



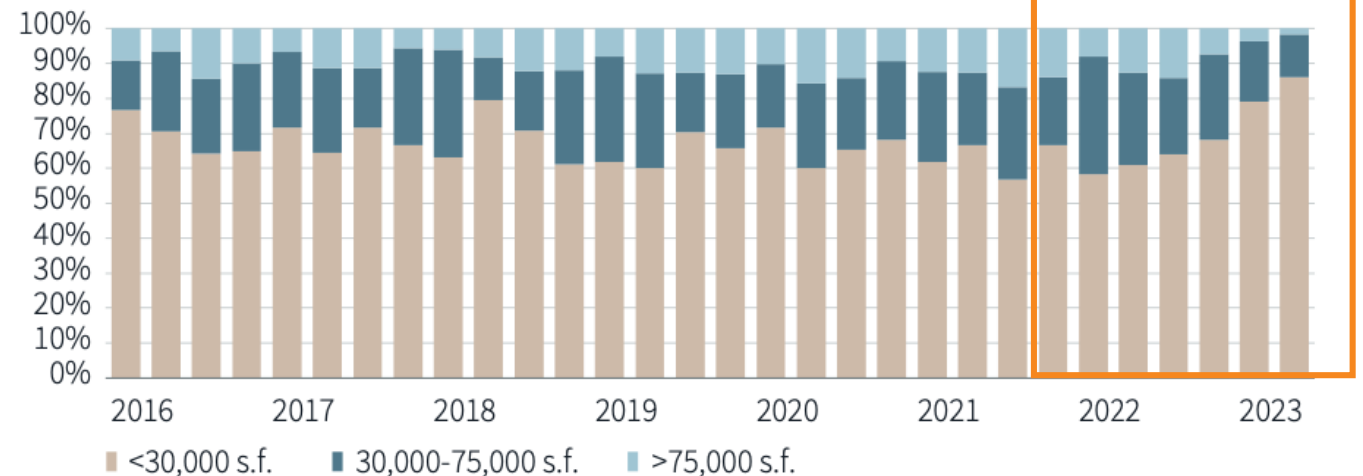
Bioscience lab economics

- Types of laboratories:
 - Wet lab (for biological matter research and development)
 - Dry lab (for engineering, computational, -physics)
- On average 70% of lab space tenar deals in the U.S. are for less than 30,000 square feet.
- Lease terms on average are around 5 years.

Source: JLL Research, 2024

Smaller deals are increasingly driving leasing activity

Share of leasing deal count



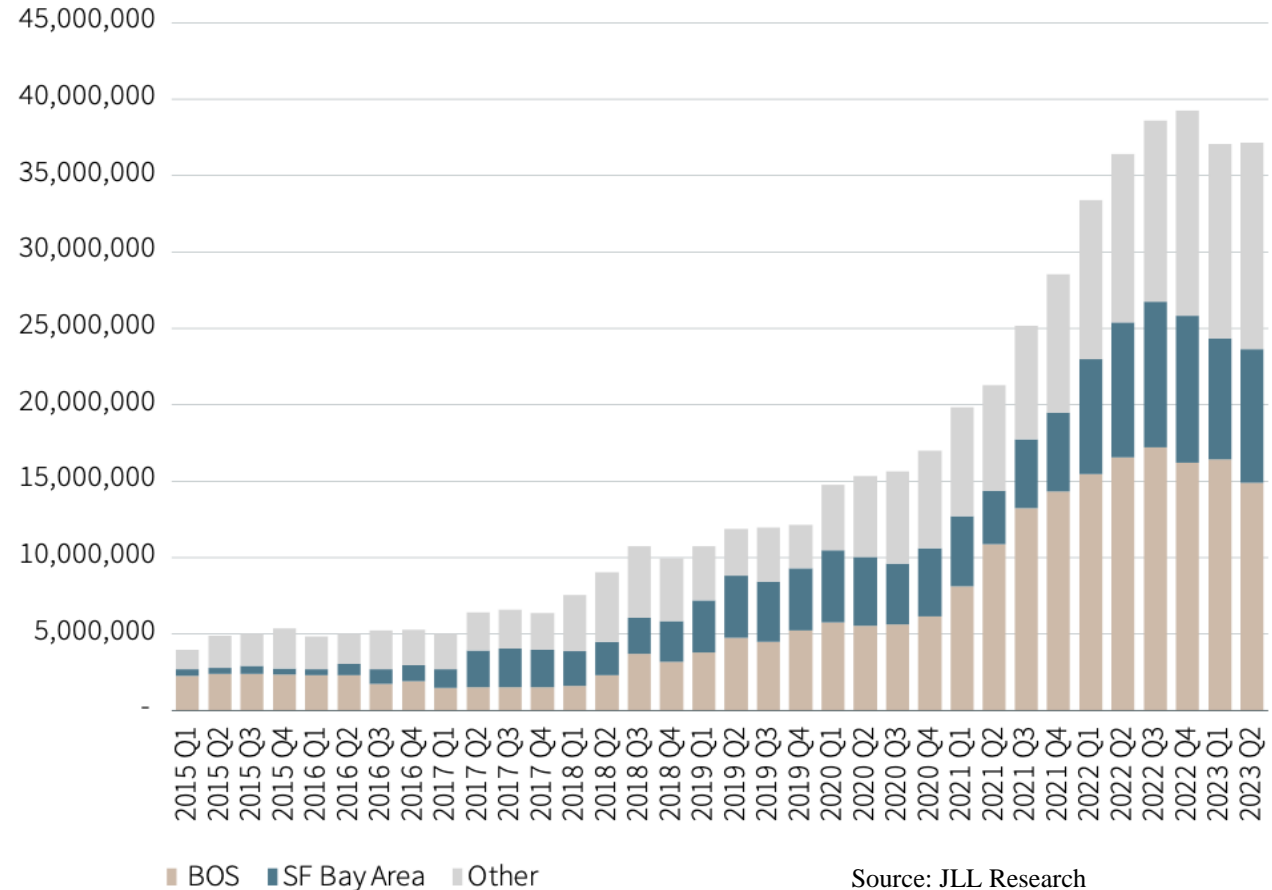
Graph Source: JLL Research, 2024

Bio and life science laboratory development concentrated in Boston and the Bay Area, but increasingly that is less so

- ...Increasing supply for laboratory space outside of Boston and the Bay Area such as San Diego, Phoenix, Denver, Raleigh.
- Driven by VC funding for more late stage companies that are located outside of expensive metros.
- Following the talent post pandemic which is more mobile.
- Higher borrow costs causing some pullback in large markets.

