



# BIOSCIENCE

*Our thriving Bioscience cluster combines collaboration and entrepreneurial spirit to foster innovation.*



- full report -

2020



## Metro Denver EDC

Often called a “center of influence,” the Metro Denver EDC was the nation’s first regional economic development organization. From Castle Rock to Fort Collins and Golden to Greeley, we represent the nine counties and 66 communities that contribute to our resilient economy and incredible culture. All told, the EDC’s service territory makes up two-thirds of the Colorado GDP and approximately three-quarters of the state’s population.

Thanks to the leadership and generosity of 250 of Colorado’s most influential companies, the EDC works to monitor and advance the Metro Denver economy through corporate attraction and retention; workforce development; domestic and global marketing; investments in infrastructure; and public policy that fosters a pro-business climate.

The data we produce is foundational to the work we do. Publications like our annual Industry Cluster Studies offer the companies we court (as well as the regional partners we support) a deeper understanding of what’s happening across Metro Denver, and for certain industries, the state more broadly. We track this data closely – leveraging the intel and insights to not only drive corporate recruitment and investment, but foster competition, build a culture of impact and innovation, strengthen the business community and work to ensure that life and work in Metro Denver are thriving.

*- Bioscience Report -*

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# BIOSCIENCE

**INDUSTRY**  
*snapshot*  
(U.S. DATA IN PARENTHESES)

<b>Companies</b>	<b>Average Wage</b>	<b>*Emp. Ranking</b>
880	\$145,670	20

\*Employment Concentration Ranking

**Direct Employment:**  
17,630

**Direct Employment Concentration (2020):**  
0.8% (0.6%)

**5-Year Employment Growth (2015-2020):**  
12.4% (12.1%)

**1-Year Employment Growth (2020):**  
0.7% (2.2%)

# Industry Overview

The nine-county Metro Denver and Northern Colorado region is a global epicenter for bioscience research and an exceptional place to start, grow, commercialize, or relocate a bioscience business. Several factors contribute to the region's thriving industry, including a collaborative business culture, world-class academic and research institutions, a favorable tax climate and a highly educated workforce. As a bioscience hub, the region includes research institutions, life science expertise and nearly 880 bioscience companies developing breakthroughs in life-saving treatments.

Metro Denver's life sciences market is one of the fastest growing in the nation. According to CBRE's "2020: Leading Life Science Clusters" report, Metro Denver ranked among the 13 largest U.S. life science markets for the first time. The report cited the region's ongoing expansion of the industry's labor force, record venture-capital investments, a top-20 destination for National Institutes of Health funding and strong demand for lab space. Jones Lang LaSalle's "2020 Life Sciences Real Estate Outlook" named Metro Denver among the top 12 leading life sciences markets among major metro areas. Significant milestones reached in 2020 amid the pandemic included receiving major regulatory approvals, securing state and federal grants, closing funding rounds and launching new products.

## Cluster Definition

The Metro Denver and Northern Colorado region is comprised of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer and Weld counties. In this report, the Bioscience Cluster consists of 12, six-digit North American Industry Classification System (NAICS) codes in two subclusters, medical equipment and pharmaceuticals, each of which specializes in distinct aspects of the biosciences. The Medical Devices & Diagnostics Subcluster includes companies that engineer, research, design and manufacture medical equipment; the Pharmaceuticals & Biotechnology Subcluster includes companies that manufacture, research and develop pharmaceutical drugs. Biotechnology companies utilize cellular and molecular biology and medicinal chemistry to develop and commercialize therapeutic medicines.

These definitions allow for a comparative analysis of the Metro Denver and Northern Colorado region's Bioscience Cluster relative to other metropolitan regions across the nation. This definition also avoids double-counting workers in other adjacent technology clusters such as Information Technology.

## Cluster Job Growth

- Nearly 880 companies employ over 17,630 bioscience workers in the region.
- Employment grew by 0.7% between 2019 and 2020, which is the ninth-consecutive year of growth.
- Over the past five years, employment increased 12.4%, adding 1,940 employees.
- The industry reached its highest employment base in 2020, employing 0.8% of the region's total employment base.
- The number of bioscience companies increased 25.2% over the past five years.
- More than 80% of the state's total employment in the Bioscience Cluster is located in the Metro Denver region.

