



**PSEO**  
COALITION

# **Working with PSEO**

## **Geographic Flows Data:**

### **Where Graduates Go and What It Means**

Summer Webinar Series  
July 28, 2026

# Introduction

# PSEO Coalition Summer 2026 Webinar Series

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**June 25**

What Stakeholders  
Really Want to Know:

Using PSEO Earnings Data  
to Answer Real Questions

**July 28**

Working with PSEO  
Geographic Flows Data:

Where Graduates Go and  
What It Means

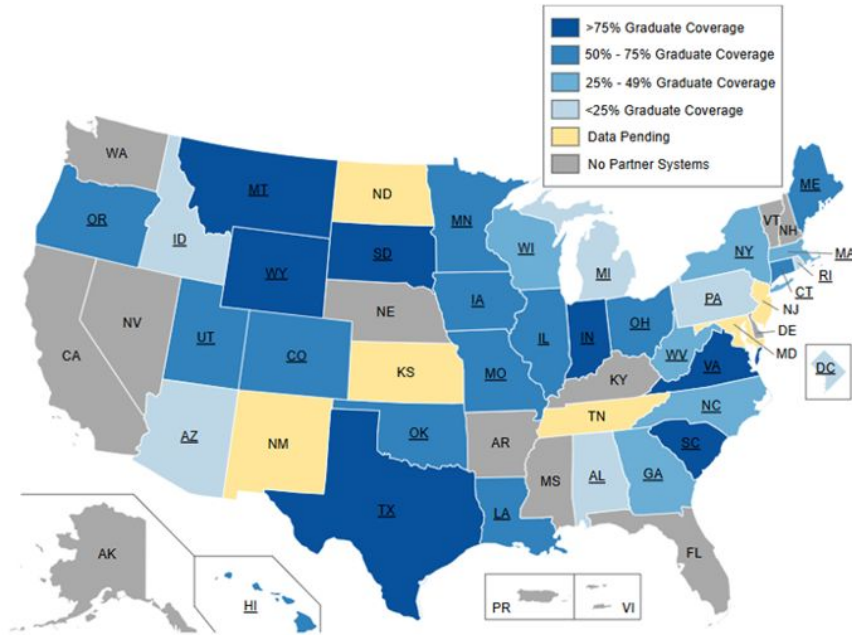
**August 27**

Working with PSEO  
Industry Data:

Understanding Where  
Graduates Land and Why It  
Matters



# Origins of the PSEO and PSEO Coalition

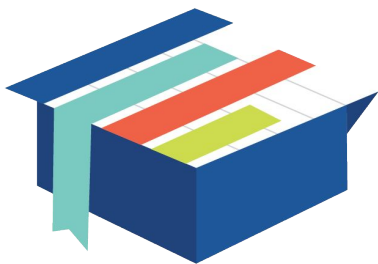


PSEO Coverage as of July 2026

- **Texas & Census Partnership:** Initial collaboration with the U.S. Census Bureau to link Texas educational workforce data, providing insights into graduate employment outcomes
- **State Expansion:** Grew from Texas to a national coalition, engaging multiple states in adopting PSEO frameworks and expanding access to employment data
  - From one institutional system (13 institutions) to over 39 states (more than 1000 institutions)
  - Current states exploring expansion of institutions sharing data
  - Additional states and entities currently exploring participation

# About the Coalition

The PSEO Coalition is a network of representatives from the institutions, college and university systems, and state agencies that partner with the U.S. Census to provide data for the PSEO project. Coalition members engage virtually and in-person to network and share ideas about methods to measure and share the outcomes of postsecondary education with decision makers of all types.



**PSEO**  
COALITION

**39+**

**Participating  
States**

**1000+**

**Institutions  
Represented**

# Presenters



**Christopher Peña, PhD**

Assistant Professor of the Practice, University of Denver  
Data Literacy Partner & Intern Supervisor, PSEO Coalition



**Gina Johnson, PhD**

Principal & Cofounder, Data EmpowerED Consulting  
Director, PSEO Coalition

# Learning Objectives

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By the end of this webinar, participants will be able to:

- Apply a structured framework to PSEO geographic flows data.
- Identify and navigate key limitations of flows data.
- Distinguish “how far” graduates go from “where specifically” they go.
- Contextualize institutional and state-level retention patterns.
- Communicate geographic findings responsibly.



# Framing the Question

# About PSEO Geographic Flows Data

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- Produced by U.S. Census Bureau.
- Measured 1, 5, and 10 years after graduation.
- Sourced from institutions and state UI wage records.
- Sliced by state, institution, degree level, program, and cohort.
- Reports number of students employed in-state or in another census division.