Lab pipeline in U.S. is concentrated in Metro Boston and SF Bay Area

Lab s.f. under development

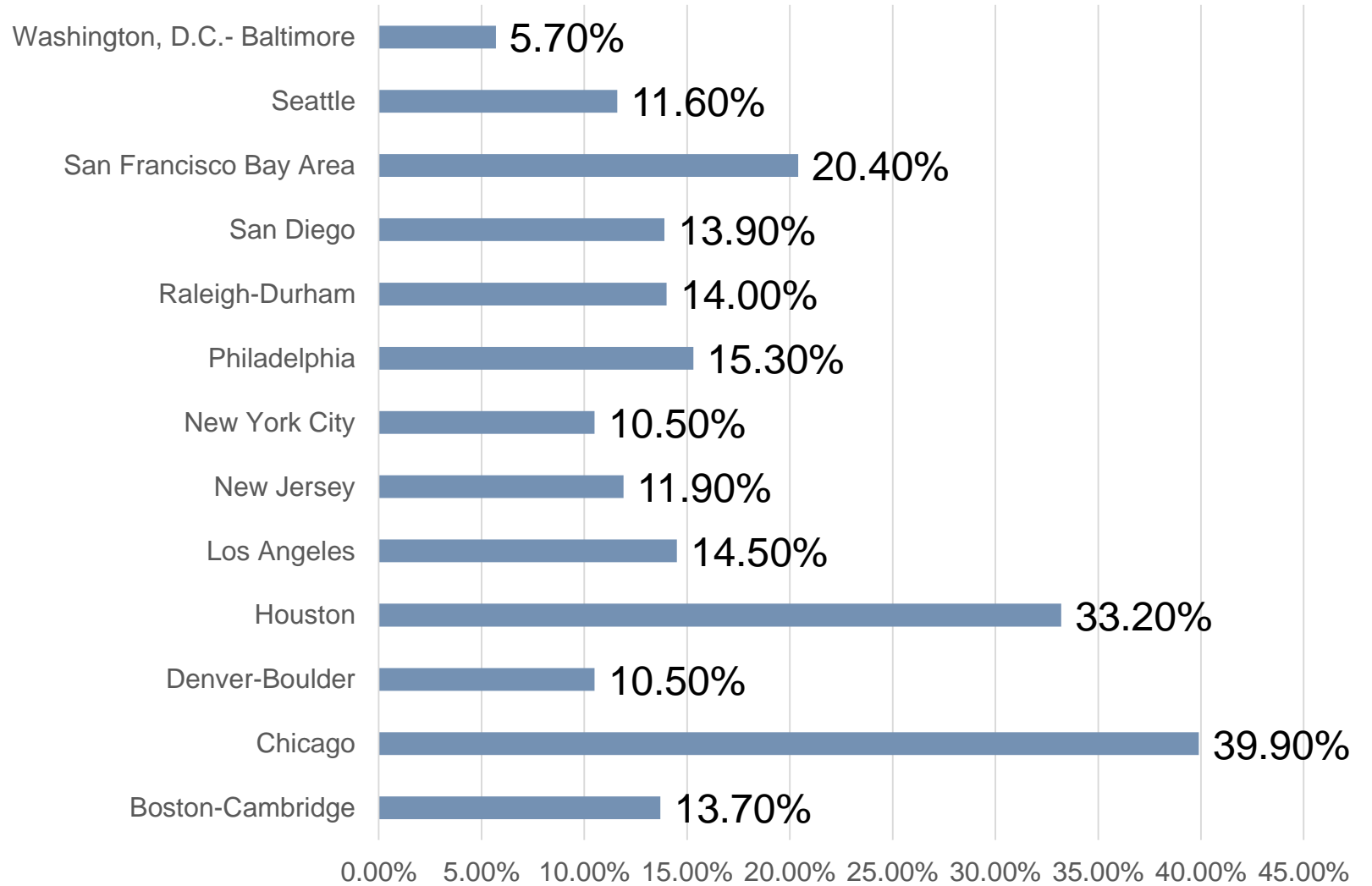


Source: JLL Research

Vacancy Rates for the 13 biggest markets

2024Q1- Source: CBRE
Average Vacancy Rate - 14.85%

Vacancy Rates For Life And Bio Science



Average Asking Rent

Average rent by square foot for 13 largest markets is: **\$69.64 a square foot (2024Q1)**

Increased 4.1% in the 4th quarter of last year, a record high.

13.1% vacancy rate (2023Q4), mainly due to new supply.

Most of the top 13 markets reported positive net absorption.

6.3 percent

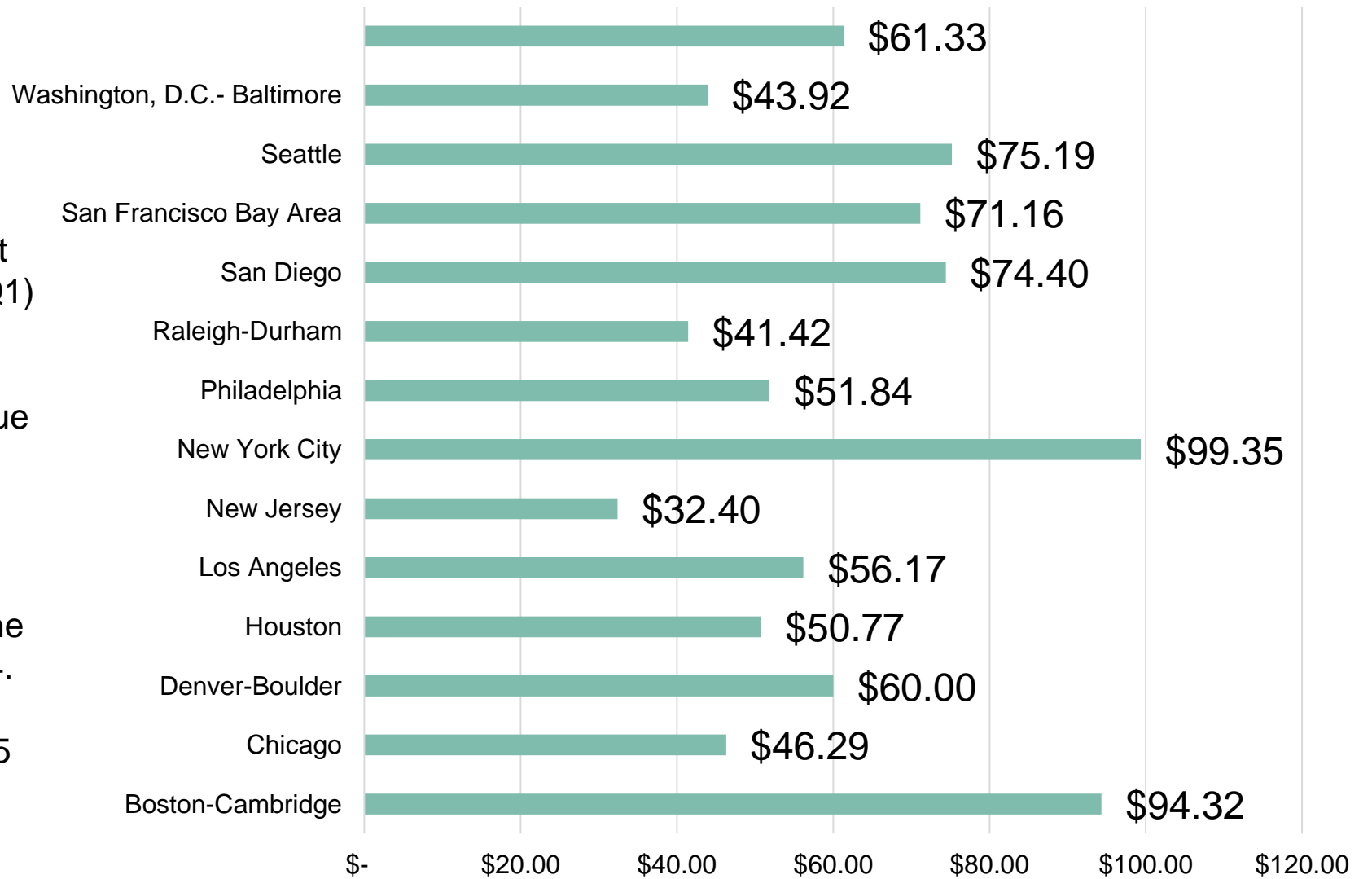
The amount laboratory demand in the US jumped in the 1st quarter of 2024.

Expected to continue growing with dwindling supply starting in late 2025 through 2027.

