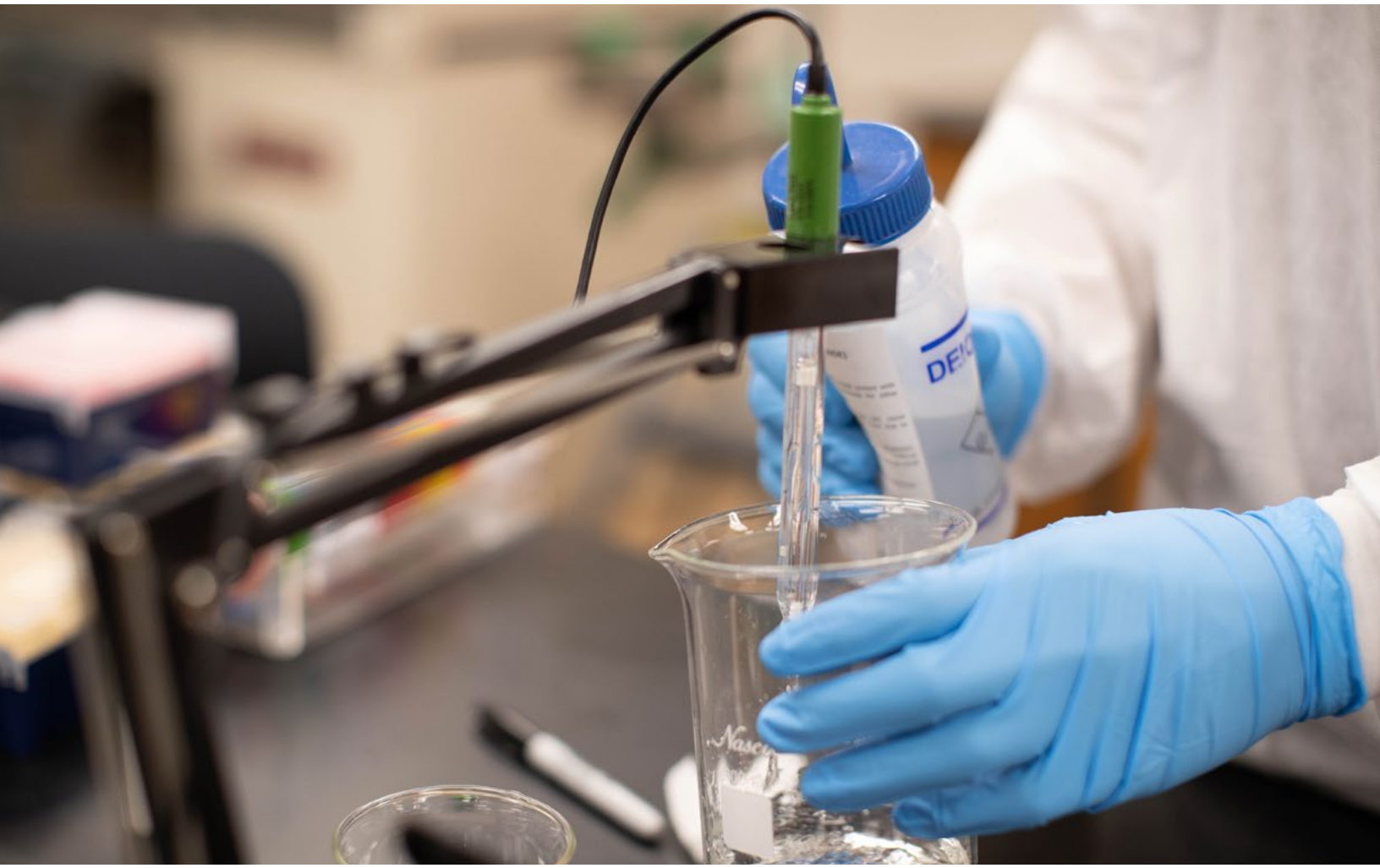
LABOR MARKET DEMAND, PROGRAM SUPPLY, & SUPPLY GAPS

Top middle-skill jobs are defined as occupations with the most labor market demand, stable employment growth, and entry-level wages at or above the living wage, as determined by the California Family Needs Calculator. The living wage for a single adult in Orange County is currently $20.63.[1] Comparing labor market demand with program supply suggests that one of the top two middle-skill jobs in this sector have supply gaps in the Orange County region. Labor market demand is defined as the number of average annual job openings per year that employers expect to fill for a particular occupation. Program supply is the number of awards (e.g., degrees, certificates) from community colleges and other training providers.