## Notable Subcluster Trends

- The Medical Devices & Diagnostics Subcluster represents 64% of the total bioscience employment base in the region, while pharmaceuticals and biotechnology represents 36%.
- Strong growth in the Pharmaceuticals & Biotechnology Subcluster contributed to overall growth in the cluster, rising 4.6% over the year. However, the Medical Devices & Diagnostics Subcluster posted a decline of 1.3%.
- Between 2015 and 2020, the Pharmaceuticals & Biotechnology Subcluster grew 37.9% and the Medical Devices & Diagnostics Subcluster rose 1.9%.
- The Pharmaceuticals & Biotechnology Subcluster had the highest average wage among any of the region's clusters or subclusters, reaching \$246,560 in 2020.

## Major Industry Investments, Expansions & Milestones

- **AGC Biologics**, a global contract development and manufacturing organization, acquired the former AstraZeneca facility with plans to hire 280 employees in Boulder and invest \$100 million in advanced manufacturing equipment.
- **Agilent Technologies** will invest \$150 million to expand its Frederick production facility for nucleic acid-based therapeutics. The expansion will add 25,000 square feet of manufacturing capacity by the end of 2022.
- **Medtronic Inc.** will occupy a 42-acre parcel for a new corporate campus in Lafayette. Medtronic plans to construct a 600,000-square-foot complex built in two phases and could create 500 to 1,000 new jobs.
- **ChromaDex Corp.**, a global nutraceutical company, received accreditation for its quality assurance laboratory in Longmont. The facility has about 40 employees and expects to add more workers in Longmont.
- Biosecurity company **GeneThera Inc.** purchased a 16,000-square-foot building in Broomfield's Northwest 36 business park development. It will be the first to locate in the new business park.
- Boulder-based **Front Range Biosciences Inc.** will partner with **Shimadzu Scientific Instruments** to build a Hemp Science Center of Excellence at the Front Range Biosciences headquarters in Boulder. Research will focus on testing new plant varieties with different environments and breeding, with Shimadzu providing technology for potency testing, terpene profiling and contaminant testing.
- Medical device company **Zynex Medical Inc.** signed a lease for 50,490 square feet in Englewood, completing one of the largest Southeast-Metro-Denver-region industrial transactions in 2020.

## Bioscience Facilities & Lab Market Trends

The inventory of commercial lab space is rapidly growing in the Denver-Boulder area to meet increased demand. According to CBRE, the region had the highest levels of new lab construction as a share of existing inventory among major markets in 2020, reflecting significant demand. The region is home to a total of 2.1 million square feet of lab space with an average rent of \$23.93 per square foot.

- **Colorado State University (CSU)** and **Zoetis** partnered to open the new 3,000-square-foot Zoetis Incubator Research Lab at the CSU Research Innovation Center. The lab will target new immunotherapies, paving the way for new alternatives to antibiotics for treating illnesses in food-producing animals.
- The Boulder and Northwest submarket comprises 67% of Metro Denver's inventory for lab space.
- The **Fitzsimmons Innovation Community (FIC)** and the adjacent \$5.8 billion **Anschutz Medical Campus** is one of the largest bioscience developments in the nation, representing the second-largest economic engine in Colorado behind Denver International Airport.
  - The Campus encompasses more than six million square feet of corporate and bioresearch space – from incubator and accelerator space, to pre-built laboratories and furnished offices, to build-to-suit-space – and is home to nearly 100 innovative startups and established life sciences companies.
  - Plans are underway for construction of a manufacturing space in Bioscience 5 that will break ground in 2021. Additional buildings are proposed with up to 70 acres available for life sciences development.



## Venture Capital & Funding Awards

Metro Denver has attracted significantly more bioscience venture capital in recent years, culminating in a new record of \$310 million in 2020. The Denver-Boulder area had the 10th-highest life sciences venture capital investments in 2020, according to CBRE. Since 2017, Colorado bioscience companies raised more than \$4.2 billion in venture capital, debt refinancing, mergers and acquisitions, public offerings and grants.