2024Q1- Source: CBRE

NNN is Triple Net Lease

Average Asking Rent: Bio and Life Science

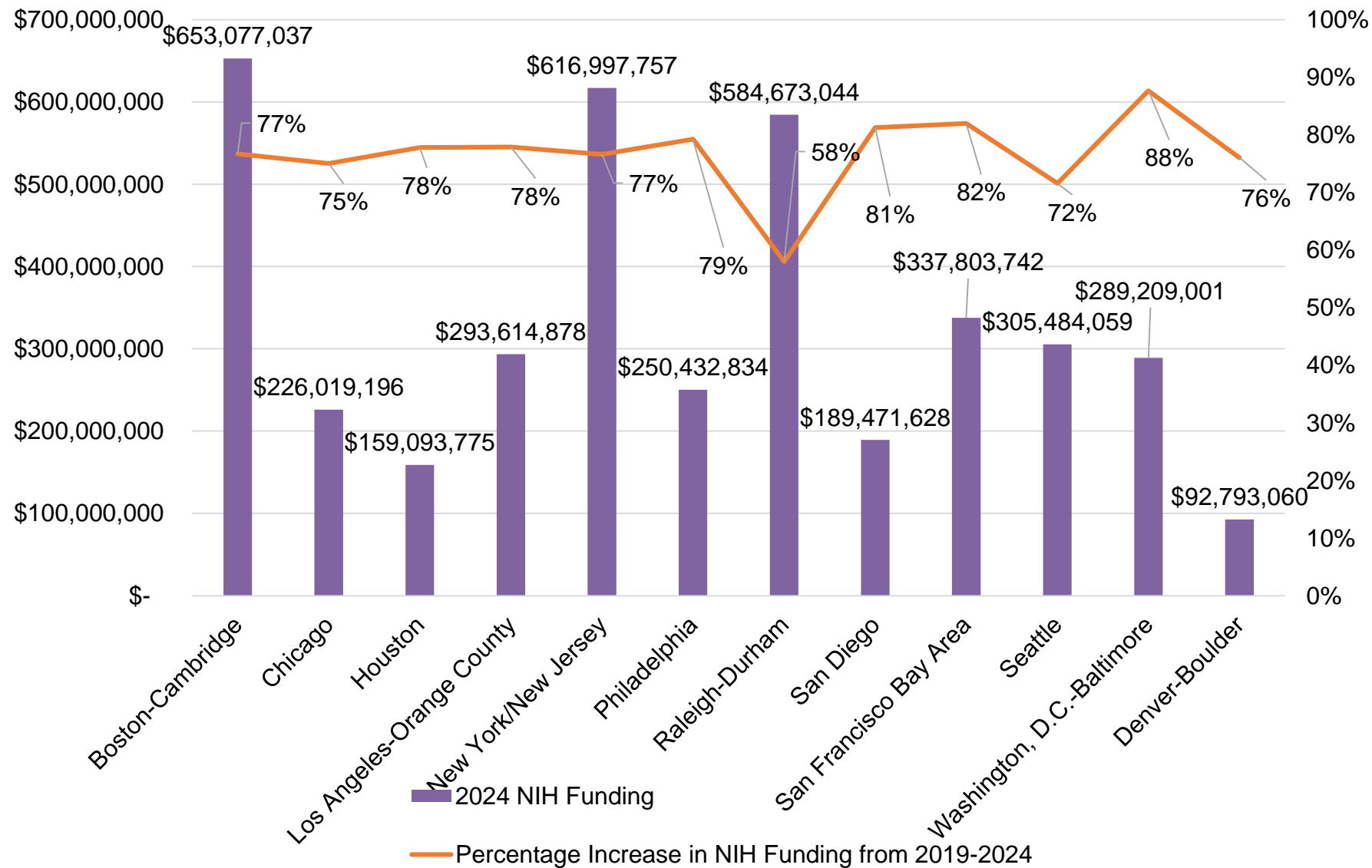


NIH Funding

2024 (present data)- Source: CBRE

Average 2024 NIH Funding-
\$333,222,501

Average percentage change from
2019-2024- 77% increase



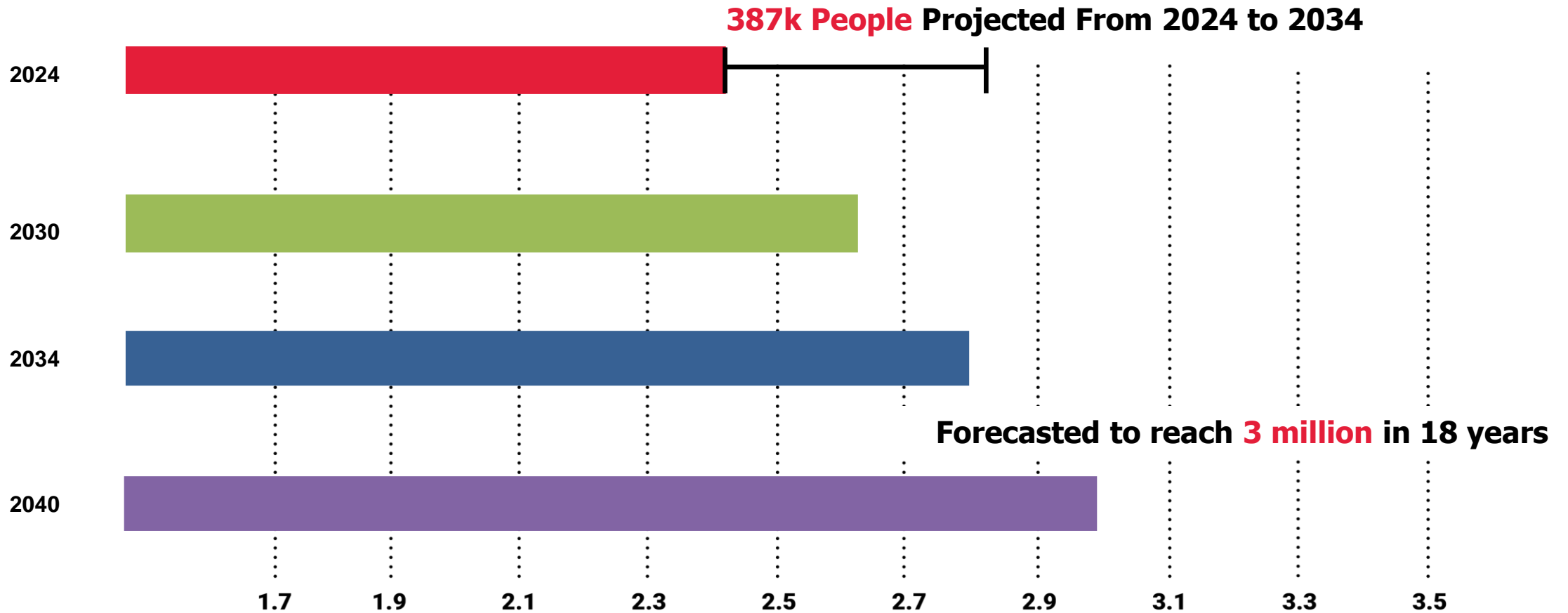
Nevada Economic Impact: bioscience

- **9,413 jobs**
 - Diagnostic equipment, pharmaceuticals, and distribution. The average annual wage is **\$97,766.**
- **\$39 million**
 - Awards from the National Institute of Health in FY2023 to Nevada.
- **1,062**
 - The number of businesses tied to the bioscience industry in Nevada.
- **\$357.1 million**
 - The total clinical trial economic Impact from 418 clinical trials in Nevada in 2022.

Sources: Biotechnology Innovation Organization , 2022, United for Medical Research, 2024 and JLL 2024