To learn more, check out the documentation:

[https://lehd.ces.census.gov/data/pseo\\_documentation.html](https://lehd.ces.census.gov/data/pseo_documentation.html)

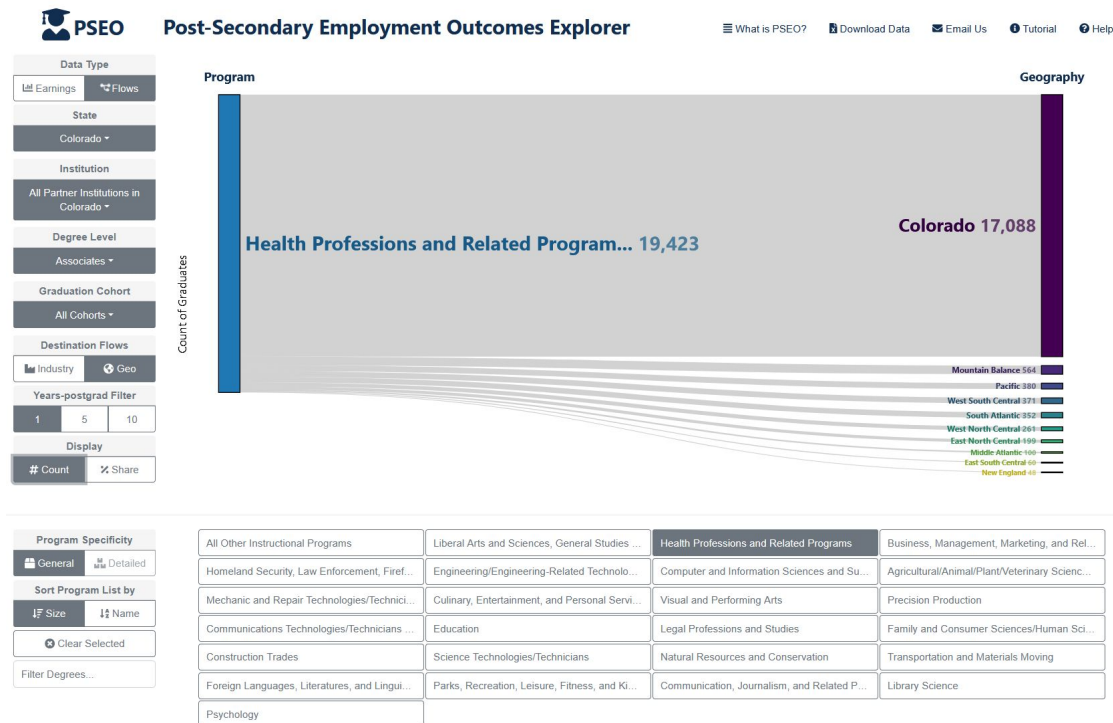


# Flows Data in the PSEO Explorer

Filters



Program



# Big Questions About Outcomes

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*Where do Health Professions graduates go after completing their program, and what does that tell us about regional talent pipelines, student mobility, and institutional reach?*

## Defining the Sample

- Associates degrees
- Health Professions graduates (CIP 51)
- Colorado as anchor state



# Before We Begin

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Before we make any decisions, we need to reframe the question analytically.

## Potential Areas for Analysis

- Does in-state retention hold steady or erode over time?
- Does program portability and licensure shape whether students leave?
- Does geography matter differently by state?



# Scoping Decision: Aggregation Level

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Which level(s) of aggregation should we use for the analysis?

## Decisions

- Use institution-level records for national pooled aggregates.
- Use state-rollup records for state ranking.
- Use state-rollup records for the anchor-state case study.

Remember that aggregations may themselves contain a “total” record!



# Scoping Decision: Geographic Granularity

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Which level(s) should we investigate for geographic placement?

## Decisions

- Graduates employed in the same state as the institution.
- Graduates employed in a different state in the same census division.
- Graduates employed in a different census division.



# Scoping Decision: Comparison Groups

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Which groups should we compare against to better understand Health Professions graduates?

## Decisions

- High credential portability – Business, Computer & Information Sciences
- Low credential portability – Education



# Guiding Questions

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1. How does in-state retention trend for Health Professions compared to other programs, including those with different portability profiles?
2. At Year 1, what's the full geographic split (in-state/same division/different division), and how does it vary by program?
3. How does Colorado compare to other states in retaining its own graduates, and where specifically do the ones who leave end up?



# Exploring the Data

# Data Management

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Python was used to prepare, analyze, and visualize the geographic flows data.