- **Rockies Venture Club, Colorado Bioscience Association** and the **Office of Economic Development and International Trade (OEDIT)** partnered to attract angel investors and fund early-stage bioscience companies in the state. The effort will include a grant backed by OEDIT and a concentrated effort to increase investing in life sciences companies.
- Boulder-based **SomaLogic** added \$81 million to its current funding round, bringing its Series A funding total to \$214 million. The funds will facilitate improving, expanding and commercializing its world-leading proteomic products.
- Boulder-based **ArcherDX Inc.** filed an IPO with plans to raise up to \$100 million.
- Boulder-based **Edgewise Therapeutics** closed a \$95 million Series C financing round to fund ongoing clinical development of its muscular dystrophy treatments and support potential future in-licensing opportunities and clinical collaborations in rare diseases.
- **Biodesix**, which provides diagnostic tests and services for lung disease and other unmet needs, filed with the SEC to raise up to \$79 million in an IPO.





- Broomfield-based **Aktivax Inc.** was awarded over \$40 million from the U.S. government to develop an autoinjector treatment for exposure to nerve agents.
- Aurora-based **Cerebral Therapeutics**, a clinical-stage pharmaceutical company developing innovative treatments for uncontrolled neurological diseases, raised \$35 million in Series B financing to be used for conducting clinical trials for its proprietary treatment for seizures.
- Englewood-based **Viveve Medical** raised \$10 million in equity, which will be used to advance medical technology products focused on women's intimate health.
- Denver-based **DispatchHealth** and Englewood-based **Zynex Medical Inc.** were named among the fastest growing technology and life sciences companies in North America in 2020.
- NIH funding is a major driver behind the surge in life sciences demand for new innovations. Colorado received a record \$427.2 million in NIH funding in Fiscal Year 2019, supporting nearly \$1.3 billion in annual economic activity.
  - NIH funding grew 29% between 2015 and 2019, with an additional 217 grants totaling \$98.4 million over the period.
  - Top NIH-funded research institutions included the **University of Colorado Denver**, the **University of Colorado Boulder** and **National Jewish Health**.



## Mergers & Acquisitions

- Genetics tester **Invitae Corp.** closed on its \$1.4 billion acquisition of ArcherDX, Inc. The new company will provide tumor profiling and liquid biopsy within a single platform, expanding access to patients needing precision diagnostics.
- **mBio Diagnostics Inc.** and **Brava Diagnostics Inc.** merged amid rapid employment growth for both companies. The combined company, **LightDeck Diagnostics**, plans to lease an additional 10,000 square feet in Boulder and expanded its workforce to about 60 in 2020.

## Innovative Technologies & Regulatory Approvals

The region's bioscience companies are developing clinical assets to save and change lives around the world.

- In 2020, 256 medical devices and diagnostics companies in Colorado have received 510(K) approval from the FDA and five achieved a Premarket Approval designation.
- Since 2016, Colorado inventors issued 3,310 life sciences patents.
- **SomaLogic** entered a five-year partnership with the FDA to find more generic versions of biologics.
- **ArcherDX Inc.** was granted Breakthrough Device Designation for its next-generation sequencing device under development to detect gene fusions that lead to the formation and growth of cancer.
- The **University of Colorado Anschutz Medical Campus** is obtaining new technology that will improve screening time for new drug therapies. Explorer G3 Workstation could be used to study COVID-19 and analyze specific protein targets in the COVID-19 genome.
- **Pfizer Boulder** received FDA approval for the use of its drug, BRAFTOVI® in combination with cetuximab for treatment of patients with a certain form of colon cancer.
- Fort Collins-based **Tolmar Pharmaceuticals Inc.** received FDA approval for FENSOLVI®, an injectable suspension for the treatment of pediatric patients two years of age and older with central precocious puberty.

## Innovation Support

The Colorado BioScience Association unites the life sciences ecosystem and builds a collaborative, pro-innovation environment for life-saving breakthroughs. The region's Bioscience Cluster is supported by numerous incubators, accelerators and collaborative organizations and facilities.

- **The Fitzsimons Innovation Community** combines shared resources, talent and expertise to support bioscience development and the delivery of life-saving products to patients. The community comprises 335,000 square feet of research development, lab and educational space adjacent to the Anschutz Medical Campus.

