

BIOSCIENCE

WORKFORCE OF JEFFERSON COUNTY, COLORADO



Industry Description and Employment Trends

The bioscience cluster is diverse in both size and scope, including companies that research, develop, and distribute products and services ranging from cutting-edge pharmaceuticals and medical devices to veterinary supplies and chemical testing kits. The bioscience cluster is divided into two subclusters, each of which specializes in distinct aspects of the biosciences: (1) medical devices and instruments and (2) pharmaceuticals and biotechnology. The medical devices and instruments subcluster includes companies that engineer, research, design, and manufacture medical equipment. Pharmaceutical companies manufacture, research, and develop pharmaceutical drugs. Biotechnology companies utilize cellular and molecular biology and medicinal chemistry to develop and commercialize therapeutic medicines.

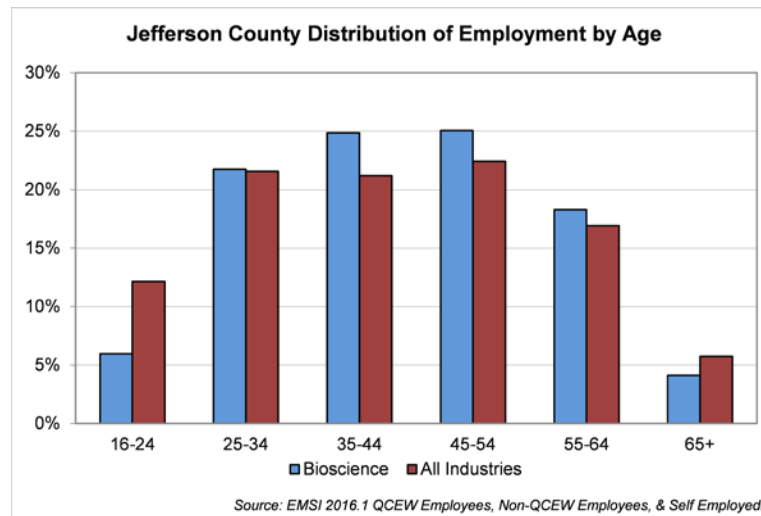
Employment in the nine-county Metro Denver and Northern Colorado region's¹ medical devices and instruments subcluster rose 2.8 percent in 2015 and rose 10 percent between 2010 and 2015. The region's pharmaceuticals and biotechnology subcluster employment declined 4.3 percent in 2015 as a result of a challenging regulatory environment and international demand pressures leading to reduced employment and closed locations across the region. Nearly 23 percent of the bioscience employment in the nine-county region is located in Jefferson County.

¹The nine-county region is comprised of two principal areas, Metro Denver and Northern Colorado. Metro Denver consists of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson counties. Northern Colorado consists of Larimer and Weld counties.

Workforce Profile

Jefferson County's labor force includes nearly 311,500 individuals, representing 19 percent of the total labor force in Metro Denver and 11 percent of the state's labor force. Jefferson County's labor force includes a large pool of talented, well-educated, and highly skilled workers. Of Jefferson County's adult population, 42 percent are college graduates and 94.1 percent have graduated from high school. Jefferson County's bioscience cluster has a larger share of employees that are between the ages of 35 and 64 years old (68.2 percent), compared with the age distribution across all industries (60.5 percent).

The bioscience industry offers opportunities for high school graduates and those willing to learn on-the-job. About 30 percent of bioscience-related occupations in Jefferson County require a bachelor's degree or higher, while 58.4 percent require a high school diploma or equivalent. Of the bioscience-related occupations, 64.1 percent require some sort of on-the-job training.