## U.S. Census Data

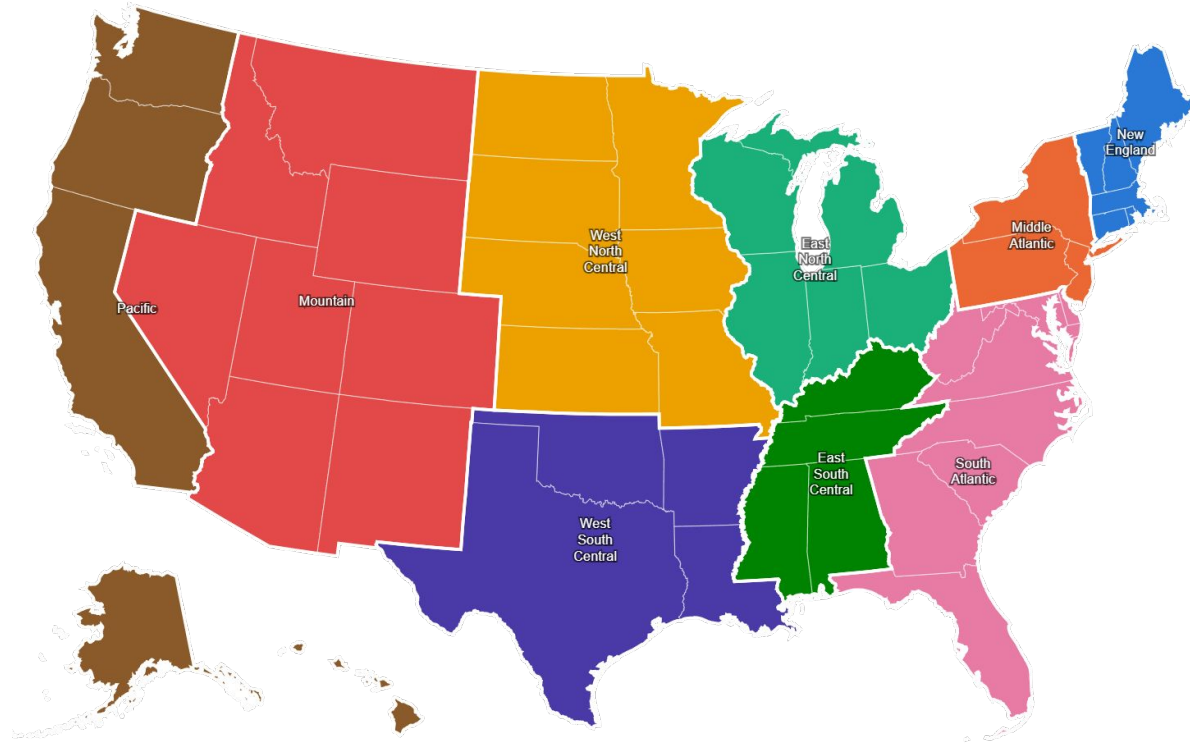
- Complete (national) PSEO geographic flows data
- List of CIP codes and labels
- List of institutions with names and locations

~42M raw rows □ ~369K after filtering: ~336K institution + ~33K state



# U.S. Census Divisions

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# Building the 3-Way Split

Geographic data are reported by  
**census division.**

For each division, there are two  
metrics available:

- `grads_emp`
- `grads_emp_instate`

The national level metrics are the  
sum of the division counts.

| geo_level | label_geo_level           | geography | label_geography             | y1_grads_emp | y1_grads_emp_instate |
|-----------|---------------------------|-----------|-----------------------------|--------------|----------------------|
| N         | National (50 States + DC) | 00        | National (50 States + DC)   | 19423        | 17088                |
| D         | Divisions                 | 1         | New England Division        | 48           | 0                    |
| D         | Divisions                 | 2         | Middle Atlantic Division    | 100          | 0                    |
| D         | Divisions                 | 3         | East North Central Division | 199          | 0                    |
| D         | Divisions                 | 4         | West North Central Division | 261          | 0                    |
| D         | Divisions                 | 5         | South Atlantic Division     | 352          | 0                    |
| D         | Divisions                 | 6         | East South Central Division | 60           | 0                    |
| D         | Divisions                 | 7         | West South Central Division | 371          | 0                    |
| D         | Divisions                 | 8         | Mountain Division           | 17652        | 17088                |
| D         | Divisions                 | 9         | Pacific Division            | 380          | 0                    |



# Building a Custom Census Division

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Census codes can be joined to federal shape files to produce polygons for choropleths and other map visualizations.

## Process Steps

Replace the census division record with in-state count with two new records:

- One “division” for the state alone
- One “division” for the balance of the census division

To learn more, check out the shape files:

<https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html>



# Analyzing the Data

# Q1 | The Game Plan

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## Analytical Goal

Establish the retention story: starting level, trajectory, durability, and whether portability might help explain the pattern.

