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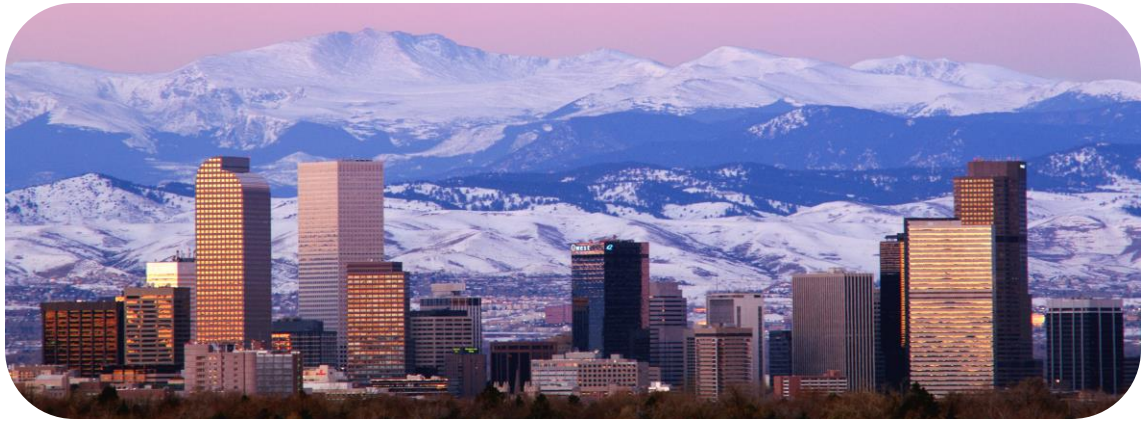
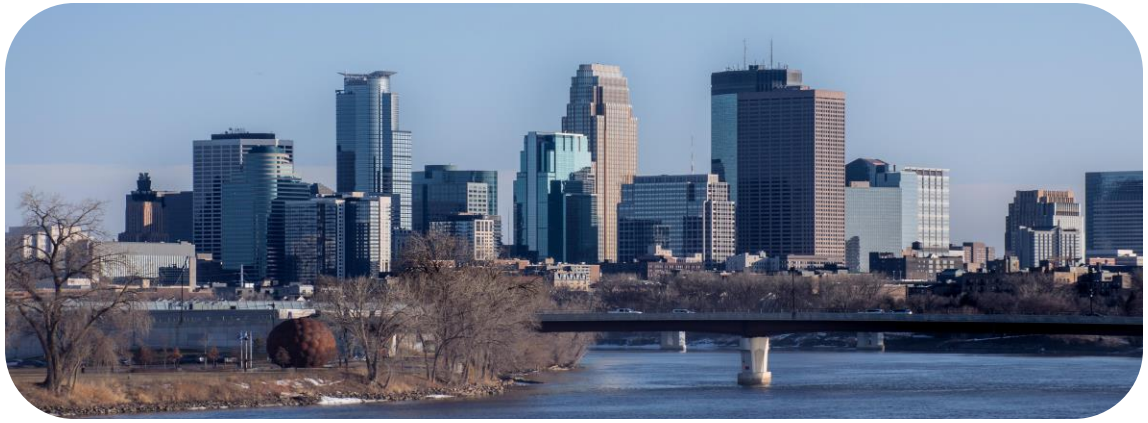
Regional Competitiveness - Metro Areas

Atlanta, GA

Colorado Front Range



Twin Cities, MN



North Carolina Research Triangle

Introduction

Advanced Industries

Advanced industries drive innovation and anchor national competitiveness. Because they are capital intensive, they require coordinated resources including financing, specialized facilities, skilled talent, and enabling infrastructure, to mature research into commercialization. Securing these elements is critical to their development. This analysis outlines the strategies and outcomes of regional innovation ecosystems pursuing advanced industries.

This comparison covers Atlanta, the Colorado Front Range, the Twin Cities, and the Research Triangle. Indicators used to gauge ecosystem strength include higher education and STEM enrollment, university R&D spending, talent and workforce depth, accelerator and incubator presence, business climate, state funding, and venture investment.

Colorado's Positioning

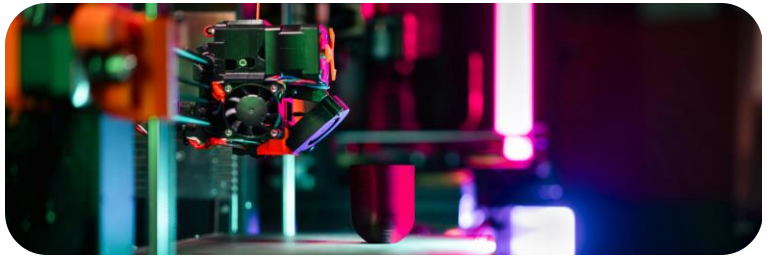
The Front Range hosts a dynamic and growing ecosystem of innovation centered on advanced industries. The region’s favorable attributes including high venture capital investment, substantial university output, robust accelerator network, and extensive federal lab presence support a nurturing environment for entrepreneurship and technology commercialization. Developing a unified innovation alliance that combines funding, expertise, and industry support will help support and develop Colorado’s national and global competitiveness in advanced industries.

Colorado Advanced Industries

The Colorado Office of Economic Development & International Trade has created an Early-Stage Capital and Retention Grant to promote advanced industries statewide.

COLORADO
Office of Economic Development & International Trade

Advanced Manufacturing



Aerospace/Space

Biosciences

Electronics/Quantum

Energy & Natural Resources

Infrastructure Engineering

Technology & Information

Regional Development & Trends

Atlanta, GA

History

In 1983, the State of Georgia lost a headquarters bid for a consortium of semiconductor development to Texas, largely due to Texas' stronger public-private partnership. In 1990, a group of Georgia leaders established the nonprofit, Georgia Research Alliance, to unite businesses, research universities, and state government to build an innovative technology hub.

Current Trends

Atlanta is known for its presence in the tech scene, including healthcare, fintech, logistics, and media, with it emerging as a leading hub for cybersecurity, health tech, and SaaS. The Atlanta Tech Village continues to bolster connectivity and investment, and Atlanta aims to become a top-five tech-startup center in the U.S.

Twin Cities

History

The Mississippi River strongly influenced the development of the Twin Cities. St. Paul and Minneapolis initially endured a strong rivalry, with Minneapolis becoming the flour milling capital of the world, and St. Paul focusing on trade and transportation, eventually maturing into the state capital and a pillar of banking and industry. These changes led to a diversified economy and perceived opportunities that attracted new residents.