Top Middle-Skill Jobs in Orange County: Labor Market Demand vs. Program Supply



(Please note: * indicates that the occupation has an oversupply of labor, ^ indicates that the occupation's demand has been met, and N/A indicates that no community college program reported awards for this occupation or no community college program is available for this occupation.)

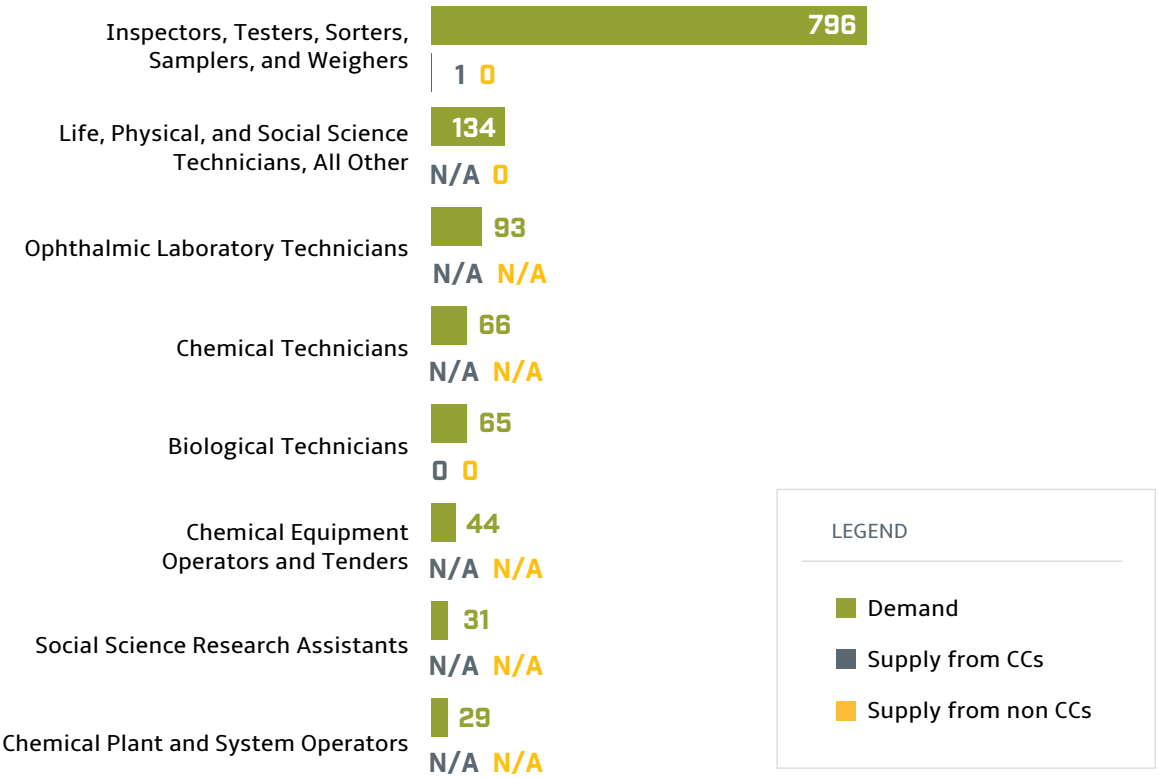


[1] The living wage as determined by the California Family Need Calculator is the hourly wage that a single adult needs to earn to meet basic needs in Orange County. https://insightcced.org/family-needs-calculator/

MIDDLE-SKILL JOBS WITH ENTRY-LEVEL WAGES BELOW THE REGIONAL LIVING WAGE

While it is important to understand which top middle-skill jobs have opportunities for increased program supply, it is also important to consider middle-skill occupations that have entry-level wages below the regional living wage, currently at $20.63, but median wages near or above it. Since wages generally increase from entry-level to median earnings with additional experience and training, students could potentially earn self-sustaining wages with additional apprenticeship or work-based learning opportunities.