## Proposed Visuals

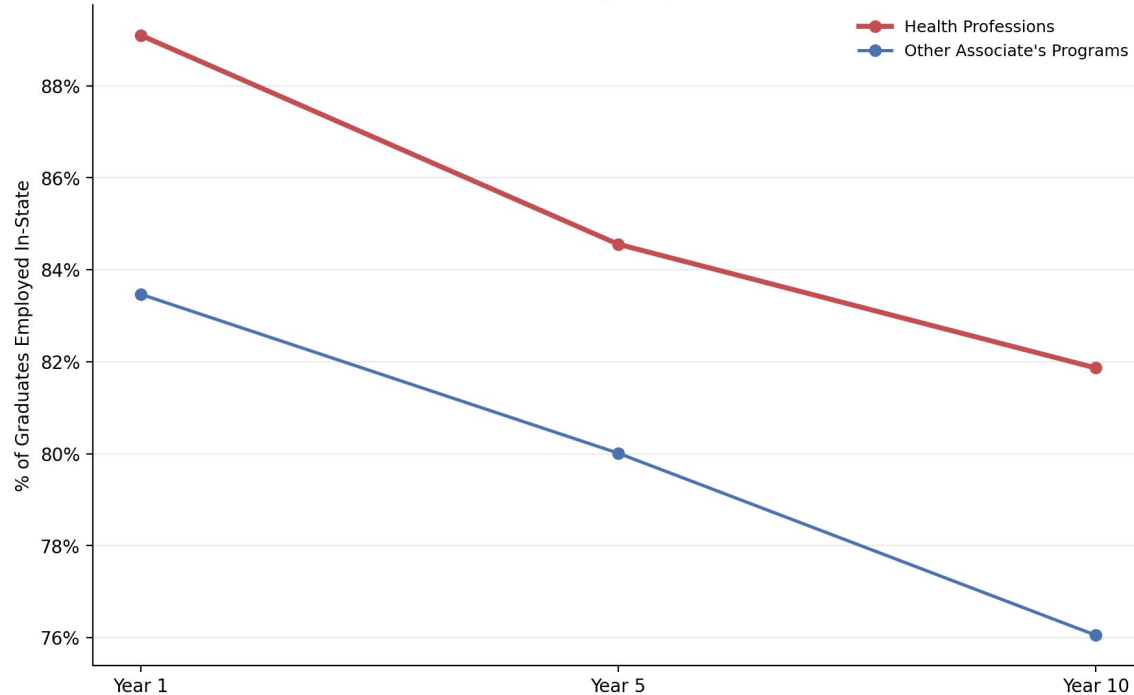
- Trajectory line of Health Professions vs. Other Programs
- Trajectory line of Health Professions vs. Comparison Programs



# Q1 | Retention Over Time vs. All Other Programs

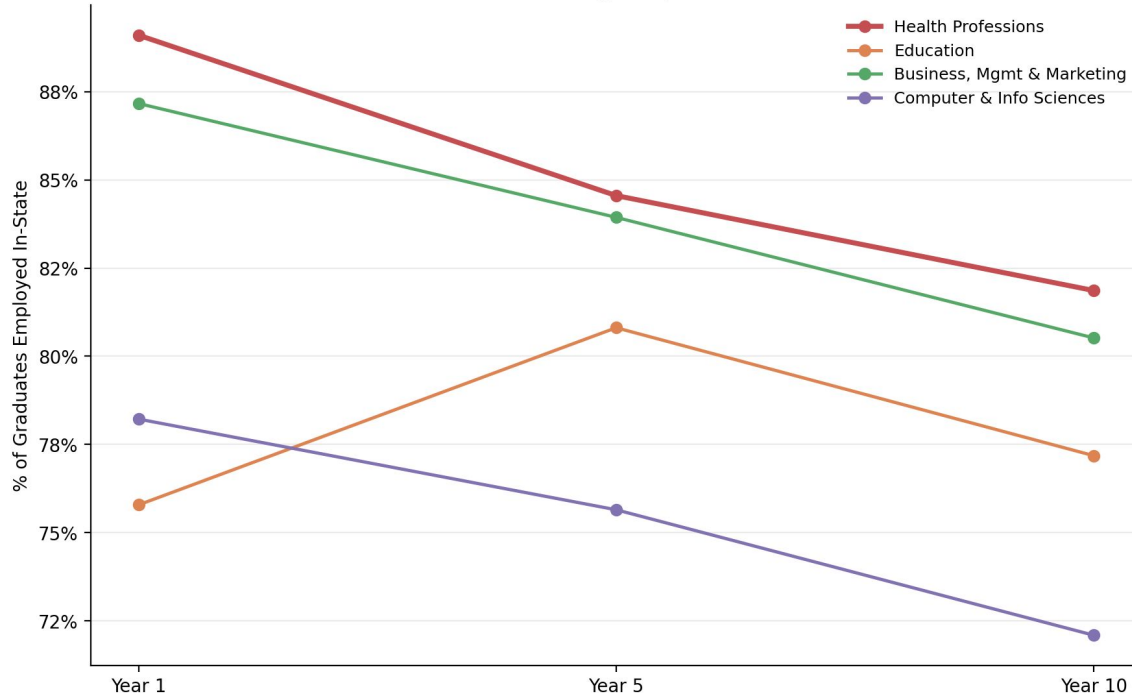
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**In-State Retention Over Time: Health Professions vs. Other Associate's Programs  
(Associate's Degrees, All Cohorts)**