Current Trends

The Twin Cities show strength in their top 15 nationwide ranking for health verticals, including health tech, life sciences, digital health, oncology, and health and wellness. Additionally, with a long history in advanced manufacturing, Twin Cities has received nearly $2B in Department of Defense contracts.

NC Research Triangle

History

In the mid-1950s, business and government leaders sought to diversify North Carolina's economy beyond manufacturing jobs in agriculture and tobacco. The Research Triangle Park emerged as a solution leveraging research universities to develop advanced industries. By the mid-1960s, with a shift to nonprofit status, and support from businesses and government, the venture was solidified and began ecosystem building.

Current Trends

The Research Triangle is strong in biotech and life sciences, seeing increasing VC investment from firms like Hatteras Venture Partners and Cape Fear BioCapital, despite uncertainty in the market. Life science support continues to expand with the development of areas like The Pearl, catered to supporting health and biotech startups.

Academic & Federal Institutions

	CO Front Range	Atlanta Metro	Twin Cities	NC Research Triangle
R1 Research Universities	University of Colorado, Colorado State University, Colorado School of Mines, University of Denver	Georgia Institute of Technology, Emory University, Georgia State University	University of Minnesota	Duke University, University of North Carolina Chapel Hill, North Carolina State University
Highest Ranked Subjects	Physics Aerospace Science Biomedical Science	Materials Science Energy Science Chemistry	Ecology Psychology Medical Technology	Public Health Biomedical Science Nursing
Sample - Key Federal Labs	NOAA NREL (National Renewable Energy Laboratory) NIST (National Institute of Standards and Technology)	CDC (U.S. Centers for Disease Control and Prevention)		EPA NIH NIEHS

Data Source: ARWU University Rankings

Education

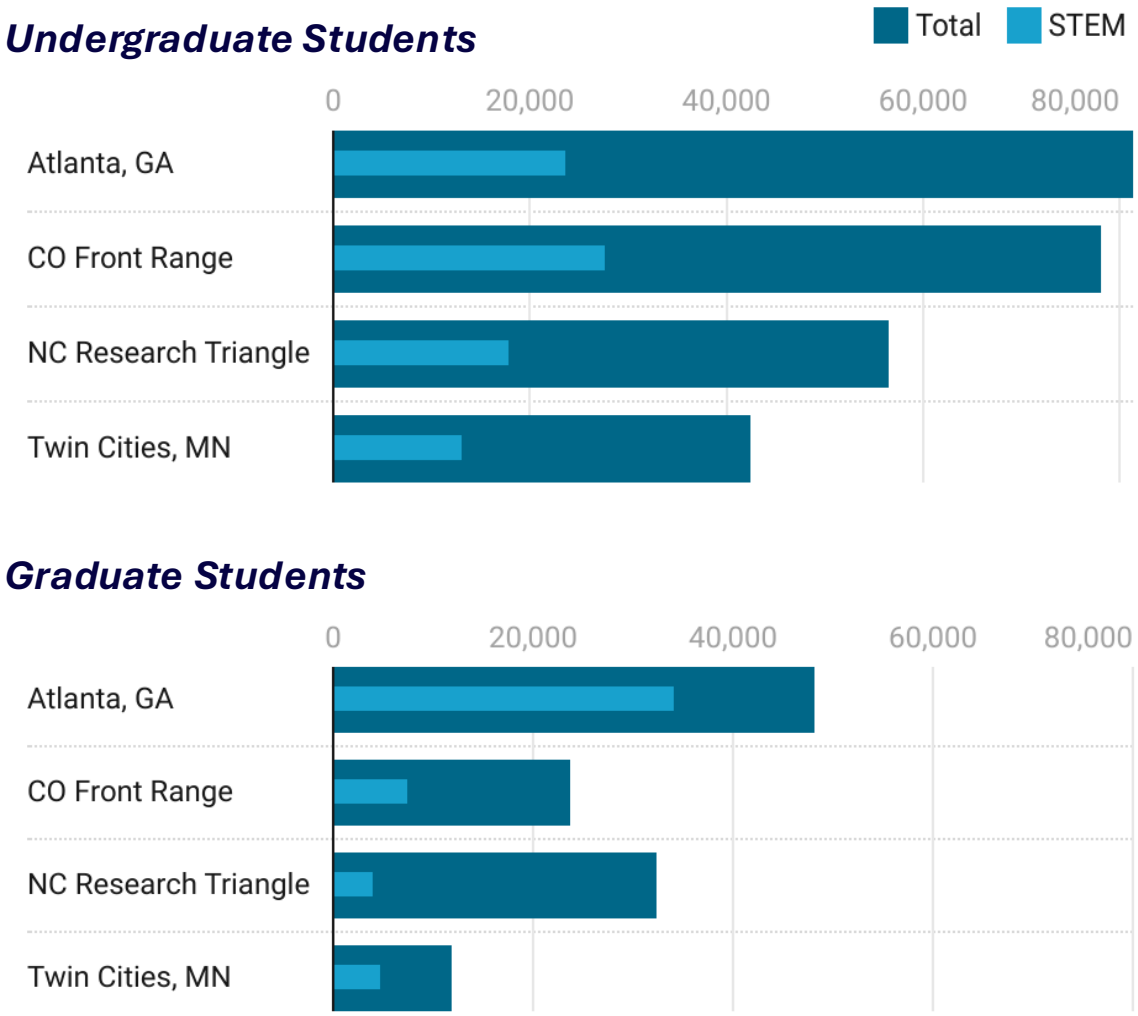
Education is the foundation of an advanced industry workforce, and Colorado has a robust collection of five Front Range R1 research universities. The state's large STEM enrollment translates to a competitive workforce and a high patent production density.

The number of startups within the region highlights the innovative performance and academic performance of schools. **In FY 2024, CU Boulder ranked #1 nationwide for university spinouts**. Atlanta is anchored by the Georgia research alliance which provides substantial support to innovative output as well, and utilizes equipment sharing between schools, maximizing access to resources. Similarly, North Carolina's Research Triangle leverages a trio of high performing universities to engage in knowledge sharing and academic collaboration.