Middle-Skill Jobs in Orange County with Entry-Level Wages Below the Regional Living Wage



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Entry-Level and Median Wages for Middle-Skill Jobs in Orange County with Entry-Level Wages Below the Regional Living Wage

SOC Code	SOC Occupational Title	Demand Annual Openings	Entry-Level Wage 25th Percentile	Median Wage Above the Living Wage
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	796	$15.50	$19.70
19-4099	Life, Physical, and Social Science Technicians, All Other	134	$19.18	$25.93
51-9083	Ophthalmic Laboratory Technicians	93	$14.64	$17.81
19-4031	Chemical Technicians	66	$16.98	$21.91
19-4021	Biological Technicians	65	$18.16	$23.02
51-9011	Chemical Equipment Operators and Tenders	44	$20.21	$27.07
19-4061	Social Science Research Assistants	31	$19.38	$23.11
51-8091	Chemical Plant and System Operators	29	$18.30	$21.31

KEY FINDINGS & RECOMMENDATIONS

Between July and August 2019, focus groups comprised of stakeholders from the community colleges and industry experts met to review the labor market demand and program supply for middle-skill jobs in Orange County's Priority and Emerging Sectors. The objectives of the focus groups were to identify labor market supply gaps in middle-skill jobs and provide intelligence as to how Orange County community colleges are working to close supply gaps, as well as the challenges they encounter in their programs. The following summarizes the findings and recommendations for the Life Sciences and Biotechnology sector.

1,362
annual job openings
(labor market demand)

118
average annual program awards
(labor market supply)

1,244
supply gap
(awards needed to close the gap)

Key Finding

Recommendation

1 **Employers in this sector heavily recruit from four-year colleges, even if a position does not require a bachelor's degree:** Even though employers tend to have a preference to hire students from four-year colleges, there is anecdotal evidence that students taking community college course have stronger lab skills than their four-year college counterparts. Additionally, some technical lab skills are not typically taught at four-year colleges, where training tends to be more theoretical.

To break down the bachelor's degree requirement with employers, the Regional Employer Engagement Team and internship coordinators at each college could work with employers to show how Orange County community colleges are preparing students to meet employers' demand for qualified workers.

2 **Life Sciences and Biotechnology is a relatively new sector and attracting young students is difficult:** Programs in this sector have historically attracted working professionals that are adding additional skills to advance in their current job. Because of the emerging nature of this sector, high school students are not always aware of Life Sciences and Biotechnology jobs and opportunities. Finding dual enrollment partners and integrating the K-12 system into a pathway has been difficult.

To raise awareness, attract younger students to community college programs, and increase enrollments in this sector, colleges could intentionally promote programs to targeted audiences such as K-12 students, career counselors, and K-12 partners. These efforts could help make high school students aware of Life Sciences and Biotechnology programs at the community colleges and create a potential pipeline of students to increase enrollment.

Key Finding

Recommendation

3 **Knowledge, Skills, and Abilities (KSAs) for the sector have not been validated by employers:** The OC Sector Analysis Project brief examines job gaps but does not explore the specific KSAs taught at the colleges and compare them to the labor market's demand for Life Sciences and Biotechnology KSAs.

To determine if the region's community colleges are training for the right KSAs, the Regional Employer Engagement Team should convene employers in a "regional advisory group" where employers can review program KSAs, provide feedback, and validate the KSAs' current relevance and demand in the labor market.

MORE ABOUT THE CENTERS OF EXCELLENCE

The Centers of Excellence (COE) for Labor Market Research deliver regional workforce research and technical expertise to California Community Colleges for program decision-making and resource-development. This information has proven valuable to colleges in beginning, revising, or updating economic development and Career Education (CE) programs, strengthening grant applications, assisting in the accreditation process, and in supporting strategic planning efforts.

The Centers of Excellence Initiative is funded in part by the Chancellor's Office, California Community Colleges, Economic and Workforce Development Program. The Orange County COE is fully funded by the Orange County Regional Strong Workforce Program allocation. The Centers aspire to be the leading source of regional workforce information and insight for California Community Colleges. More information about the Centers of Excellence is available at coeccc.net.

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For the full report, visit Orange County at coeccc.net.

Sources

Demand data is pulled from Emsi, a software program that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS), and other government agencies.

Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Important Disclaimer

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 such as those from the Orange County Center of Excellence for Labor Market Research and Cal-PASS Plus LaunchBoard. 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 college/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.

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