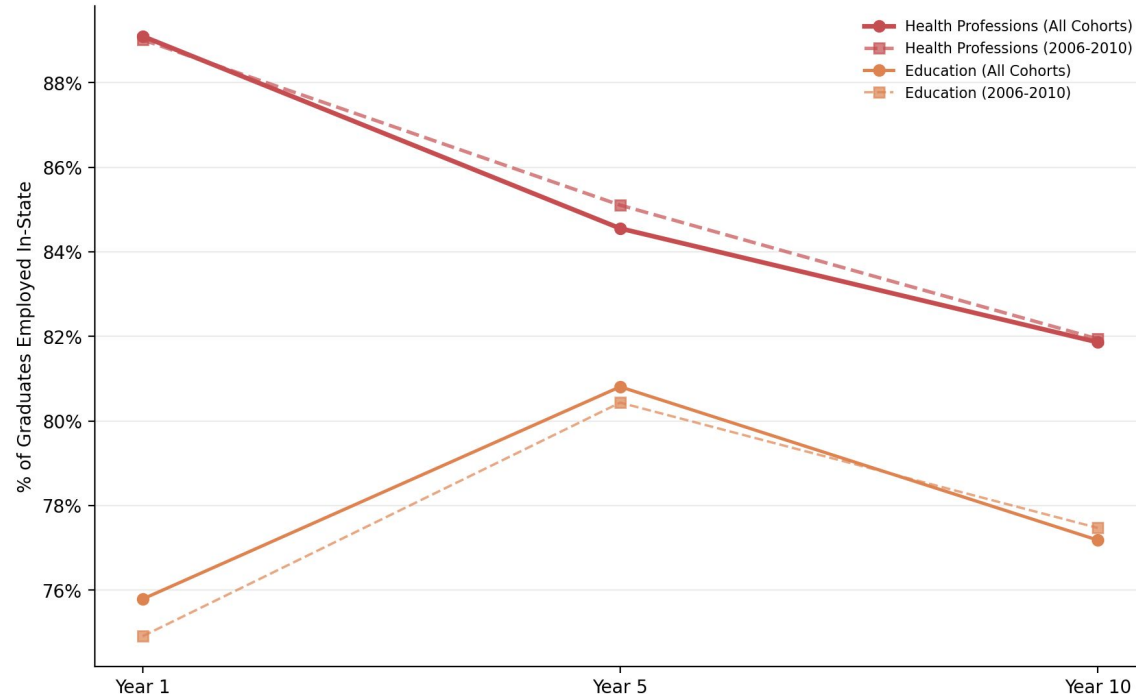
# Q1 | Retention Over Time vs. Comparison Programs

**In-State Retention Over Time: Health Professions vs. Comparison Programs  
(Associate's Degrees, All Cohorts)**



# Q1 | Robustness Check

**Robustness Check: All Cohorts vs. 2006-2010 Cohort**  
**Health Professions vs. Education**



## Q2 | The Game Plan

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### Analytical Goal

Understand the full geography, not just the in-state headline.