Wages 20 Largest Bioscience Occupations in Jefferson County	Median Salary	10th Percentile Salary	25th Percentile Salary	75th Percentile Salary	90th Percentile Salary
1. Dental Laboratory Technicians	\$36,699.61	\$23,214.13	\$25,447.83	\$44,194.70	\$52,129.57
2. Team Assemblers	\$29,312.34	\$19,570.38	\$23,206.35	\$36,489.64	\$46,225.61
3. Electromechanical Equipment Assemblers	\$36,944.45	\$32,888.76	\$34,440.12	\$39,470.95	\$40,977.98
4. Inspectors, Testers, Sorters, Samplers, & Weighers	\$41,208.43	\$21,730.73	\$31,038.62	\$55,506.20	\$69,411.47
5. First-Line Supervisors of Production & Operating Workers	\$58,864.36	\$35,595.07	\$45,977.27	\$73,818.33	\$93,265.87
6. Customer Service Representatives	\$30,368.38	\$21,244.55	\$25,141.79	\$37,995.85	\$46,163.63
7. General & Operations Managers	\$105,046.52	\$49,562.92	\$70,420.73	\$164,166.40	\$237,120.12
8. Industrial Engineers	\$91,786.10	\$57,678.55	\$73,669.62	\$110,697.46	\$130,015.54
9. Machinists	\$47,463.78	\$24,215.00	\$35,053.98	\$58,343.01	\$67,468.28
10. Biomedical Engineers	\$93,678.43	\$60,966.72	\$79,496.04	\$112,119.93	\$126,763.37
11. Business Operations Specialists, All Other	\$70,617.29	\$37,877.89	\$50,885.98	\$92,639.01	\$119,831.24
12. Sales Representatives, Wholesale & Manufacturing, Technical & Scientific Products	\$85,386.16	\$37,480.16	\$54,792.31	\$113,569.57	\$171,079.76
13. Mechanical Engineers	\$82,181.13	\$52,182.26	\$65,940.91	\$109,206.91	\$136,370.57
14. Shipping, Receiving, & Traffic Clerks	\$30,303.50	\$21,072.43	\$25,503.34	\$38,919.43	\$48,888.99
15. Ophthalmic Laboratory Technicians	\$31,611.84	\$22,266.83	\$27,273.92	\$37,405.92	\$41,631.80
16. Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	\$34,448.38	\$22,174.16	\$27,436.25	\$42,774.67	\$50,947.02
17. Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	\$58,939.21	\$29,528.07	\$40,811.78	\$90,950.38	\$130,628.04
18. Accountants & Auditors	\$62,096.38	\$38,095.90	\$47,330.20	\$80,882.66	\$102,306.55
19. Medical Appliance Technicians	\$43,299.64	\$28,340.56	\$34,523.69	\$51,834.95	\$59,515.66
20. Assemblers & Fabricators, All Other	\$28,934.63	\$21,230.70	\$24,907.29	\$34,616.84	\$40,255.29

Wages & Occupations

The 2015 average annual salary of bioscience workers in Jefferson County was \$100,800, compared with the average of \$51,300 for all workers in Jefferson County. However, the starting salaries for entry-level positions are significantly lower. The table below includes data for the 20 largest bioscience occupations in the county. It portrays the industry workforce supply as consisting of three main components: those currently working in that occupation either in the industry or in a similar job in some other industry (total working across all industries); the number of available applicants that would like to be working in that occupation; and the number of recent graduates that are qualified for that occupation.



Occupation Data 20 Largest Bioscience Occupations in Jefferson County	Total Working Across All Industries (2015)	Number of Available Applicants (2016)¹	Number of Graduates (2014)²	2015-2020 Projected Occupation Growth Rate
1. Dental Laboratory Technicians	281	1	0	12.8%
2. Team Assemblers	710	13	0	9.3%
3. Electromechanical Equipment Assemblers	303	3	2	5.6%
4. Inspectors, Testers, Sorters, Samplers, & Weighers	608	17	0	6.4%
5. First-Line Supervisors of Production & Operating Workers	660	39	0	3.9%
6. Customer Service Representatives	3,255	449	0	5.0%
7. General & Operations Managers	3,774	206	9,551	7.4%
8. Industrial Engineers	457	21	6	5.7%
9. Machinists	585	31	92	8.0%
10. Biomedical Engineers	97	1	61	23.7%
11. Business Operations Specialists, All Other	4,609	107	49	3.5%
12. Sales Representatives, Wholesale & Manufacturing, Technical & Scientific Products	698	52	49	14.0%
13. Mechanical Engineers	1,137	65	650	5.7%
14. Shipping, Receiving, & Traffic Clerks	926	32	0	3.8%
15. Ophthalmic Laboratory Technicians	83	0	0	15.7%
16. Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	5,526	83	70	8.4%
17. Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	2,537	58	77	9.1%
18. Accountants & Auditors	3,531	27	1,124	6.3%
19. Medical Appliance Technicians	55	2	0	18.2%
20. Assemblers & Fabricators, All Other	293	66	0	6.8%