- **CSU's Research innovation Center (RIC)** serves as a vehicle to perform translational stage research with the life sciences community and includes a state-of-the-art, wet research laboratory capable of manufacturing clinical-grade vaccines or biologics.
- A partner to the RIC, high-tech incubator **Innosphere** supports entrepreneurs in health innovation, life sciences, software and hardware, energy and advanced materials.
- **Catalyst HTI** in Denver's River North neighborhood is an industry integrator - including some 50 life science startups, four incubators and accelerators, investors and various healthcare companies. This unites private enterprise (startups to Fortune 100), government, academic and non-profit organizations with healthcare providers and payers to accelerate innovation.
- **The Northern Colorado Bioscience Cluster** brings together the region's scientists, physicians, leading innovators and executive advisors who are working together inside world-class research and business incubator environments to maximize the impact on Northern Colorado resources.
- Boulder-based **Boomtown Accelerator** provides seed funding, business resources, company-building curriculum, mentorship and community to founders and their companies, including specialized programs in health tech.

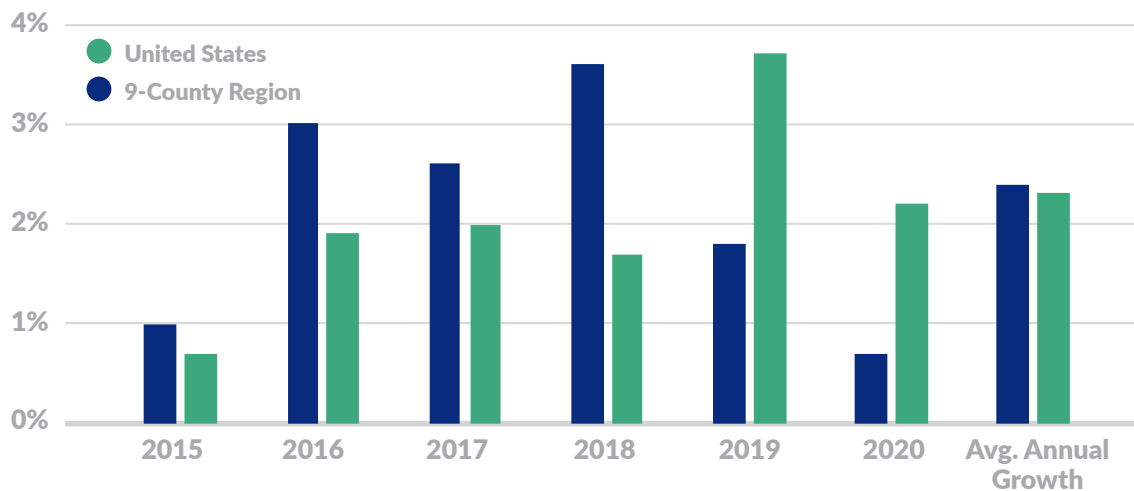


# Economic Profile

The Metro Denver and Northern Colorado region is comprised of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer and Weld counties. In this report, the Bioscience Cluster consists of 12, six-digit North American Industry Classification System (NAICS) codes in two subclusters, medical equipment and pharmaceuticals, each of which specializes in distinct aspects of the biosciences.

	9-County Region	U.S.A.
Direct employment, 2020	17,630	1,001,750
Number of direct companies, 2020	880	41,930
One-year direct employment growth, 2019-2020	0.7%	2.2%
Five-year direct employment growth, 2015-2020	12.4%	12.1%
Avg. annual direct employment growth, 2015-2020	2.4%	2.3%
Direct employment concentration	0.8%	0.6%
% of companies with <10 employees	75.8%	71.7%

## Bioscience Number of Employees Growth Rate<sup>2</sup>



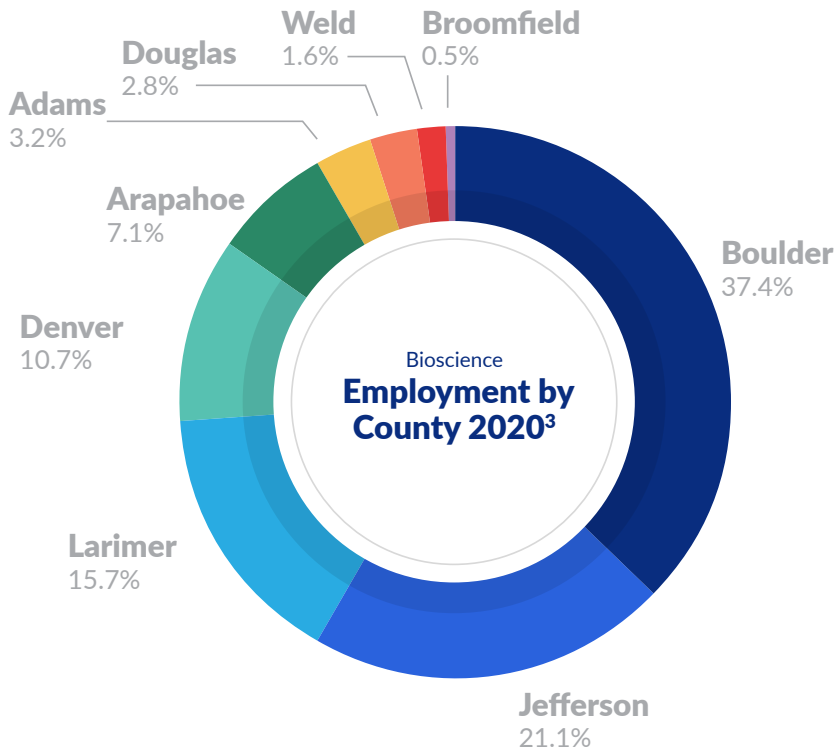
<sup>1</sup> Dun & Bradstreet, Inc., Hoover's Online Database; Market Analysis Profile, 2015-2020; Development Research Partners.