Clark County Population Forecast

● 2024 ● 2030 ● 2034 ● 2040

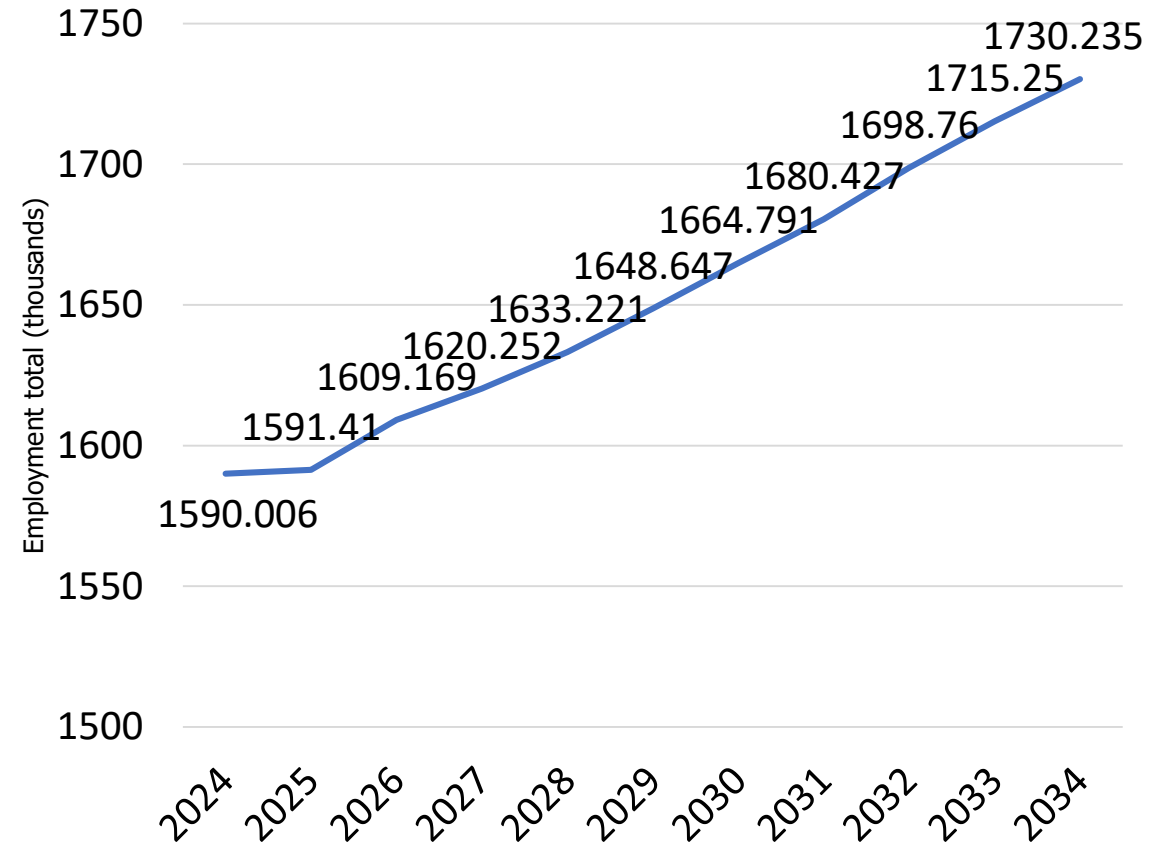


(Millions)

Source: 2024 CBER Population Forecast Sources: Nevada State Demographer, Nevada Department of

2024- 2034 Baseline Employment Forecast:

- **140,229 additional jobs in the next 10 years (baseline) Full + Part-time**
- Top 5 industries by percent increase in employment:
 - Accommodation and food services: 34,453 (17.7%)
 - ➔ Healthcare and social assistance: 25,947 (9.3%)
 - Transportation and Warehousing: 16,470 (11.7%)
 - State and Local Government: 12,655 (9.0%)
 - Administrative, support, waste management : 12,524 (8.9%)
- Assumption: land, water, and utilities not a barrier to entry.