R1 University Spinout Counts (FY2024):

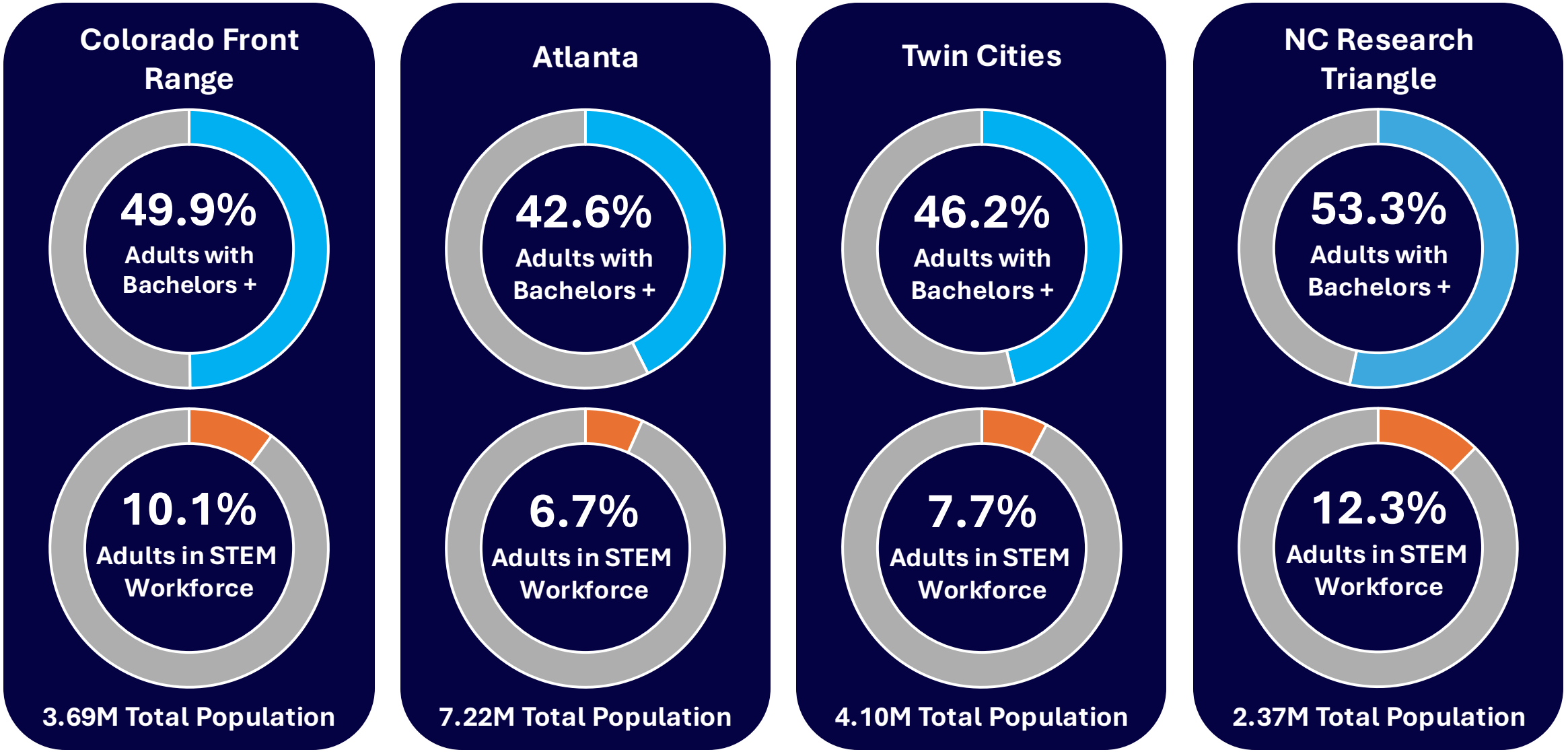
43	25	25	29
Colorado Front Range	Atlanta, GA	Twin Cities, MN	NC Research Triangle

2024 R1 University Enrollment



Data Source: University Statistics

Talent & Workforce



Data Source: U.S. Census Bureau

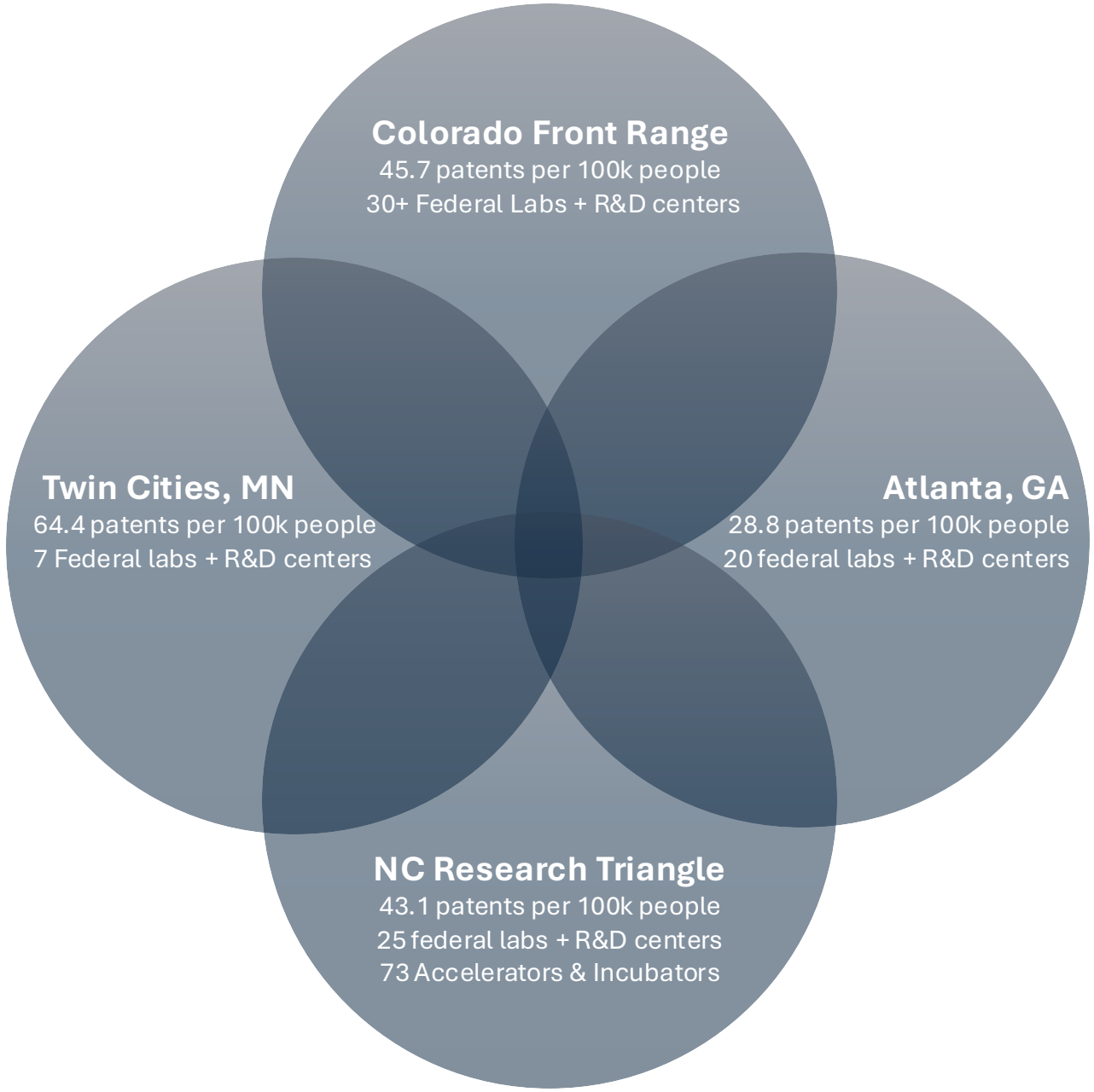
Talent & Workforce

The Colorado Front Range not only **hosts the largest concentration of federal labs** outside Washington, D.C., but **also outperforms peer regions in translating research into innovation**.