<sup>2</sup> Dun & Bradstreet, Inc., Hoover's Online Database; Market Analysis Profile, 2015-2020.

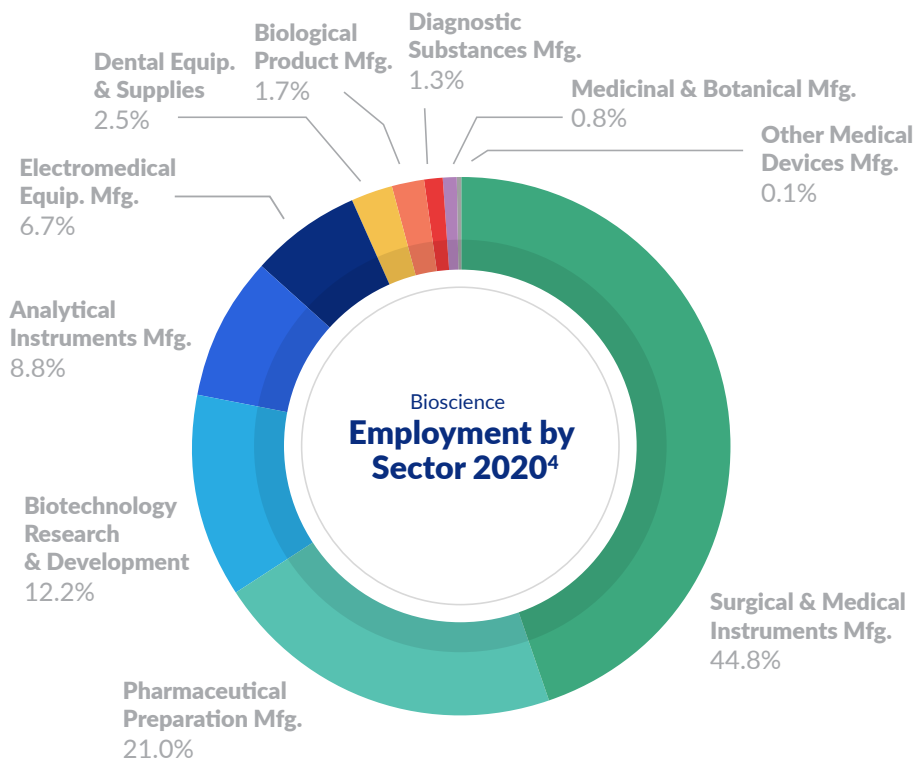
<sup>3</sup> Market Analysis Profile, 2020; Development Research Partners.



**9-County**  
**RANKINGS**<sup>5</sup>



**12th**  
**Bioscience direct employment**



**20th**  
**Bioscience direct employment concentration**

<sup>4</sup> Market Analysis Profile, 2020; Development Research Partners.

<sup>5</sup> Direct employment rank based on the number of employees in the industry cluster in a state. Employment concentration rank based on the direct cluster employment in a state expressed as a percent of total employment in all industries in the same state. Rankings are for the 50 states. No multiplier effects are included. 1st = highest for both rankings.