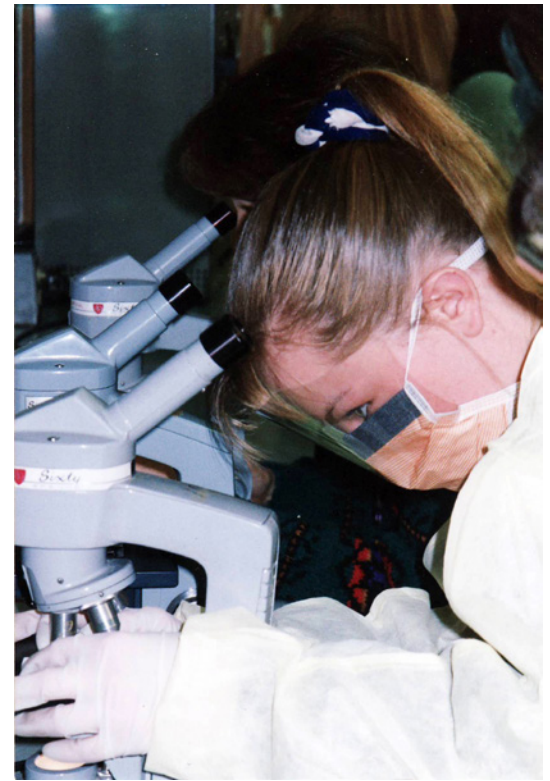
¹The number of available applicants is a point-in-time measurement of the number of people who have registered in Colorado's workforce development system's statewide database, Connecting Colorado, as being able and available to work in a particular occupation. Results should be interpreted with caution since registration in Connecting Colorado is self-reported. In addition, the skills rubric may assign up to four occupation codes for each registrant. Therefore, the number of available applicants could be inflated.

²The number of graduates represents a 10-county region consisting of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, El Paso, Jefferson, Larimer, and Weld Counties. Sources: EMSI 2016.1 QCEW Employees, Non-QCEW Employees, & Self-Employed; Connecting Colorado, 2016.

Educational Institutions

The 10-county region's² educational institutions provide an excellent support system for area businesses. There are 28 public higher education institutions in Colorado, of which eight four-year and seven two-year public institutions offering comprehensive curricula are located in the 10-county region. In addition, there are more than 100 private and religious accredited institutions and nearly 380 private occupational and technical schools offering courses in dozens of program areas throughout the state. Although not exhaustive, a list of the major, accredited educational institutions with the greatest number of graduates for the largest bioscience occupations in Jefferson County are included below. A directory of all higher education institutions with corresponding websites may be accessed via highered.colorado.gov.

- **Colorado State University**
www.colostate.edu
- **Colorado Technical University Online**
www.coloradotech.edu
- **University of Colorado: Boulder, Colorado Springs, Denver**
www.cu.edu
- **Colorado State University Global Campus**
www.colostate.edu
- **Metropolitan State University of Denver**
www.msudenver.edu
- **University of Denver**
www.du.edu
- **Colorado Technical University Colorado Springs**
www.coloradotech.edu/colorado-springs



- **Regis University**
www.regis.edu
- **Red Rocks Community College**
www.rrcc.edu
- **Arapahoe Community College**
www.arapahoe.edu
- **Front Range Community College**
www.frontrange.edu

²The 10-county region consists of the Metro Denver and Northern Colorado region and El Paso County.

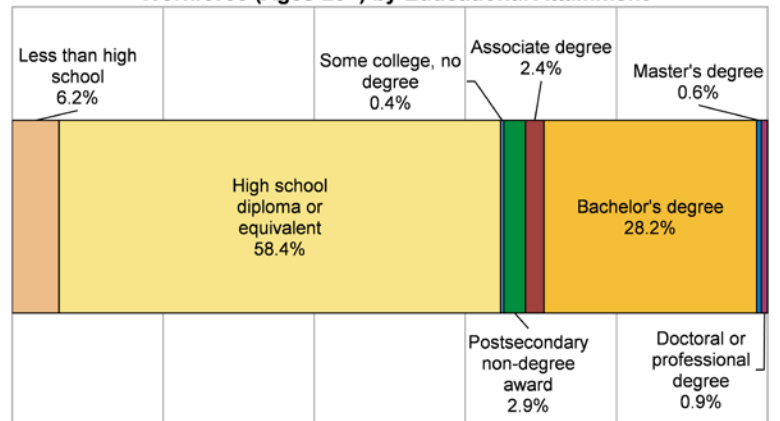


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Distribution of Jefferson County's Bioscience-Related Workforce (Ages 25+) by Educational Attainment



Note: These values are based on the individuals in each bioscience-related occupation.
Source: EMSI 2016.1 QCEW Employees, Non-QCEW Employees, & Self Employed.