With **45.7 patents per 100,000 residents**, Colorado **ranks ahead of Atlanta and the Research Triangle and** nearly **rivals the Twin Cities' nation-leading patent intensity.**

This combination of federal research infrastructure and high patent productivity creates a uniquely balanced ecosystem: Colorado both **generates breakthrough science and rapidly converts it into economic value**. Together, these assets reinforce Colorado's position as **a top-tier innovation hub** with **scalable growth** potential.

The National Renewable Energy Laboratory in Golden, CO



Data Source: Economic Innovation Group

Longstanding Accelerators & Incubators

Accelerators and incubators drive early-stage success by providing mentorship, funding, and resources that distill innovation into economic value. Each region's unique infrastructure plays a key role in shaping how startups grow and scale.

CO Front Range

techstars_ Boulder

Founded 2006
Vertical Focus: Software

Innosphere
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Founded in 1998
Vertical Focus: Life Sciences, Earth & Space

Atlanta

techstars_ Atlanta

Founded in 2016
Vertical focus: Commerce Tech, CPG

atdc
GEORGIA TECH®

Founded in 1980
Vertical Focus: HealthTech, FinTech

Twin Cities

BETA

Founded in 2014
Vertical Focus: SaaS, AI/ML, HealthTech

NC Research Triangle

FIRST FLIGHT VENTURE CENTER

Founded in 1991
Vertical Focus: Agnostic

biolabs

Founded in 2016
Vertical Focus: Life Sciences, BioTech

Business Climate & Infrastructure

The core startup rate shows the median share of businesses that were formed in an industry sector during the past year, excluding the agriculture, mining, and utilities industries. This minimizes the impact of outsized industries and helps to gauge the entrepreneurial and risk-embracing tendencies of the local population. The share of workers at firms less than five years old can provide insight into the volume of firms, as well as detailing how well young businesses survive and scale. Similarly, average five-year net migration is an important variable for overall state growth.

Colorado

9.5% Core Startup rate

0.4% Migration rate

13.4% Share of workers at young firms

Georgia

10.5% Core Startup rate

1.2% Migration rate

11.7% Share of workers at young firms

Minnesota

7.6% Core Startup rate

-0.1% Migration rate

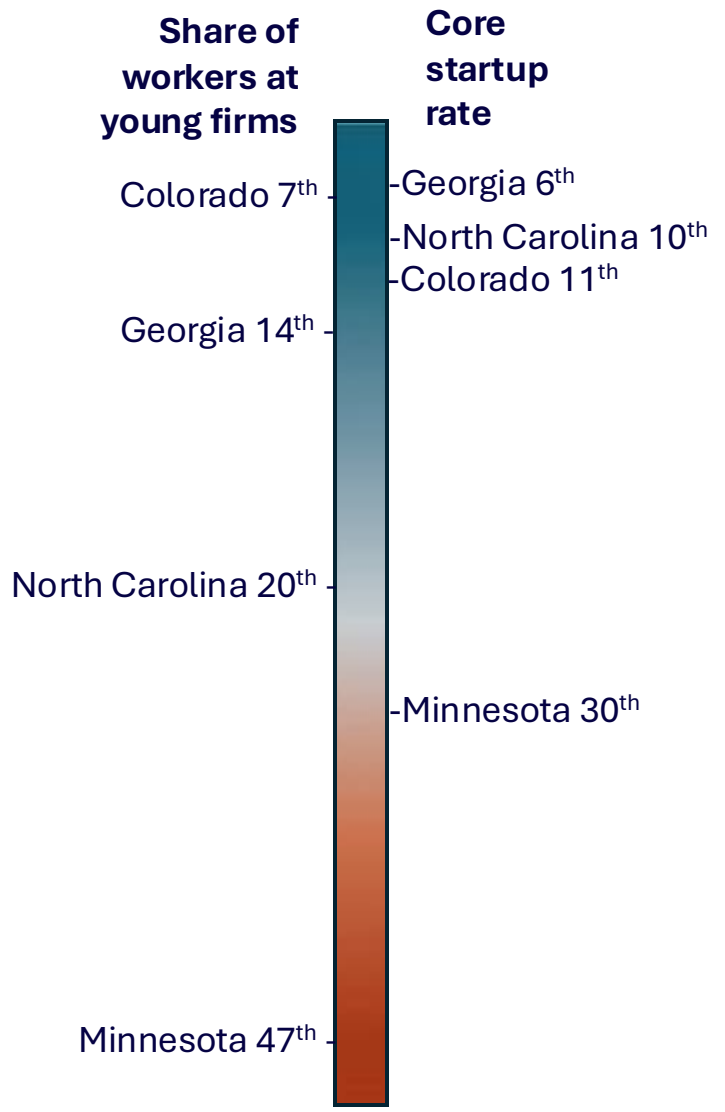
8.4% Share of workers at young firms

North Carolina

9.7% Core Startup rate

1.3% Migration rate

10.6% Share of workers at young firms

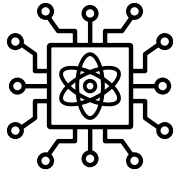


Data Source: Economic Innovation Group

State Support

	Colorado Front Range	Twin Cities, MN	Atlanta, GA	NC Research Triangle
Private Investment	**Colorado Venture Capital Authority** $50K-$1M per investment for seed and early-stage startups, distributed by collaboration with professional venture capital fund managers	**Minnesota Forward Fund** $390M in loans, equity, and grants to catalyze CHIPS/DoD/other federal matches across semiconductors, aerospace, biomanufacturing, and climatetech	**Invest Georgia** $49.6M in state-allocated capital (since conception) committed into VC funds that back Georgia startups	**North Carolina Biotechnology Center** $1M reoccurring to NCBiotech, to fund company formation, commercialization, and ecosystem growth
Workforce Development	**The Colorado Quantum Fund** $74M for refundable quantum tax credits to support for the creation of quantum facilities, new quantum technologies, businesses, and jobs	**Minnesota Job Creation Fund** ~$17.1M awarded FY24 for performance-based incentives for companies creating jobs	**Quick Start** $21.53M FY25, state-funded customized workforce program that underpins large advanced-manufacturing and aerospace investments	**One NC Fund** ~$63M distributed across 265 performance-based grants for job creation/expansion
R&D Focused	**Translational Quantum Research Seed Grants** $50,000 per award seed grants for quantum tech research translation	**MnDRIVE** $22M annually to the University of Minnesota to support research in robotics, global food, environment, brain conditions, and cancer clinical trials	**Georgia Research Alliance (GRA) Programs** $5.13M in state appropriations for seed funding for university research commercialization	**NCInnovation Endowment** $500M to translate university research outside the Triangle/Charlotte into companies