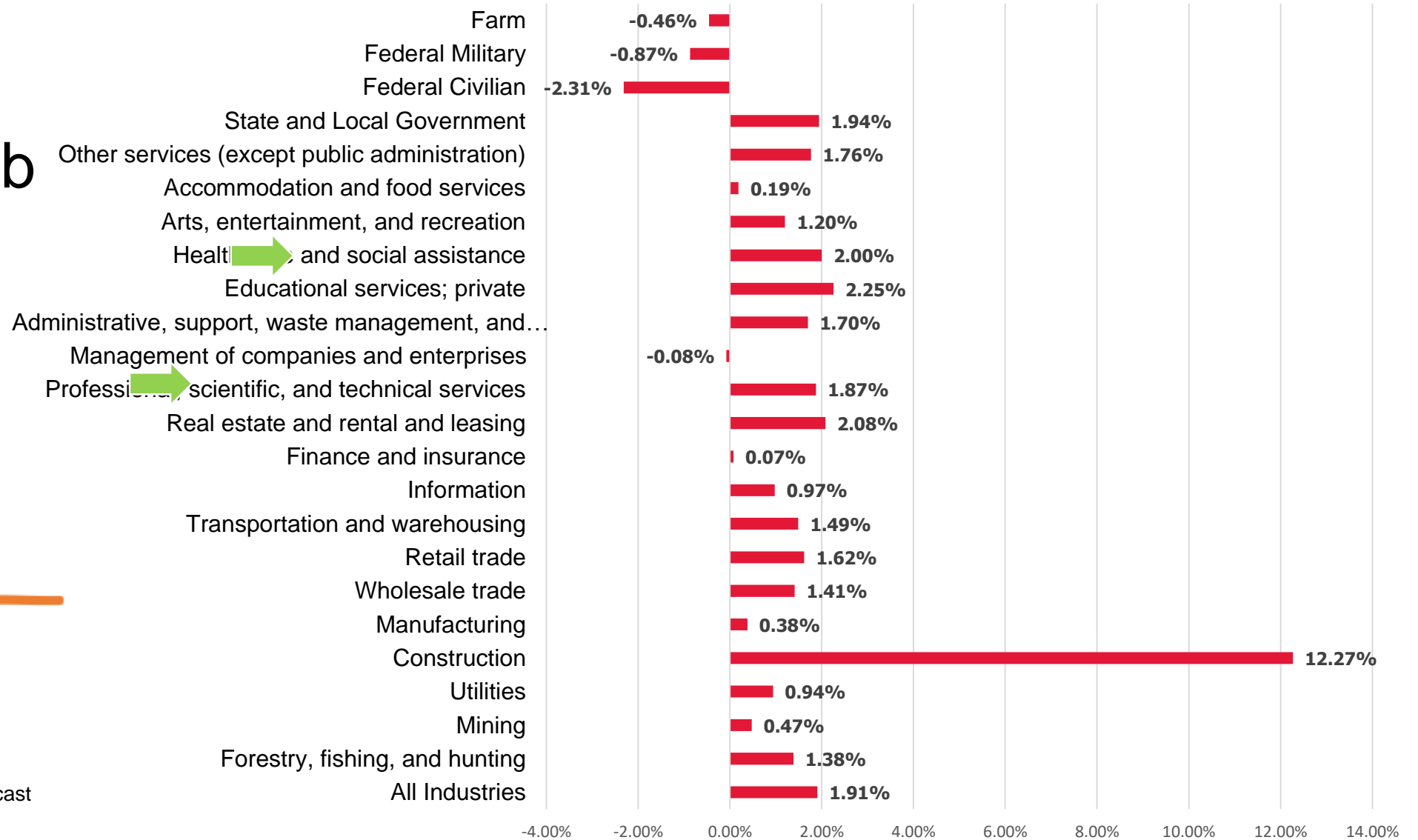


Source: 2024 CBER Population Forecast

Healthcare is forecasted to be the second largest industry by 2028

Clark County Vegas YoY Job Growth

YoY Job Growth (percent) By Industry 2023-2024

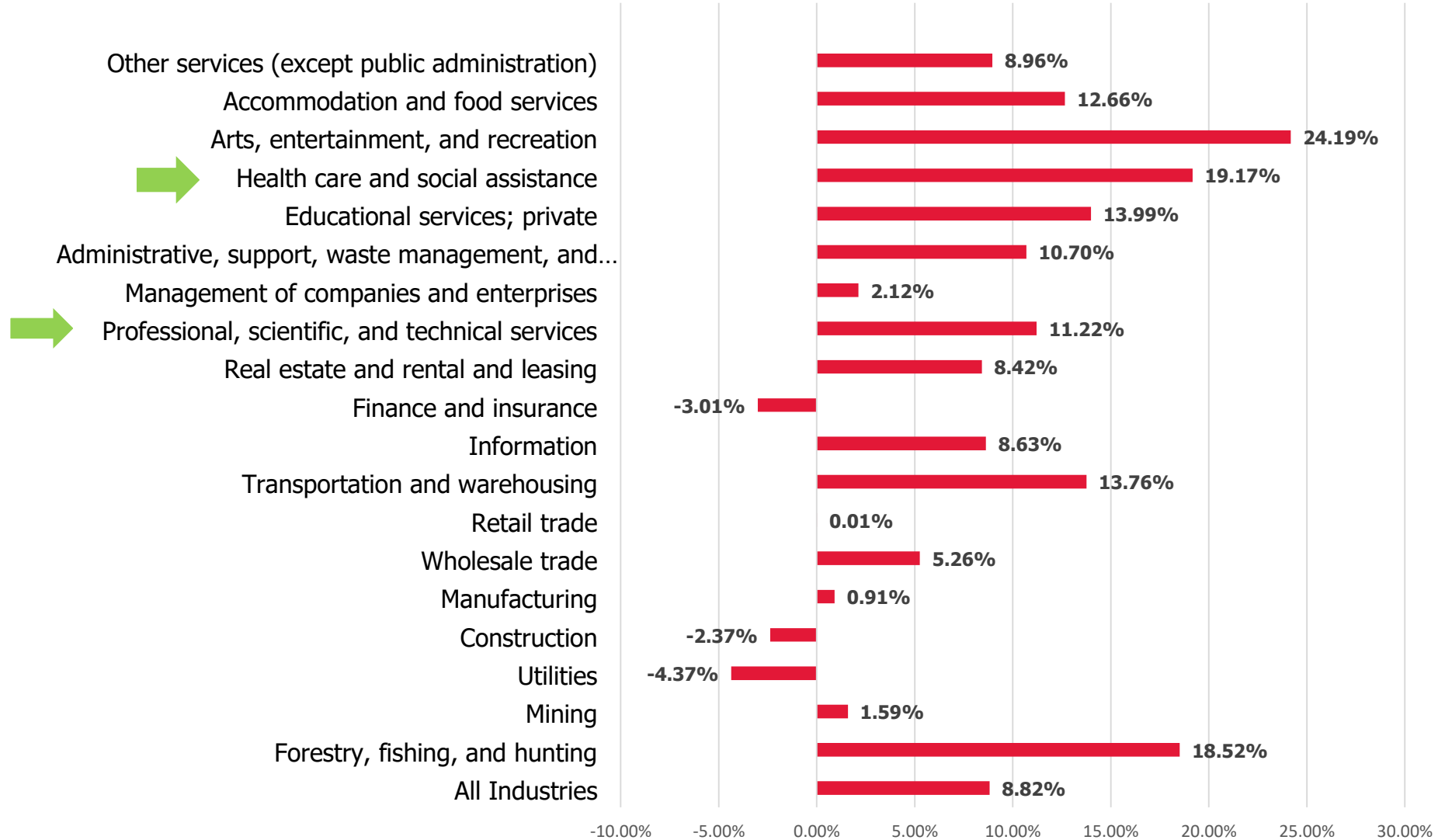


2023-2024

Source: 2024 CBER Population Forecast

Clark County: 10 Year Job Growth Projections by Industry

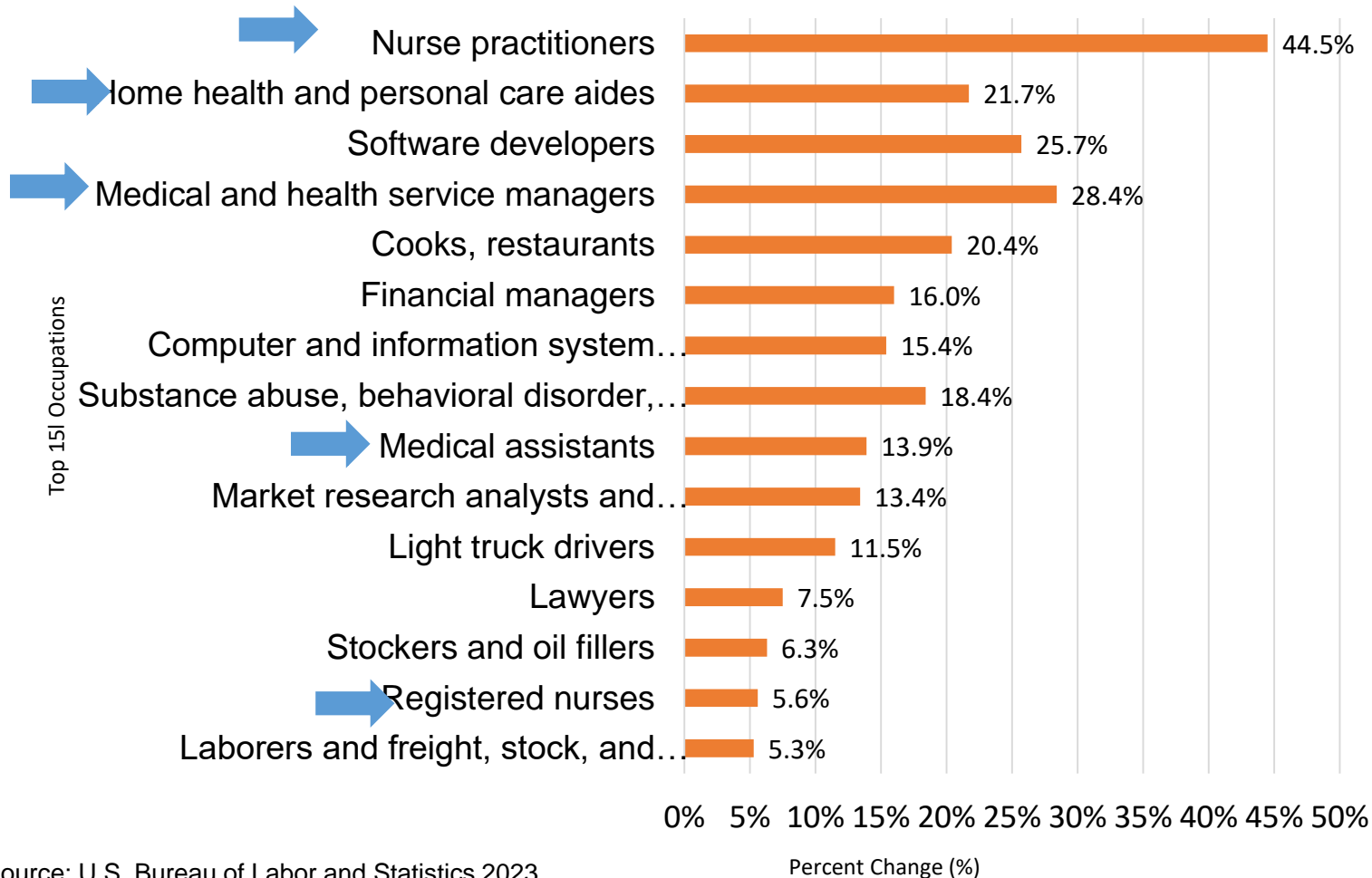
10 year projections for job growth 2024-2034 by Industry