# 9-County RANKINGS<sup>6</sup>

## Medical Devices & Diagnostics

10th

direct  
employment  
rank

12th

direct  
employment  
concentration  
rank

## Pharmaceuticals & Biotechnology

15th

direct  
employment  
rank

22nd

direct  
employment  
concentration  
rank

## Industry Subclusters

The Bioscience Cluster is divided into two subclusters:

- (1) Medical Devices & Diagnostics; and
- (2) Pharmaceuticals & Biotechnology.

- **Medical Devices & Diagnostics** includes companies that engineer, research, design and manufacture medical equipment. The Medical Devices & Diagnostics Subcluster consists of eight, six-digit North American Industry Classification System (NAICS) codes.

- **Pharmaceuticals & Biotechnology** companies manufacture, research and develop pharmaceutical drugs. Companies in this subcluster utilize cellular and molecular biology and medicinal chemistry to develop and commercialize therapeutic medicines. The Pharmaceuticals & Biotechnology Subcluster consists of four NAICS codes.



<sup>6</sup> Direct employment rank based on the number of employees in the industry cluster in a state. Employment concentration rank based on the direct cluster employment in a state expressed as a percent of total employment in all industries in the same state. Rankings are for the 50 states. No multiplier effects are included. 1st = highest for both rankings.

<sup>7</sup> Dun & Bradstreet, Inc., Hoover's Online Database; Market Analysis Profile, 2015-2020; Development Research Partners.



## Bioscience Subcluster Employment & Company Profile, 2020<sup>7</sup>

	Medical Devices & Diagnostics		Pharmaceuticals & Biotechnology	
	9-County Region	U.S.A.	9-County Region	U.S.A.
Direct employment, 2020	11,330	508,540	6,310	493,210
Number of direct companies, 2020	360	17,680	510	24,240
One-year direct employment growth, 2019-2020	-1.3%	3.3%	4.6%	1.2%
Five-year direct employment growth, 2015-2020	1.9%	13.8%	37.9%	10.5%
Avg. annual direct employment growth, 2015-2020	0.4%	2.6%	6.6%	2.0%
Direct employment concentration	0.5%	0.3%	0.3%	0.3%
% of companies with <10 employees	70.9%	69.2%	79.3%	73.5%

# Industry Infrastructure Support







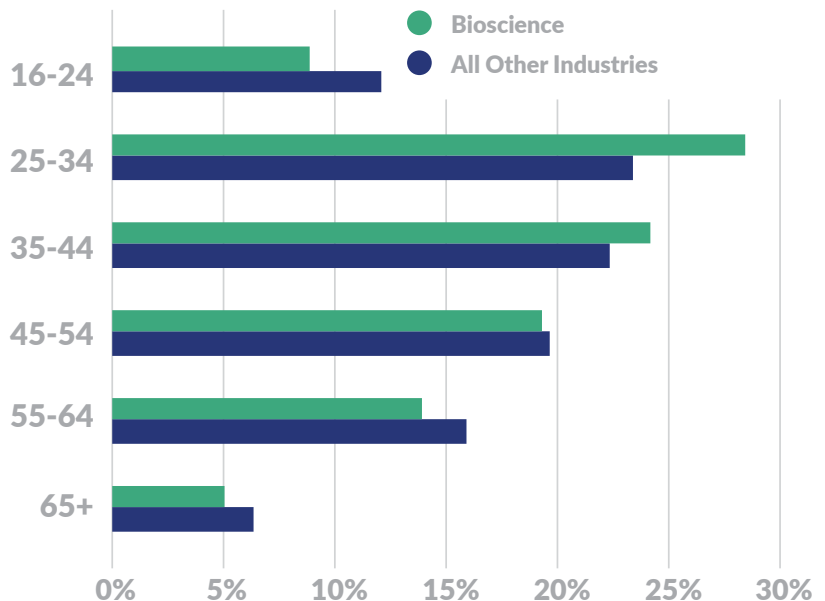
# Workforce Profile

- CBRE ranked the Denver-Boulder region among the top 15 largest U.S. Life Sciences Clusters by employment in 2020.
- Employment in the Pharmaceuticals & Biotechnology Subcluster rose for the fifth-consecutive year in 2020, adding more than 1,730 workers since 2015.
- The University of Colorado Boulder, Colorado State University and the University of Colorado Denver ranked among the nation’s top 100 graduate bioscience programs, according to *U.S. News & World Report*.
- The Colorado Bioscience Institute, Aims Community College, St. Vrain School District and various Colorado bioscience companies partnered to form a P-Tech program for bioscience and biotech manufacturing. Pathways in Technology Early College High School will help fill talent gaps in the workforce supply pipeline.