Colorado State Support



Colorado Quantum Fund

$74M in refundable quantum tax credits, including support for the creation of quantum facilities to develop new quantum technologies, businesses and jobs. Est. by HB24-1325

Advanced Industries Accelerator Program

$21.9M awarded in FY23-24 between Proof of Concept Grant, Early-Stage Capital and Retention Grant, Collaborative Infrastructure Grant, Export Accelerator Grant for Colorado's advanced industries

Translational Quantum Research Seed Grants

$50,000 per award for seed grants for quantum tech research translation; total program funding ~$1.2M over 3 years for multiple awards.

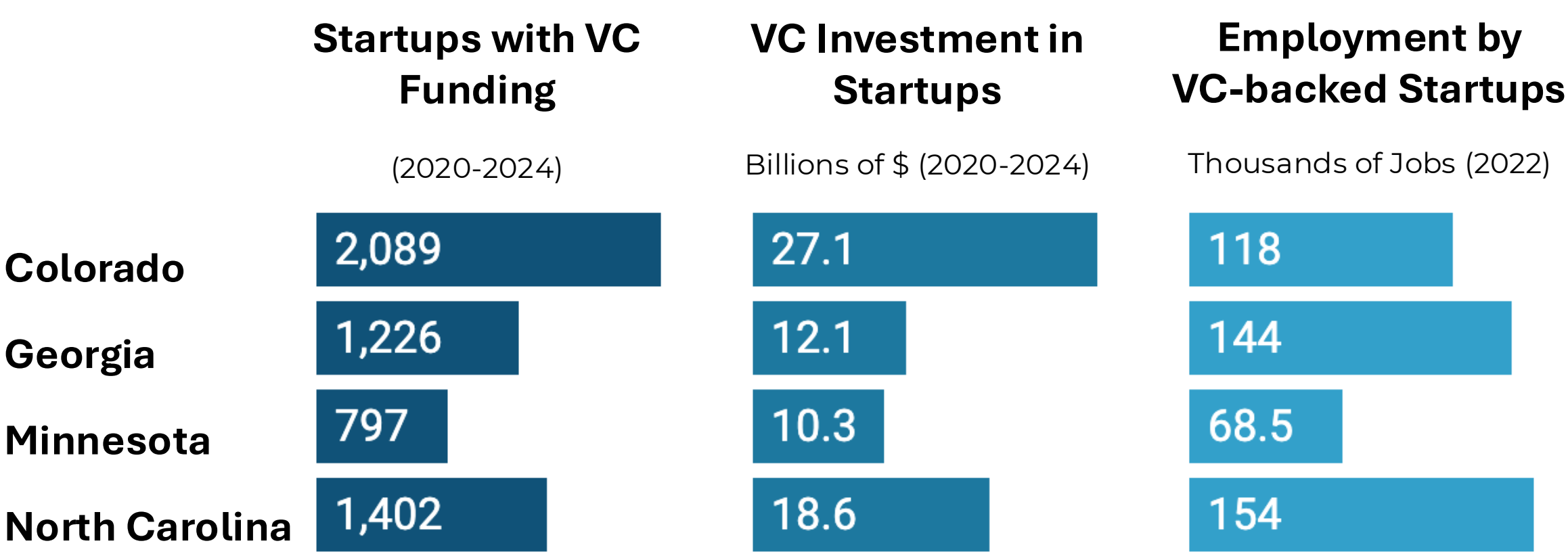
Colorado Venture Capital Authority

$50K-$1M per investment for seed and early-stage startups, established by the Colorado Legislature, the VCA operates as a Special Purpose Authority.

Advanced Industry Investment Tax Credit

25%-35% per investment, up to $100,000, in tax credits awarded to investors and advanced industries businesses until $4,000,000 of credits have been awarded (reduced to $2.5M starting in 2026).