2024-2034

Source: 2024 CBER Population Forecast

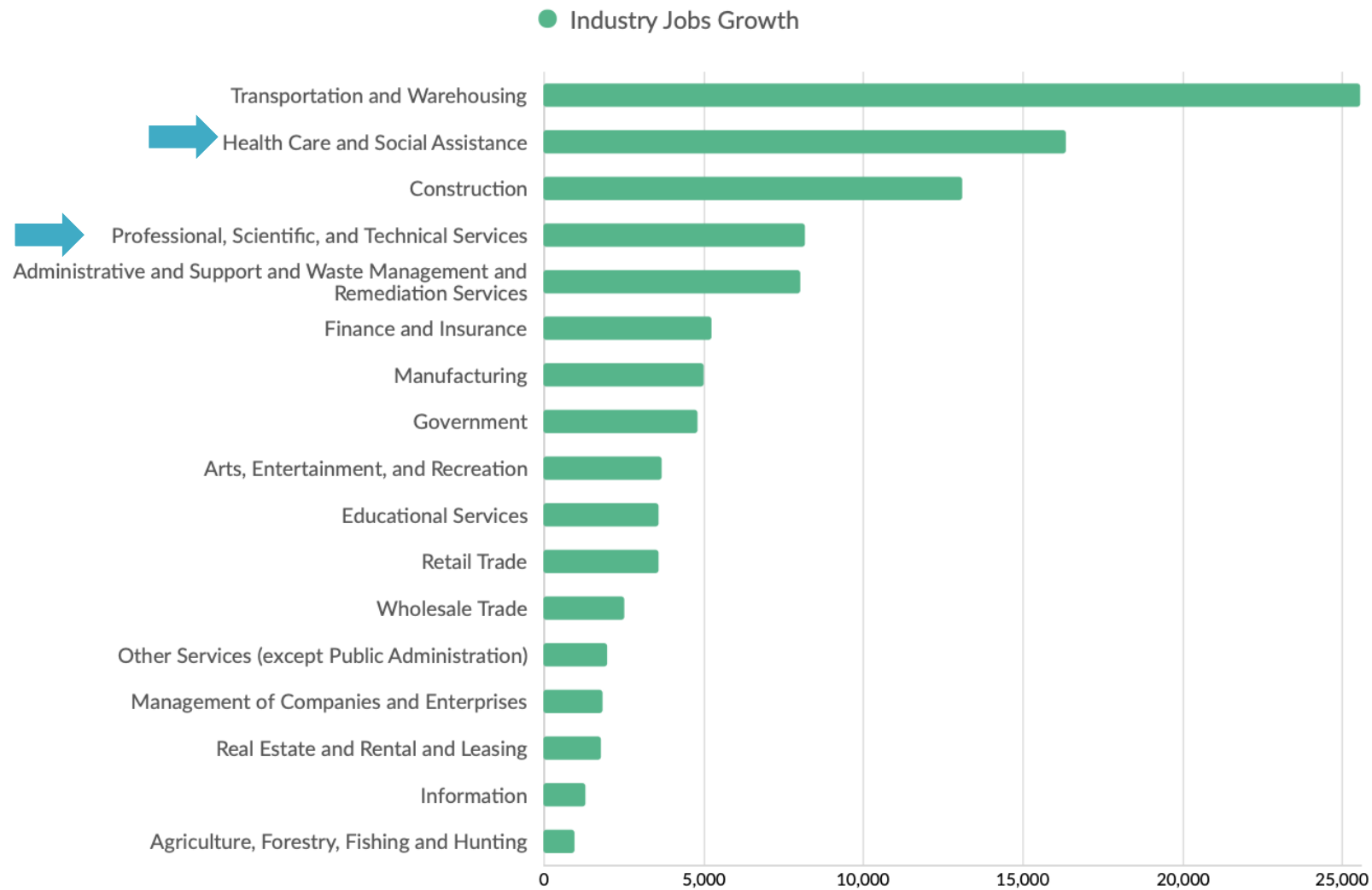
U.S. BLS Forecast for Top 15 Occupations (% change) 2022-2032



U.S. Growth Rates for top 15 Occupations: 2022-32

Note the theme around healthcare.

Source: U.S. Bureau of Labor and Statistics 2023



GOED Target Industries:

Note the theme around healthcare and professional and scientific services.

Source: Lightcast and GOED, 2023

Jobs and Education Levels associated with Biotech

Occupation	Entry-Level Education	Median Pay	Median Hourly Wages
Biochemists and Biophysicists	Doctoral or professional degree	\$107,460	\$51.66
Biological Technicians	Bachelor's degree	\$51,430	\$24.73
Chemical Technicians	Associate's degree	\$56,750	\$27.29
Chemists and Materials Scientists	Bachelor's degree	\$87,180	\$41.91
Medical Scientists	Doctoral or professional degree	\$100,890	\$48.50
Microbiologists	Bachelor's degree	\$85,470	\$41.09
Bioengineers and Biomedical Engineers	Bachelor's degree	\$100,730	\$48.43
Chemical Engineers	Bachelor's degree	\$112,100	\$53.90
Nuclear Medicine Technologists	Associate's degree	\$92,500	\$44.47
Clinical Laboratory Technologists and Technicians	Bachelor's degree	\$60,780	\$29.22
Health Information Technologists and Medical Registrars	Associate's degree	\$62,990	\$30.28

Source: Occupational Outlook Handbook, BLS

Note: Median Pay in Clark County in 2023 was \$60,142 or \$28.91; DETR

Bioscience research



Economic Diversification

- Industries connected to bioscience research:
 - Medical technology development already thriving in Salt Lake.
 - One of the industries that CBER that is forecasted to be leaving Southern California over the next ten years is pharmaceutical medicine manufacturing.
 - Other hotspots for medical device development and manufacturing is Orange County and San Francisco.
 - Only biomanufacturing cluster on the west coast is in San Francisco.

Table 2.3: Manufacturing Opportunities for Southern Nevada

Sector	Subsector
Chemical manufacturing	Pharmaceutical and medicine manufacturing
	Paint, coating, and adhesive manufacturing
	Soap, cleaning compound, and toilet preparation manufacturing
Plastics and rubber product manufacturing	Plastics product manufacturing
Fabricated metal product manufacturing	Architectural and structural metals manufacturing
Computer and electric product manufacturing	Semiconductor and other electronic component manufacturing
	Navigational, measuring, electromedical, and control instruments manufacturing
Electric equipment, appliance, and component manufacturing	Electrical equipment manufacturing
	Other electrical equipment and component manufacturing
Transportation equipment manufacturing	Motor vehicle manufacturing
Medical equipment and supplies manufacturing	

Note: Sector and subsectors are identified from the analysis presented in Appendix C.

Source: UNLV Brookings Mountain West, CBER, and TRC: Southern Nevada Industrial Study, 2024

Strongest multipliers by industry

Based on our analysis of industry occupation tables we found that the following industries had the highest job multiplier for every 1,000 jobs in that industry:

1. Information Technology +3,234
2. Manufacturing +1,339
3. Federal Military +1,482
4. Spectator Sports +1,184
5. Amusement, gambling, and recreation industries +1,135
6. Independent artists, writers, and performers +1,103
7. State & Local Government +1,088
8. Professional, Scientific, and Technical Services +1,022
9. Healthcare +1,012
10. performing arts, spectator sports and related industries +1,003

Source: (UNLV Center for Business and Economic Research Population Forecast 2024)

Return on investment



- **Life science research (e.g. genomics or biochemistry): 1 job** there are **3.57 support jobs**
 - \$1 generates an additional **\$1.20** broader economic growth
 - **40%** of life science programs only require a high school diploma and GED
- **Medical laboratories:** employment multiplier **14.9 jobs** (direct and indirect) **per \$1 million** in final demand

In comparison:

- **Hospitals:** creates **1.17 additional jobs** for every one job
 - **\$0.87** in additional output for every dollar spent
- **Physician offices:** employment multiplier of **15.4 jobs** (direct and indirect) per \$1 million in final demand
- **Nursing and residential care facilities:** **26.1 jobs** (direct and indirect) per **\$1 million** in final demand

Source: Economic Policy Institute, 2019 and AHA, 2015

Pharmaceutical and Medicine Manufacturing and Research and Development in Biotech Employment

Pharmaceutical and Medicine Manufacturing

	Employment Growth 2018-2022	Rank*	2022 Employment Level	Rank
Arizona	46.5%	6	4,725	20
California	2.4%	38	47,841	1
Colorado	27.2%	11	5,429	18
Nevada	13.7%	29	1,193	37
Texas	10.8%	33	13,866	8
Utah	25.3%	14	8,296	13

*Among 45 states. Alaska, Hawaii, North Dakota, South Dakota, and West Virginia employment growth rates are not available between 2018-2022 as BLS does not disclose data due to not meeting BLS or State agency disclosure standards

Research and Development in Biotech

	Employment Growth 2018-2022	Rank*	2022 Employment Level	Rank
Arizona	21.3%	25	2,108	17
California	53.0%	13	69,320	1
Colorado	102.5%	5	2,559	14
Nevada	31.2%	21	248	36
Texas	72.7%	8	9,596	9
Utah	51.6%	14	3,546	12

*Among 33 states. Some states' employment growth rates are not available between 2018-2022 as BLS does not disclose data due to not meeting BLS or State agency disclosure standards

Employment in Research and Development in the Physical, Engineering, and Life Sciences (NAICS 54171)

