

## Program Endorsement Brief: 0430.00/Biotechnology and Biomedical Technology Los Angeles/Orange County Center of Excellence, April 2019

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### Summary

The Los Angeles/Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide regional labor market supply and demand data related to biotechnology and biomedical technology. This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with relevant occupations.

The following summarizes key findings from this data brief:

- The number of new jobs for occupations related to biotechnology and biomedical technology is projected to decrease by 3% through 2023. However, approximately 4,755 job openings will be available annually due to replacement need (e.g. retirements).
- Over the past 12 months, there have been 7,839 online job postings for middle-skill biotechnology and biomedical technology-related occupations in Los Angeles and Orange Counties.
- No other related program recommendation requests were received in 2018 from community colleges in the region.
- Eight community colleges in the region have biotechnology and biomedical technology programs.
- Between 2015 and 2018, community colleges in the region conferred an average of 62 awards annually (associate degrees and certificates) in related training programs.

**Occupational Demand**—In Los Angeles/Orange County, the number of jobs for occupations related to biotechnology and biomedical technology is projected to decrease by 3% through 2023. There will be approximately 4,755 job openings per year through 2023 due to replacement need (e.g. retirements).

**Exhibit 1: Occupational demand in Los Angeles and Orange Counties<sup>1</sup>**

Geography	2018 Jobs	2023 Jobs	2018-2023 Change	2018-2023 % Change	Annual Openings
Los Angeles	33,579	32,256	(1,323)	(4%)	3,305
Orange	13,795	13,700	(95)	(1%)	1,450
<b>Total</b>	<b>47,375</b>	<b>45,957</b>	<b>(1,418)</b>	<b>(3%)</b>	<b>4,755</b>

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<sup>1</sup> Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

**Wages**—Entry-level hourly wages for middle-skill occupations related to biotechnology and biomedical technology are between \$11.11 and \$18.69 per hour. Entry-level wages for engineering technicians are above the MIT Living hourly wage for one adult in Los Angeles County (\$14.36) and Orange County (\$15.85). Experienced workers earn between \$32.73 and \$49.54 per hour. Appendix B shows the wages by occupation and by region.

**Job Postings**—There have been 7,839 online job postings for middle-skill biotechnology and biomedical technology-related occupations listed in the last 12 months. The majority of job postings were for quality inspectors, production technicians, manufacturing technicians, and quality assurance inspectors/specialists. The top employers, by number of job postings, in the region are: Gilead Sciences, Shire, and Arconic.

**Educational Attainment**—The BLS lists a bachelor’s degree as the typical entry-level education for biological technicians; an associate degree for engineering technicians, chemical technicians, and all other technicians (life, physical, and social science); and a high school diploma or equivalent for inspectors, testers, sorters, samplers, and weighers. The national-level educational attainment data indicates between 30% and 55% of workers in the field have completed some college or an associate degree.

**Community College Supply**—Appendix A shows the annual and three-year average number of awards conferred by community colleges in Biotechnology and Biomedical Technology (0430.00). The colleges with the most completions in the region are: Pasadena and Citrus. In 2018, there were no other related program recommendation requests from community colleges in the region.

**Appendix A: Regional community college awards (certificates and degrees), 2015-18**

TOP Code	Program	College	2015-16 Awards	2016-17 Awards	2017-18 Awards	3-Year Award Average
0430.00	Biotechnology and Biomedical Technology	Citrus	10	18	16	15
		Fullerton	4	4	3	4
		Irvine Valley	1	8	13	7
		LA Mission	-	-	14	14
		LA Trade	3	3	5	4
		Pasadena	14	16	19	16
		Santa Ana	3	13	13	10
		Santiago Canyon	5	-	-	5
		<b>Total/Average</b>	<b>40</b>	<b>62</b>	<b>83</b>	<b>62</b>