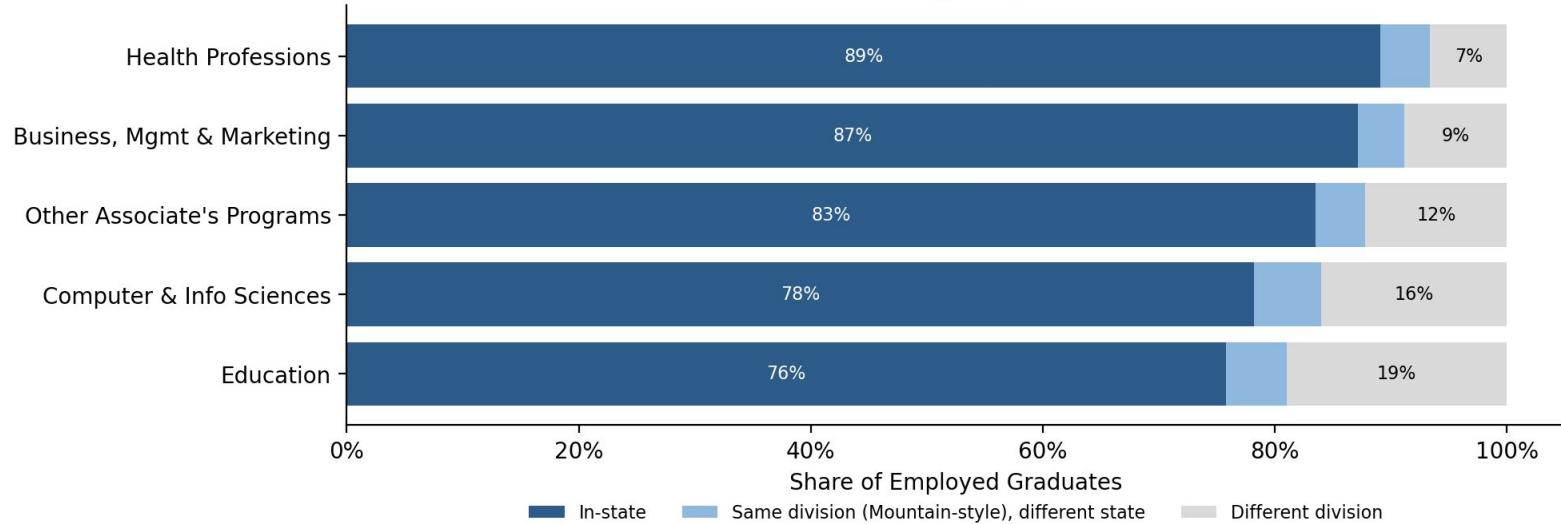
### Proposed Visuals

- Stacked bar chart showing break-out by destination after completion.



# Q2 | Full Geographic Split

**Year-1 Geographic Split: Health Professions vs. Other Groups  
(Associate's Degrees, All Cohorts)**



## Q3 | The Game Plan

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### Analytical Goal

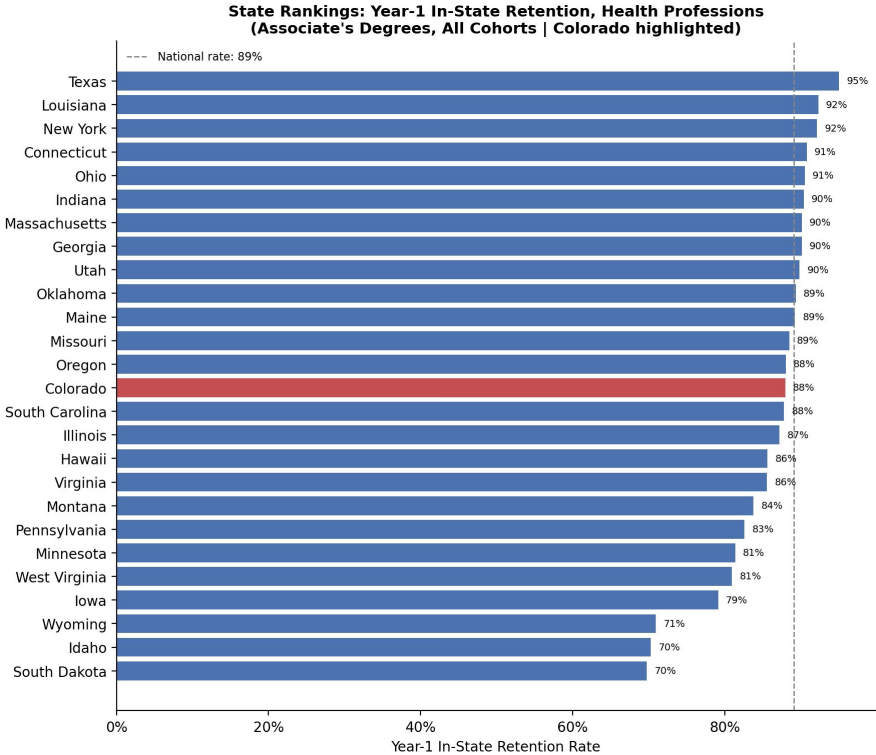
Move from the national aggregate to a state-by-state view.