## Age Distribution

- The age distribution of workers in the region’s Bioscience Cluster is concentrated between the ages of 25 and 44 years old (52.7%), compared with the age distribution of all industries across the nine-county region (45.9%).
- The largest share of workers in the Bioscience Cluster were between the ages of 25 and 34 years old.

## Metro Denver & Northern Colorado Distribution of Employment by Age<sup>8</sup>



<sup>8</sup> Provided by Arapahoe/Douglas Works!; QCEW Employees, Non-QCEW Employees, & Self Employed - EMSI 2020.3 Class of Worker.

<sup>9</sup> Provided by Arapahoe/Douglas Works!; QCEW Employees, Non-QCEW Employees, & Self Employed - EMSI 2020.3 Class of Worker.

## Wages

- The 2019 average annual salary for workers in the Bioscience Cluster was \$145,670 in the nine-county region, compared with the national average of \$118,800.
- The average starting salary for workers in the Bioscience Cluster was \$43,270 in the region, compared with \$39,070 across all industries.
- Total payroll reached nearly \$2.6 billion in 2019.

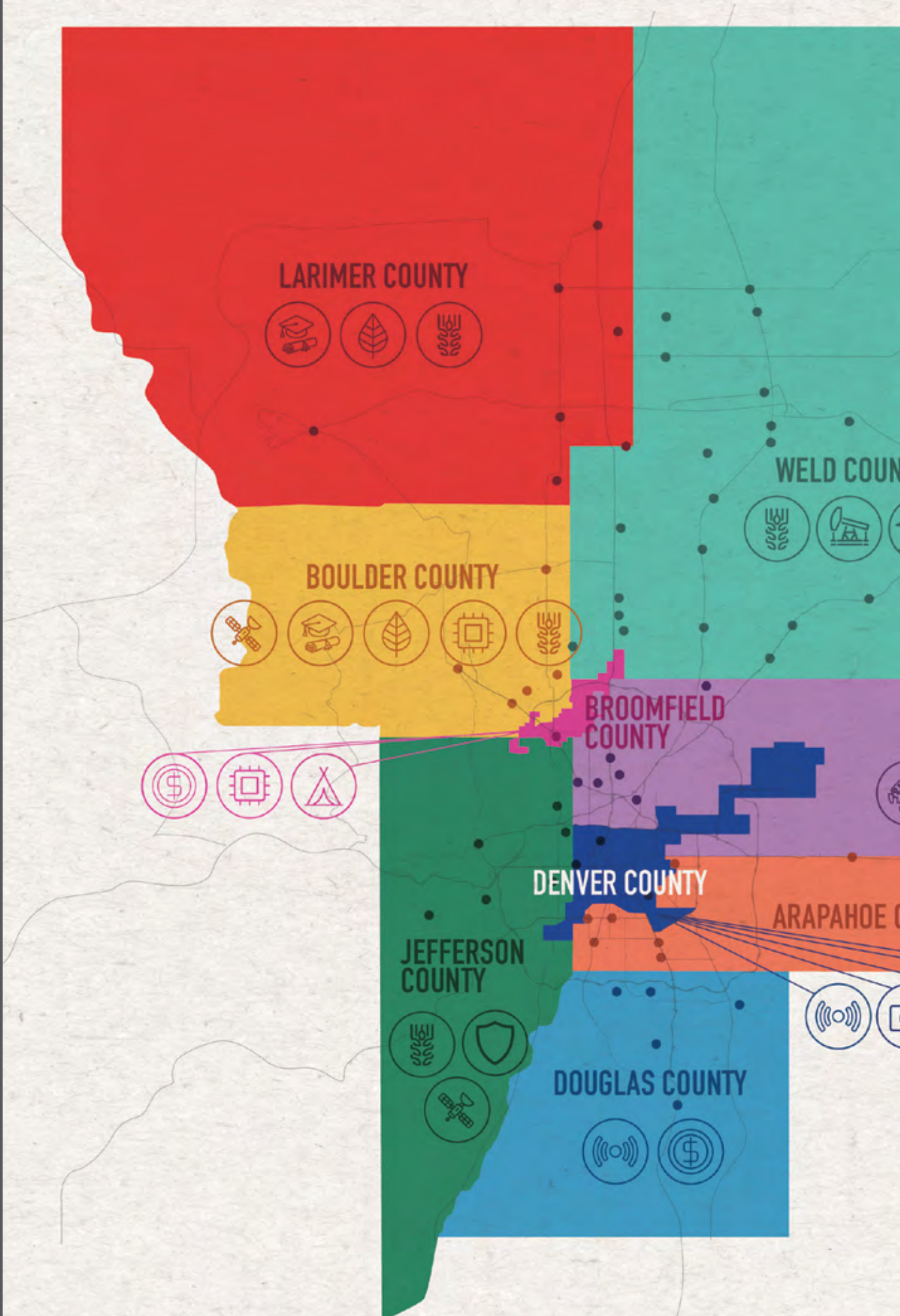


### Metro Denver & Northern Colorado Bioscience Occupation & Salary Profile, 2020<sup>9</sup>

10 Largest Bioscience Occupations in Metro Denver & Northern Colorado	Total Working Across All Industries (2020)	Number of Available Applicants (2020)	Number of Graduates (2019)	Median Salary	10th Percentile Salary	25th Percentile Salary	75th Percentile Salary	90th Percentile Salary
1. Receptionists & information clerks	14,210	1,029	0	\$33,040	\$23,486	\$26,955	\$39,620	\$47,120
2. Chemists	1,571	114	273	\$75,989	\$40,807	\$54,993	\$101,472	\$129,273
3. Project management specialists & business operations specialists, all other	42,873	3,103	50	\$80,642	\$45,847	\$58,960	\$108,751	\$142,539
4. Inspectors, testers, sorters, samplers, & weighers	4,803	348	0	\$45,087	\$28,481	\$34,984	\$62,571	\$80,581
5. Biological technicians	2,826	205	0	\$42,134	\$24,679	\$34,187	\$55,256	\$68,493
6. Packaging & filling machine operators & tenders	3,801	275	0	\$33,613	\$23,817	\$27,611	\$40,272	\$50,132
7. Chemical technicians	866	63	0	\$51,264	\$35,668	\$41,318	\$62,843	\$77,044
8. Sales representatives, wholesale & manufacturing, technical & scientific products	5,795	419	2	\$98,352	\$46,162	\$64,129	\$136,363	\$183,154