Overall Science Labor Force Ranking by State

1. California: 287,793
2. Texas: 149,513
3. New York: 130,593
4. Massachusetts: 107,903

22. Arizona: 34,912

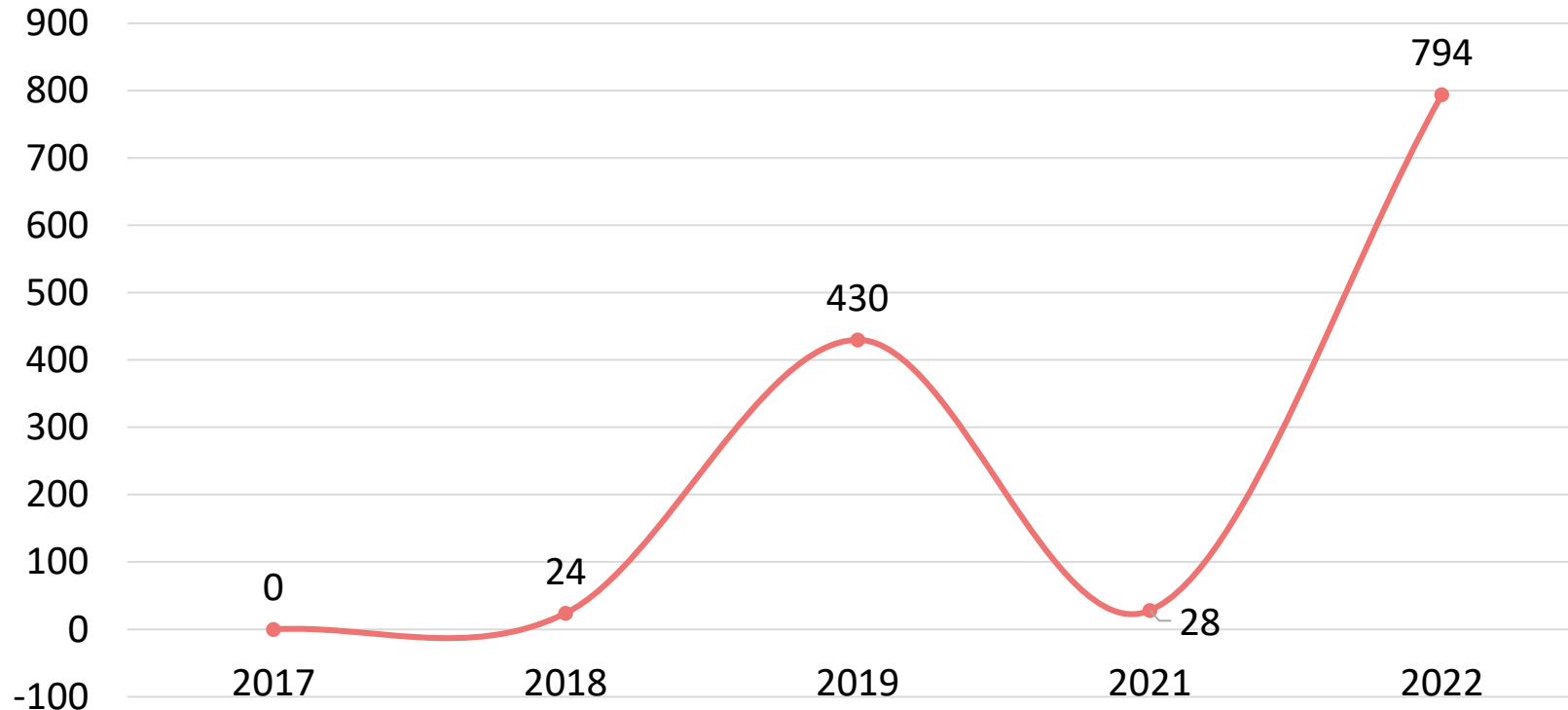
26. Utah: 21,692

33. Nevada: 14,261

	Employment Growth 2018-2022	Rank	2022 Employment Level	Rank
Arizona	5.0%	47	6,112	26
California	36.4%	15	182,739	1
Colorado	30.6%	24	16,070	16
Nevada	33.5%	20	3,748	30
Texas	48.1%	6	30,407	8
Utah	34.2%	18	9,261	20

Source: CBER's calculation; Quarterly Census of Employment and Wages, BLS

Change in Science Labor Force from California by State: 2022



2022

Science Labor Force from California by State (Within 1 Year)

1. Washington: 951
2. Massachusetts: 935
3. **Nevada: 794**
4. Utah: 532

8. Texas 298
9. Colorado: 288

14. Arizona: 170

Note: The science labor force induces individuals in life, physical, and social science occupations as well as clinical laboratory technologists and technicians.

Source: CBER's calculation; 2019, 2021, and 2022 1 Year ACS Public Use Microdata Sample (PUMS), US Census

Arizona

36,410 jobs

Diagnostic equipment, pharmaceuticals, and distribution. The average annual wage is **\$99,585**.

\$364.2 million

awards from NIH in FY2023 to Arizona.

3,651

The number of businesses tied to the bioscience industry in Arizona.

\$1.16 billion

The total clinical trial economic impact from 900 clinical trials in Arizona in 2022.

Source: FLINN Foundation (April 2024)

Making an Impact

Arizona's Investment in Bioscience Delivers Results



Data current as of April 2024, based on TEconomy Partners LLC analysis of United States Bureau of Labor Statistics, QCEW data from IMPLAN Group LLC.

Phoenix: a global destination for bioscience and healthcare innovators

The city of Phoenix hosts a thriving life-sciences ecosystem that fosters collaboration among industry, education, research and community partners to transform discoveries into health.

Advertisement in Nature, 2022



Fueling a bioscience powerhouse

How a bioscience and innovation core in downtown Phoenix is poised to revolutionize health and drive economic growth to benefit Arizona and beyond

Arizona State University, 2022

- Phoenix Bioscience Core (PBC), a 30-acre life sciences innovation district in Downtown Phoenix, was initiated by the city of Phoenix, ASU, the Arizona Board of Regents, and private industry in the early 2000s.
- 1.7 million square feet of educational, research, clinical, lab, office, and community spaces
- PBC's anchor institutions: three public research universities (ASU, NAU, and U of A), the Translational Genomics Research Institute (TGen), the City of Hope, the International Genomics Consortium (IGC), Exact Sciences, several of Phoenix's major healthcare systems, emerging life science companies.
- The National Institutes of Health signed a lease at 850 PBC in 2023- the entire 7th floor; approximately 35,000 square feet.
- Capital investment exceeding \$3.7 billion (more than 5.7 million SF facilities) since 2019
 - Including Mayo Clinic's expansion: double the size of the Phoenix campus (more than 3 million SF and an additional 100 new patient beds)
- Phoenix ranked first in life-science job growth (Nature)

Source: [ASU](#); [PBC](#); [Nature](#); [Arizona Bioindustry Association](#)

Phoenix Moves to Put Itself on the Biotechnology Map

New York Times

Published 4:59 a.m. ET Feb. 2, 2005 | Updated 11:00 p.m. ET Feb. 1, 2005



PHOENIX - Taking the first step in an ambitious, if risky, strategy to create a biotechnology center, the city of Phoenix has completed work on a \$46 million medical laboratory building dedicated to genetic research.

Finished in December, the 170,000-square-foot laboratory stands on a 15-acre downtown area known as the Phoenix Biomedical Center at Copper Square. Although the official opening is not until March, two nonprofit research groups - the Translational Genomics Research Institute, known as TGen, and the International Genomics Consortium - have already moved into four floors that they leased before construction.

Another floor of the six-story laboratory is to be occupied by the National Institute of Diabetes and Digestive and Kidney Diseases, an arm of the National Institutes of Health, leaving only one full floor still to be leased.

Source: New York Times reprinted in [Oscala StarBanner](#) (2005)

Utah

40,419 jobs

Diagnostic equipment, pharmaceuticals, and distribution. The average annual wage is **\$80,984**.