### Proposed Visuals

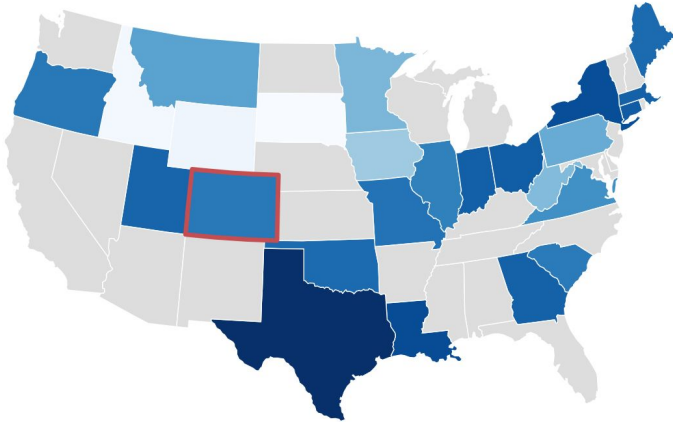
- Bar chart showing in-state retention at 1-year by state.
- Choropleth showing in-state retention at 1-year by state.
- Choropleth showing in-state retention at 1-year for Colorado.



# Q3 | Same Data, Different View



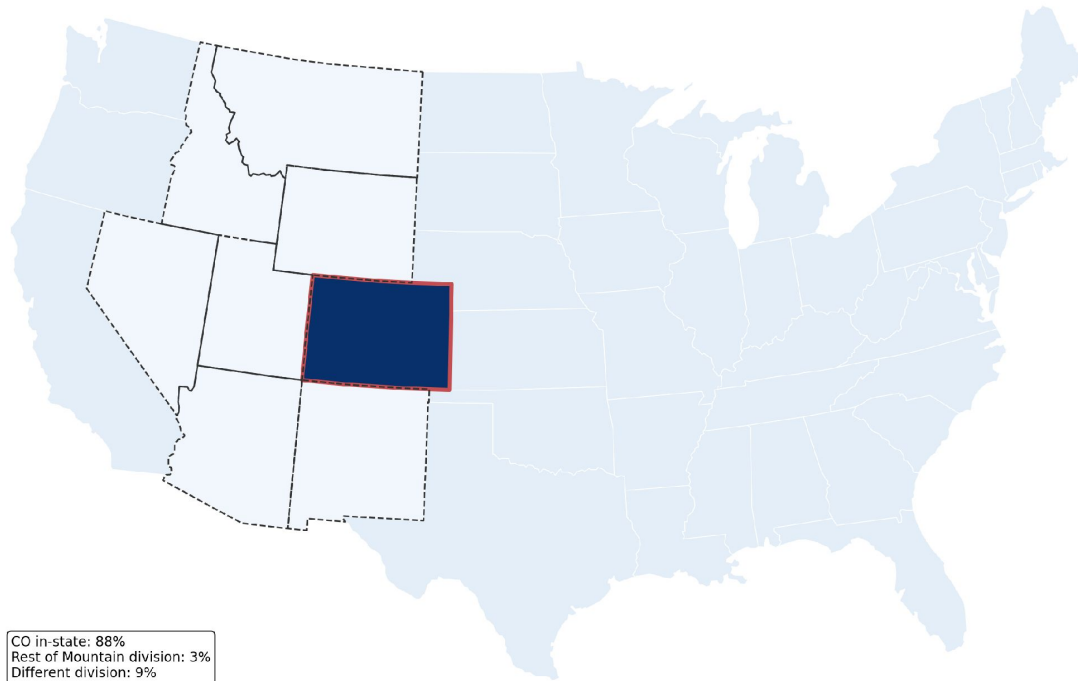
**Geographic Distribution: Year-1 In-State Retention, Health Professions**  
(Associate's Degrees, All Cohorts | Colorado outlined)



# Q3 | The Colorado Split

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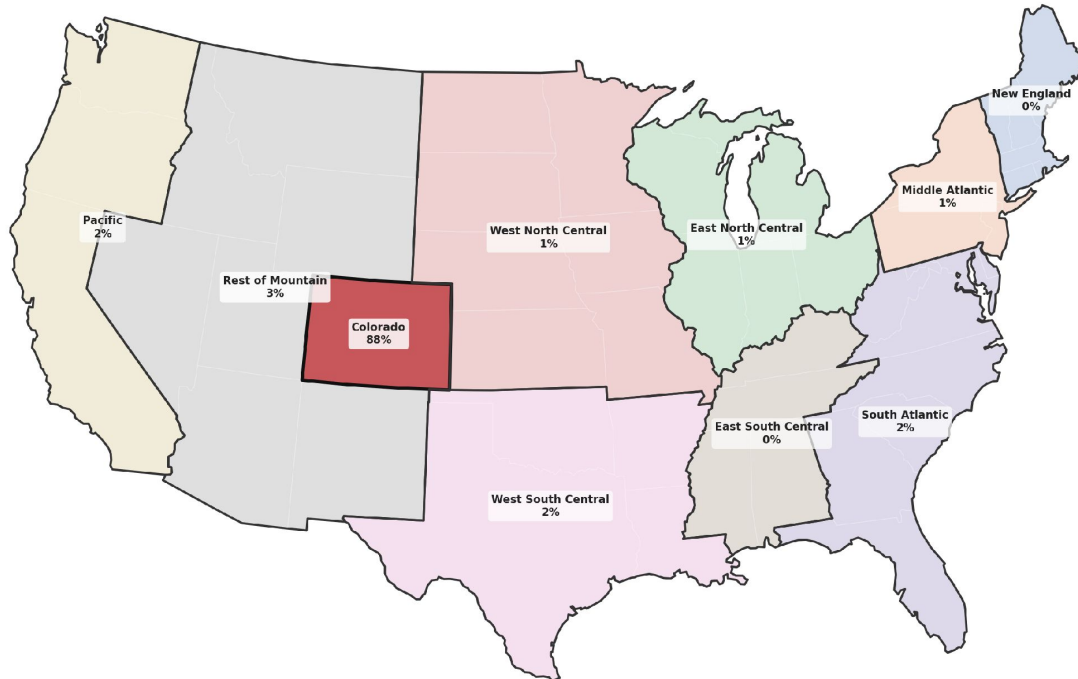
**Colorado Health Professions Graduates: Where Do They Work?**  
(Associate's Degrees, Year 1, All Cohorts)