Capital & Innovation – VC

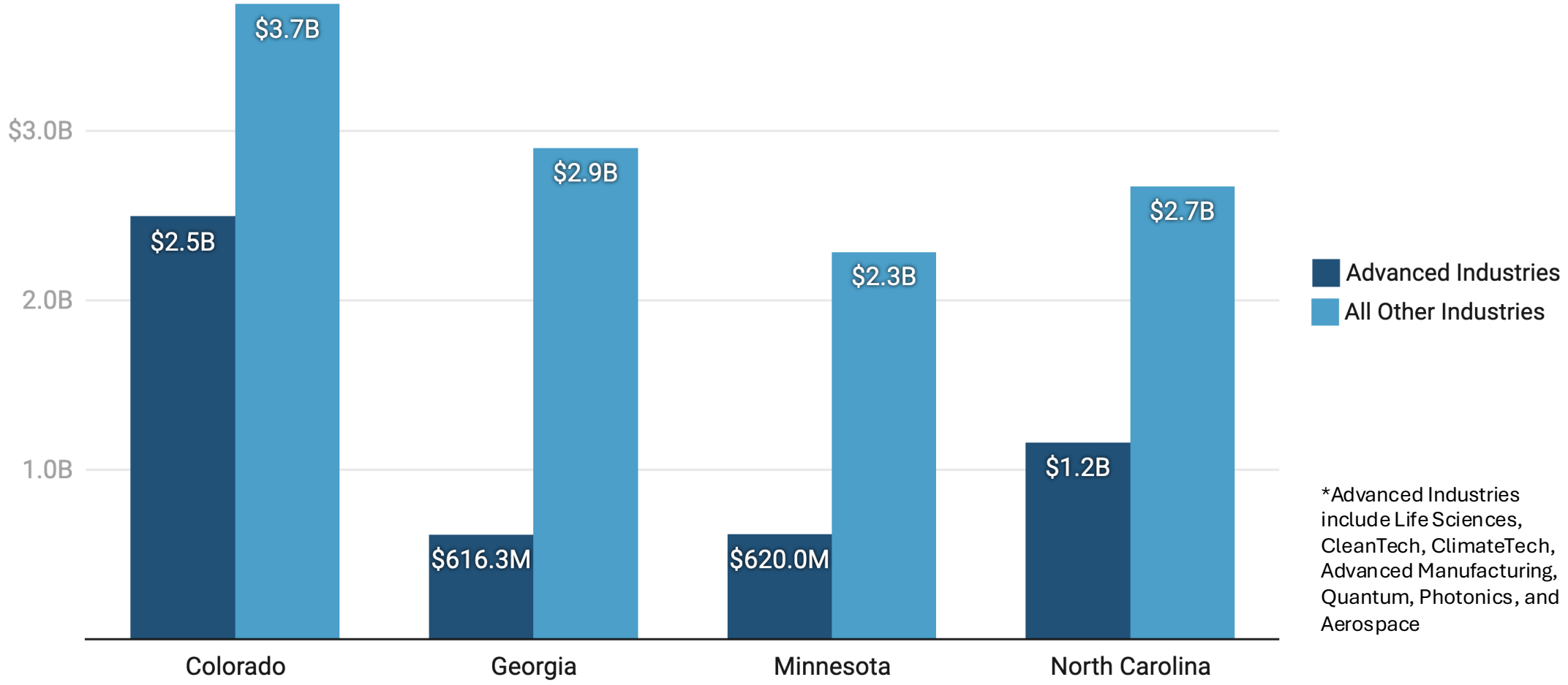


Despite leading in VC funding and startups, Colorado lags Georgia and North Carolina in VC-backed startup employment

Data Source: National Venture Capital Association State Profiles

Capital & Innovation – VC

Total Annual VC Investment By Industry Vertical (2019-2024)



*Advanced Industries include Life Sciences, CleanTech, ClimateTech, Advanced Manufacturing, Quantum, Photonics, and Aerospace

Data Source: PitchBook Data, Inc. Analysis as of October 2025.

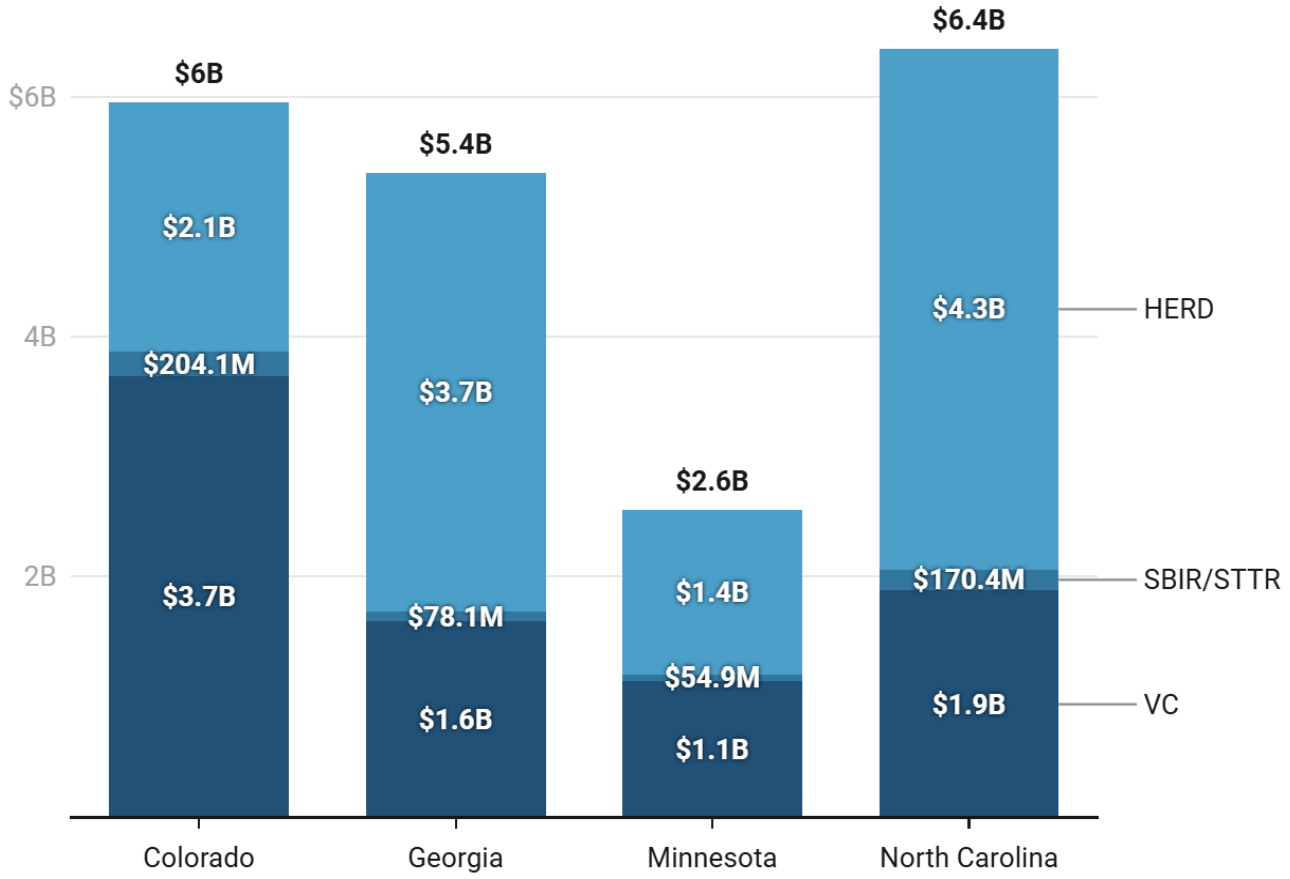
Capital & Innovation – VC

On a per capita basis, Colorado holds a wide lead over the other sampled innovation regions with a funding density of $1,009 per person. This is followed by North Carolina at $588 per person, Georgia at $485 per person, and Minnesota at $444 per person.

Colorado's elevated quantity of investment funding is primarily derived from venture capital alongside Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) funding programs. By contrast, Georgia and North Carolina derive larger proportions of funding from Higher Education Research and Development (HERD). This is primarily due to medical university research funding.

Though HERD funding has consistently increased from 2013 to 2023 across all regions, SBIR/STTR and VC funding have remained variable after falling from record highs in 2021. State investment and philanthropic funding remain key to supporting the development of advanced industries, which may face reduced funding from traditional sources during times of economic volatility.