\$291 million

awards from NIH in FY2023 to Utah.

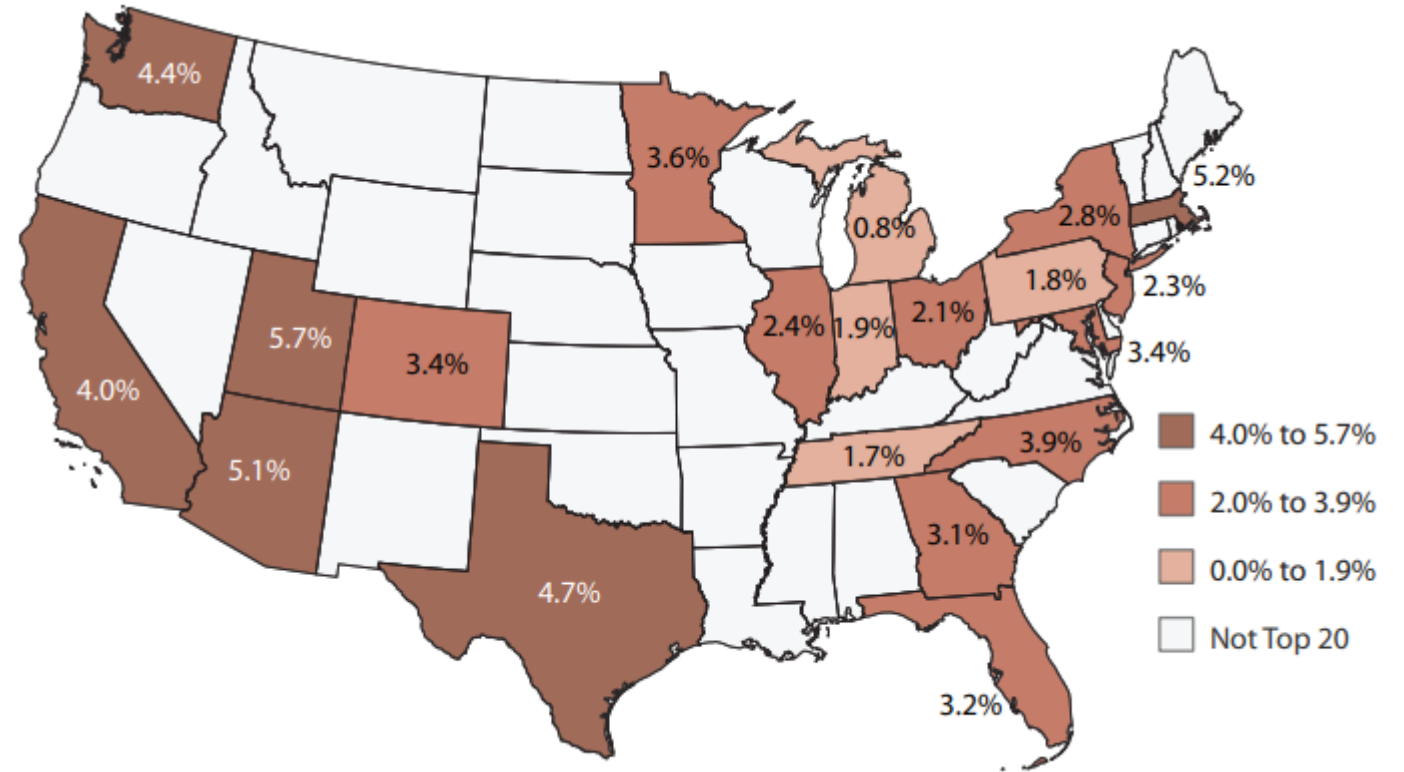
1,845

The number of businesses tied to the bioscience industry in Utah in 2021.

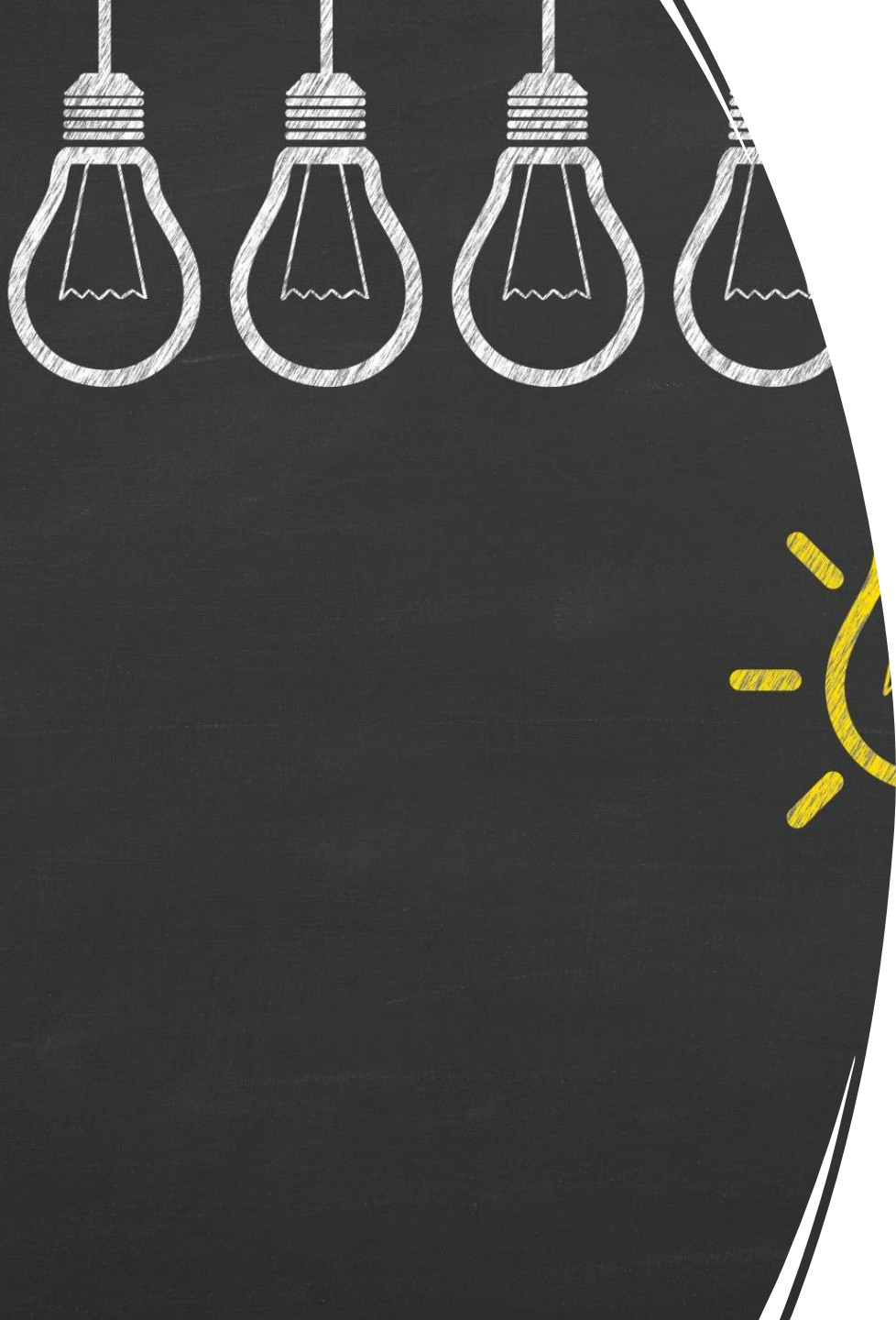
\$1 billion

The total clinical trial economic impact from 572 clinical trials in Utah in 2022.

Source:



Sources: Kem C. Gardner Institute, University of Utah 2012-2021; BIO 2024



Synergies for Southern Nevada in bioscience

- Competitive on a cost per business.
- Younger and more diverse population.
 - Forecasted to grow to over 3 million residents by 2042 (CBER Population Forecast, 2024)
- Growing higher education programs, especially in engineering, medicine, and science.
- Urgent need to diversify our economy.
- Complements with current workforce and higher education training programs.