# Q3 | Digging Deeper Into the Split

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Colorado Health Professions Graduates: Which Census Division?  
(Associate's Degrees, Year 1, All Cohorts)



# So ... What Did We Learn?

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## Headline Results

- Health professions graduate stay in-state at a consistently higher rate than other programs, and the gap barely erodes over 10 years.
- When graduates do leave, they tend to leave the whole Census division, not just cross to a nearby state.
- Colorado is solidly mid-tier (14<sup>th</sup> out of 26). Texas is the national leader.
- Colorado's own "leavers" show a small pull toward the Pacific and West South Central divisions.



# The Bottom Line

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*Where do graduates go, and what does it tell us?*

Health Professions graduates are meaningfully more likely than their peers to stay and work in the state that trained them, and that pattern holds up over a decade.



# Closing Thoughts

# The Analyst's Checklist

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We had to make a variety of choices to answer our initial questions.

## Remember:

- Scoping decisions shape everything!
- Check coverage before ranking states.
- Don't dismiss an odd pattern as noise.
- A single "different division" bucket can hide real destination patterns.



# What PSEO Geographic Flows Data Can Do

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- Track where cohorts are employed at 1/5/10 years.
- Distinguish in-state from same-division from different-division destinations.
- Compare behavior consistently across institutions, states, and programs.
- Connect geographic mobility to program type without individual-level data.



# What PSEO Geographic Flows Data Cannot Do

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- Tell us *why* someone moved.
- Separate voluntary from involuntary mobility.
- Resolve full state-to-state destination detail.
- Tell us what students earned once they go to their destination.



Questions?

# Next up in our webinar series...

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## Working with PSEO Industry Data: Understanding Where Graduates Land and Why It Matters

Thursday, August 27, 2026 | 3 – 4 p.m. ET

Industry placement data tells a compelling story about the connection between postsecondary programs and the workforce. This webinar takes a hands-on look at the industry component of PSEO data, walking through real-world examples and sharing practical tips and techniques for understanding employment patterns and program-to-labor-market alignment. We'll also show how outside data can add useful context to industry analysis, while unpacking the nuances that shape how these data should be interpreted and applied. This is well-suited for institutional researchers, program evaluators, and workforce analysts looking to connect postsecondary outcomes to the broader labor market landscape.

Register



# 2026 Showcase

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## Advancing Research and Practice with PSEO Data

**Tuesday, August 18, 2026 | 1-3 p.m. ET**

The 2026 PSEO Coalition Showcase will highlight the innovative ways states, systems, institutions, and researchers are using Postsecondary Employment Outcomes (PSEO) data to answer pressing questions about student outcomes, workforce alignment, and postsecondary value.

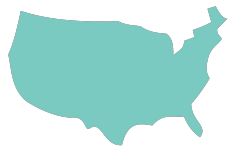
Featured projects include work from the Arizona Board of Regents, University of North Carolina System, University of Illinois System, Dallas College Research Institute, New Jersey Office of the Secretary of Higher Education, Scholarship America, and PSEO Coalition partners.

Register



# PSEO Resources

# PSEO Resources



## PSEO Coalition

[pseocoalition.org](https://pseocoalition.org)



## Resource Library

[pseocoalition.org/resource-library/](https://pseocoalition.org/resource-library/)



## PSEO Explorer

[lehd.ces.census.gov/applications/pseo](https://lehd.ces.census.gov/applications/pseo)



## PSEO Datasets

[lehd.ces.census.gov/data/pseo\\_experimental.html](https://lehd.ces.census.gov/data/pseo_experimental.html)