9. Chemical equipment operators & tenders	669	48	0	\$42,214	\$31,773	\$35,624	\$53,441	\$64,978
10. Office clerks, general	35,443	2,565	0	\$40,773	\$24,975	\$31,292	\$52,441	\$64,697

**Notes:** The 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.

# Metro Denver Industry Map



# Notable Rankings

## #1

Colorado made an impressive showing in the 2020 U.S. News & World Report's "Best Places to Live" list with Front Range cities ranking #1, #2, #4 and #5.

## #1

Colorado was recently named the top state for Women-Led Startups by small business reviewer, Merchant Maverick.

## #1

USA Today recently named DEN the Best Large Airport in the U.S.

## #2

U.S. News & World Report ranked Colorado as the second-best state economy in the country, after four years maintaining the top spot.

## #2

Colorado is the second-best state in the U.S. to retire in, according to a study by WalletHub.

## #2

Milken Institute named Colorado #2 for "Best State for Technology and Science," with a strong entrepreneurial infrastructure and STEM workforce.

## #3

Colorado saw the third largest increase of millennials in the past five years, according to Haven Life.

## #3

Denver ranked third for STEM job growth, according to the 2020 STEMdex.

## #4

A new study by Spanning says Colorado has the fourth-most tech jobs per capita - citing 123,040 tech workers at a median annual wage of \$94,880.

## #4

Denver took in the #4 spot for U.S. cities that people moved to in 2020, according to Updater.com.

## #6

LinkedIn gave Denver the 6th place ranking for cities with the most opportunity for job seekers.

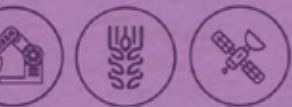
## #6

Denver ranked sixth among the "Best U.S. Cities for Remote Workers" in 2020, according to BusinessInsider.com.

ITY



ADAMS COUNTY



COUNTY



Data research provided by Development Research Partners, Inc.  
Founded in 1994, DRP specializes in economic research for local and state government and private sector businesses, including industry cluster research, industry trends analysis and strategic competitive analysis.  
[www.developmentresearch.net](http://www.developmentresearch.net)



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