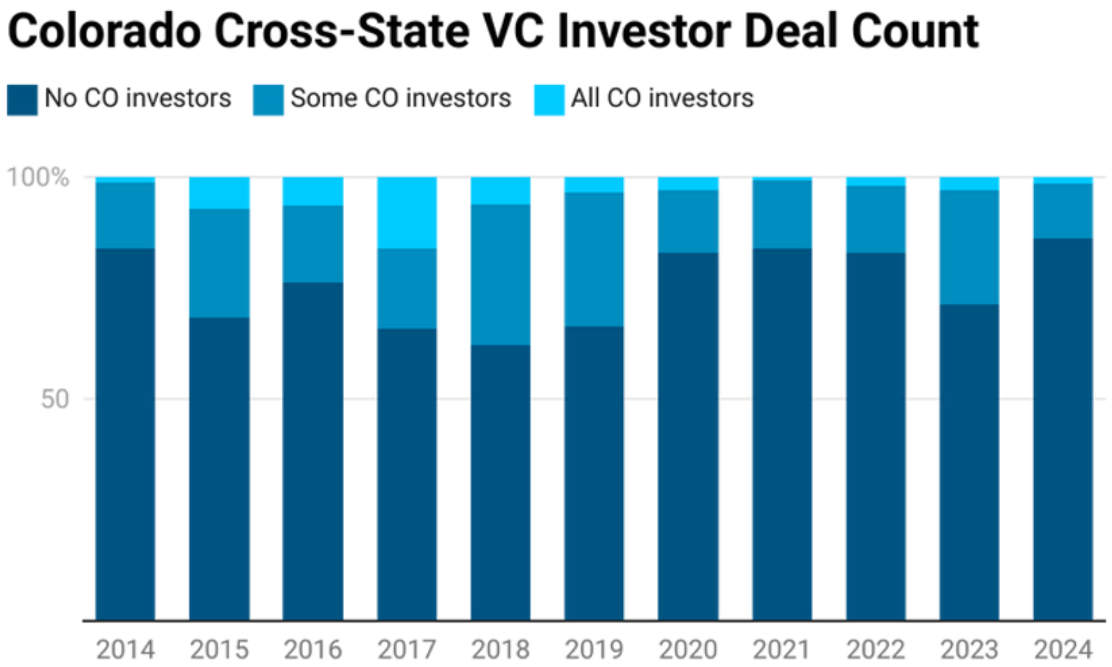
2023 Regional Funding Mix

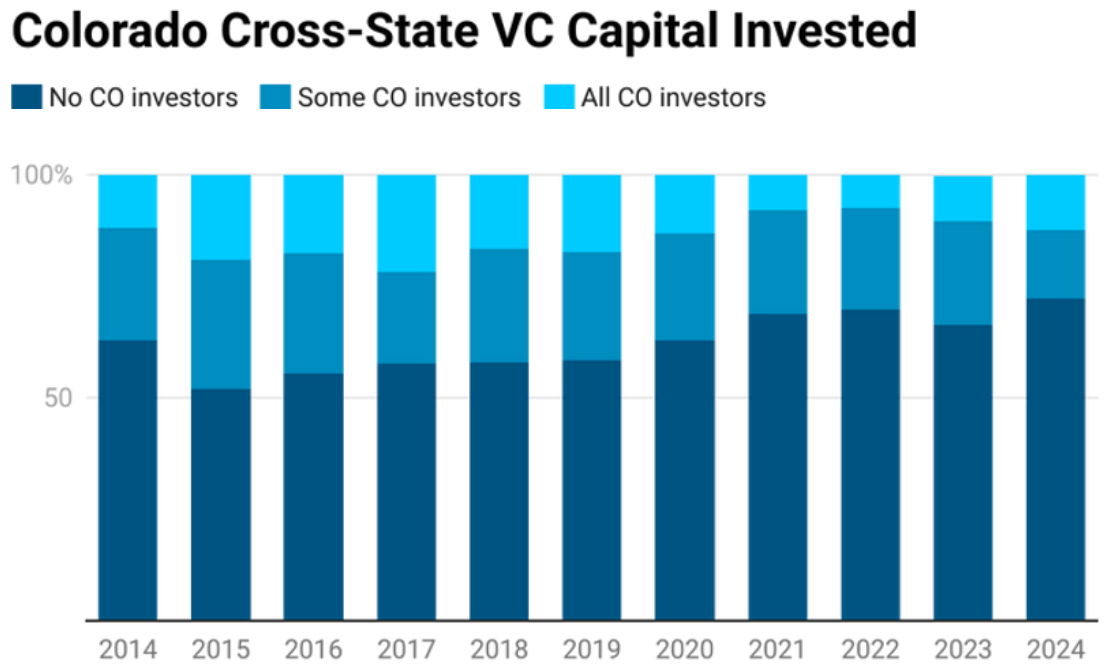


(Higher Education Research & Development) VC (Total Venture Captial Invested All Stages, All Verticals) SBIR/STTR (Federal Grants)