**Appendix B: Occupational demand and wage data by county**

**Exhibit 3. Los Angeles County**

<b>Occupation (SOC)</b>	<b>2018 Jobs</b>	<b>2023 Jobs</b>	<b>5-Yr Change</b>	<b>5-Yr % Change</b>	<b>Annual Openings</b>	<b>Entry-Level Hourly Earnings</b>	<b>Median Hourly Earnings</b>	<b>Experienced Hourly Earnings</b>
Engineering Technicians, Except Drafters, All Other (17-3029)	1,904	1,858	(46)	(2%)	161	\$19.94	\$35.54	\$52.43
Biological Technicians (19-4021)	2,295	2,401	106	5%	242	\$15.39	\$24.53	\$38.31
Chemical Technicians (19-4031)	1,445	1,388	(57)	(4%)	131	\$12.81	\$19.64	\$33.42
Life, Physical, and Social Science Technicians, All Other (19-4099)	1,876	1,923	47	3%	228	\$11.77	\$22.09	\$34.58
Clinical Laboratory Technologists and Technicians (29-2018)	9,634	10,116	482	5%	699	\$13.73	\$23.49	\$47.72
Inspectors, Testers, Sorters, Samplers, and Weighers (51-9061)	16,426	14,570	(1,856)	(11%)	1,846	\$10.94	\$18.42	\$33.87
<b>Total</b>	<b>33,579</b>	<b>32,256</b>	<b>(1,323)</b>	<b>(4%)</b>	<b>3,305</b>			

**Exhibit 4. Orange County**

<b>Occupation (SOC)</b>	<b>2018 Jobs</b>	<b>2023 Jobs</b>	<b>5-Yr Change</b>	<b>5-Yr % Change</b>	<b>Annual Openings</b>	<b>Entry-Level Hourly Earnings</b>	<b>Median Hourly Earnings</b>	<b>Experienced Hourly Earnings</b>
Engineering Technicians, Except Drafters, All Other (17-3029)	958	980	22	2%	87	\$16.01	\$28.24	\$39.92
Biological Technicians (19-4021)	616	599	(17)	(3%)	57	\$15.06	\$19.57	\$33.78
Chemical Technicians (19-4031)	970	976	6	1%	91	\$14.23	\$19.40	\$35.26
Life, Physical, and Social Science Technicians, All Other (19-4099)	733	780	47	6%	96	\$12.83	\$23.32	\$34.83
Clinical Laboratory Technologists and Technicians (29-2018)	2,882	3,136	254	9%	234	\$15.81	\$27.21	\$47.52
Inspectors, Testers, Sorters, Samplers, and Weighers (51-9061)	7,636	7,230	(406)	(5%)	884	\$11.95	\$18.78	\$30.93
<b>Total</b>	<b>13,795</b>	<b>13,700</b>	<b>(95)</b>	<b>(1%)</b>	<b>1,450</b>			

**Exhibit 5. Los Angeles and Orange Counties**

<b>Occupation (SOC)</b>	<b>2018 Jobs</b>	<b>2023 Jobs</b>	<b>5-Yr Change</b>	<b>5-Yr % Change</b>	<b>Annual Openings</b>	<b>Entry-Level Hourly Earnings</b>	<b>Median Hourly Earnings</b>	<b>Experienced Hourly Earnings</b>
Engineering Technicians, Except Drafters, All Other (17-3029)	2,862	2,838	(24)	(1%)	247	\$18.69	\$32.66	\$49.54
Biological Technicians (19-4021)	2,911	3,000	89	3%	299	\$15.27	\$23.44	\$37.46
Chemical Technicians (19-4031)	2,415	2,364	(51)	(2%)	222	\$13.31	\$19.51	\$34.12
Life, Physical, and Social Science Technicians, All Other (19-4099)	2,609	2,702	93	4%	324	\$11.99	\$22.43	\$34.59
Clinical Laboratory Technologists and Technicians (29-2018)	12,516	13,251	735	6%	932	\$14.21	\$24.31	\$47.67
Inspectors, Testers, Sorters, Samplers, and Weighers (51-9061)	24,061	21,800	(2,261)	(9%)	2,730	\$11.11	\$18.51	\$32.73
<b>Total</b>	<b>47,375</b>	<b>45,957</b>	<b>(1,418)</b>	<b>(3%)</b>	<b>4,755</b>			

**Appendix C: Sources**

- O\*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (EMSI)
- Employment Development Department, Labor Market Information Division, OES
- Employment Development Department, Unemployment Insurance Dataset
- Living Insight Center for Community Economic Development
- California Community Colleges Chancellor's Office Management Information Systems
- MIT Living Wage

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