Data Source: State Science & Technology Institute Reports

Capital & Innovation – VC

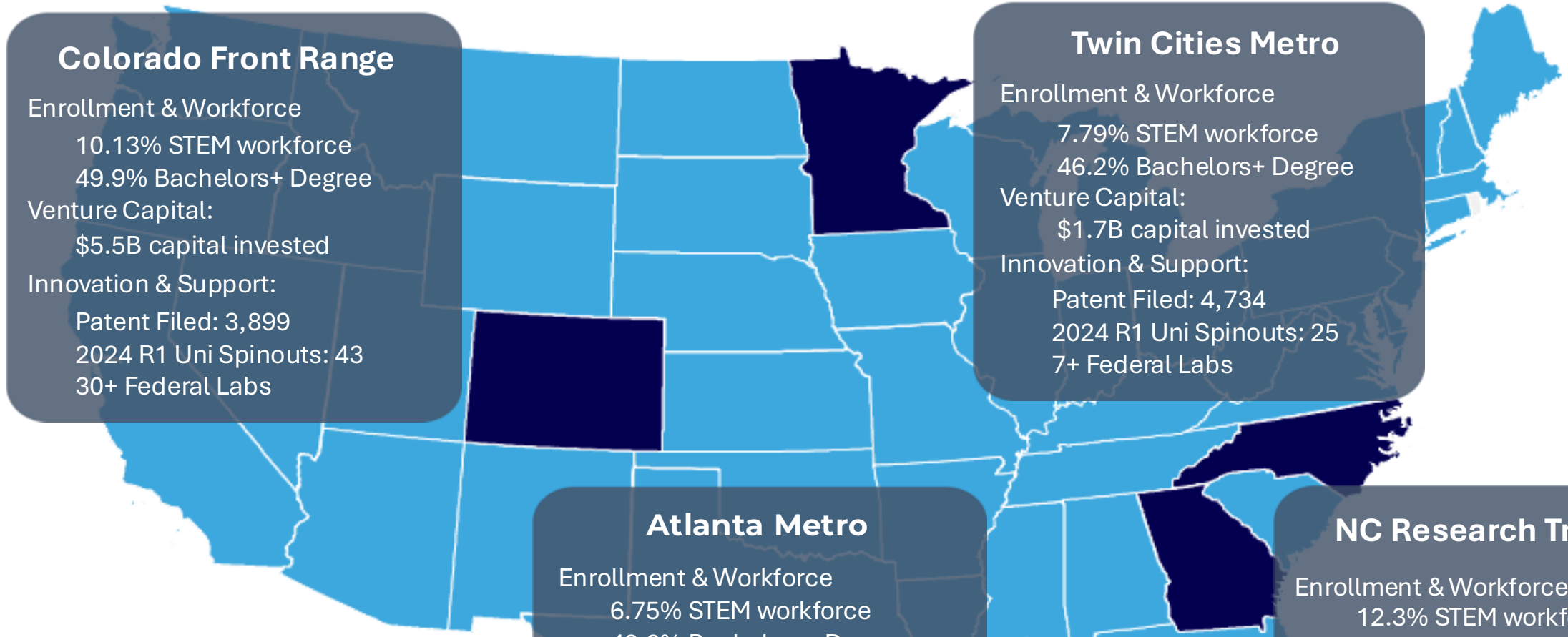




Colorado's strong venture capital funding numbers reflect a confidence from the private sector in our innovation ecosystem. Examining this support, it becomes clear that VC funding is predominately sourced from out-of-state investors. This reflects strong national interest in the state's startups, however, this reliance on external capital **limits Colorado's long-term economic benefits**. When these companies exit, the financial returns primarily flow to out-of-state investors, reducing the reinvestment potential within the local ecosystem.

Strengthening in-state investment is critical to ensure that Colorado retains the full economic value of its innovation and entrepreneurship. By expanding the capacity of Colorado-based venture funds and mobilizing local institutional capital, the state can capture more of the wealth created by its high-growth companies and recycle it into future generations of startups.

Data Source: PitchBook Data, Inc. Analysis as of March 2025.



Colorado Front Range

Enrollment & Workforce
- 10.13% STEM workforce
- 49.9% Bachelors+ Degree

Venture Capital:
- $5.5B capital invested

Innovation & Support:
- Patent Filed: 3,899
- 2024 R1 Uni Spinouts: 43
- 30+ Federal Labs

Twin Cities Metro

Enrollment & Workforce
- 7.79% STEM workforce
- 46.2% Bachelors+ Degree

Venture Capital:
- $1.7B capital invested

Innovation & Support:
- Patent Filed: 4,734
- 2024 R1 Uni Spinouts: 25
- 7+ Federal Labs

Atlanta Metro

Enrollment & Workforce
- 6.75% STEM workforce
- 42.6% Bachelors+ Degree

Venture Capital:
- $1.8B capital invested

Innovation & Support:
- Patent Filed: 3,365
- 2024 R1 Uni Spinouts: 25
- 20+ Federal Labs

NC Research Triangle

Enrollment & Workforce
- 12.3% STEM workforce
- 53.3% Bachelors+ Degree

Venture Capital:
- $3.6B capital invested

Innovation & Support:
- Patent Filed: 3,917
- 2024 R1 Uni Spinouts: 29
- 25+ Federal Labs

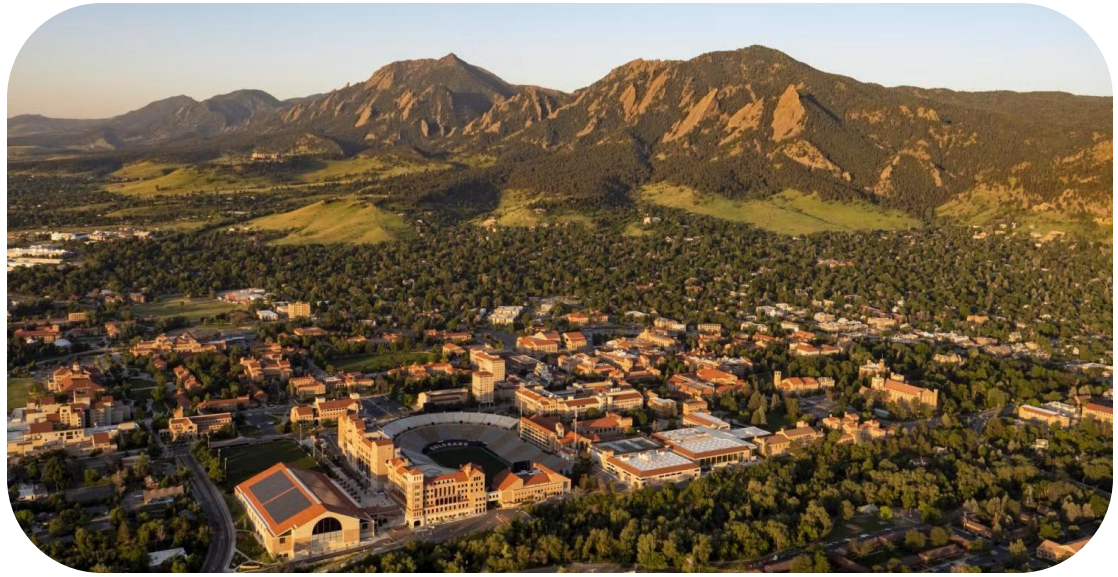
Venture capital funding reflects 2023, not adjusted per capita

Colorado's Innovation Economy

Colorado is primed to enter a period of **national leadership as a developing innovation ecosystem** that will bolster the United States' global competitiveness.

This momentum must be accompanied by **improved coordination among economic development agencies, higher education, and industry to promote sector diversity and increase resilience.** Such alignment would reduce the risk that the state's current workforce and enrollment strengths plateau. While we are outperforming peers in VC investment, it is crucial that we prioritize increasing in-state investment quantities.

Colorado Front Range



"Colorado has demonstrated one of the **strongest economies over the medium-term horizon.** Though, over the short term, Colorado's performance has slipped in the rankings, **demonstrating the difficulty in maintaining growth for a sustained period of time.**"

- 2025 Colorado Business Economic Outlook

Innospere

Innosphere advances regional ecosystems by scaling science and technology commercialization through strategic partnerships

TECH. SCIENCE. ACCELERATED.

10 Year Accelerator Program Metrics

$3.6B
Capital Raised

$300M
Revenue Generated

2,000+
Jobs Created

400+
Graduated Companies

Data Source: PitchBook Data, Inc. and Innosphere proprietary records. Analysis as of October 2025.