

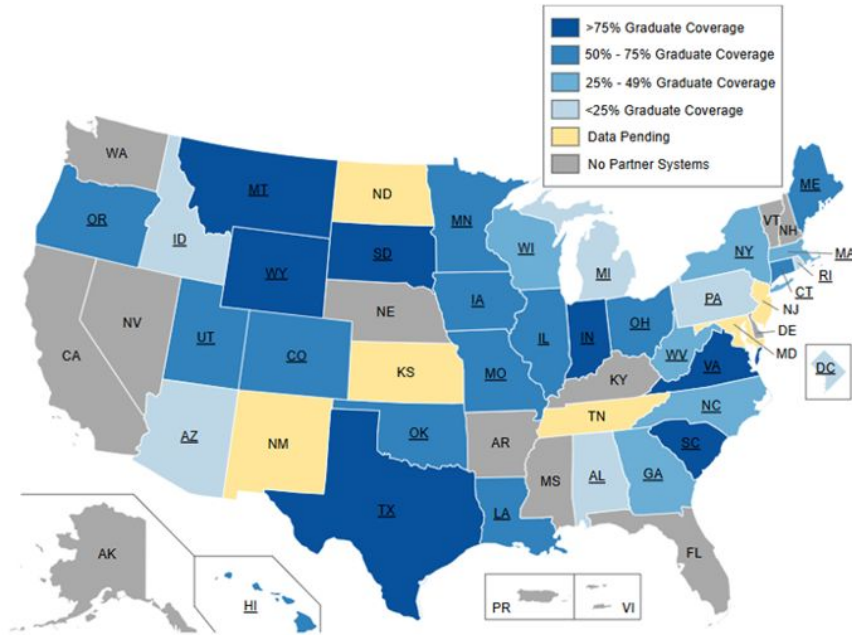


PSEO
COALITION

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

Summer Webinar Series
August 27, 2026

Origins of the PSEO and PSEO Coalition

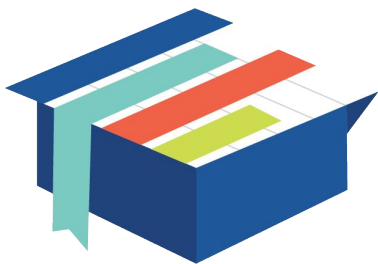


PSEO Coverage as of July 2026

- **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

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

- Apply a structured framework to PSEO industry data.
- Identify and navigate key limitations of industry data.
- Distribution industry concentration from simply “top industry” rankings.
- Connect industry outcomes with geographic findings.
- Communicate industry findings responsibly and ethically.



Framing the Question

About PSEO Industry Flows Data

- 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 by NAICS sector.

To learn more, check out the documentation:

https://lehd.ces.census.gov/data/pseo_documentation.html

<https://www.census.gov/naics/?58967?yearbck=2022>

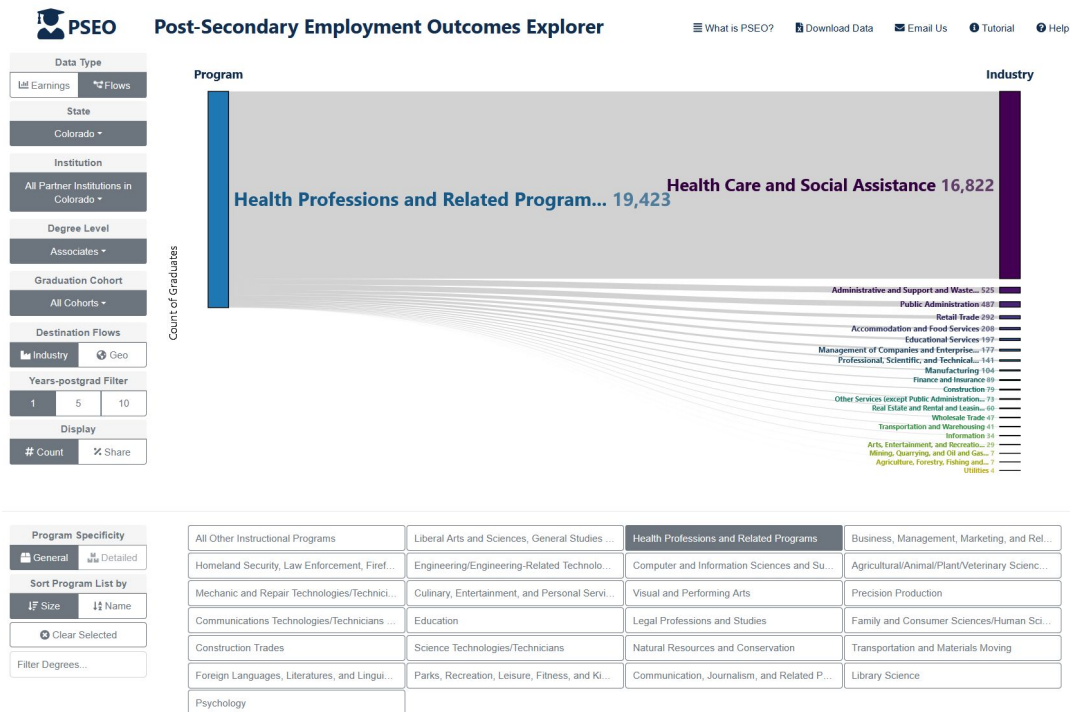


Industry Data in the PSEO Explorer

Filters



Program



Big Questions About Outcomes

What fields do Health Professions graduates work in, and what does that tell us about labor-market alignment and program-to-industry pipelines?

Defining the Sample

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



Before We Begin

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

Potential Areas for Analysis

- Does one industry dominate, or is employment spread across many?
- Does staying in-state vs. leaving change which industries graduates land in?
- Does Colorado's industry story look like the national one?



Scoping Decision: Aggregation Level

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

Decisions

- Use institution-level records for national pooled aggregates.
- Use state-rollups for the Colorado case study and cross-state comparisons.

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



Scoping Decision: Comparison Groups

Which groups should we compare against to better understand the industry concentration of Health Professions graduates?

Decisions

- Health Professions – expected to be strongly concentrated in one sector.
- Business – expected to be diffuse.
- Education and Computer Science – expected to be somewhat diffuse.



Guiding Questions

1. What fields do Health Professions graduates work in, and how concentrated is that compared to other programs?
2. Does the industry someone works in relate to whether they stayed in-state or left after completing their program?
3. Does Colorado's industry story match national findings?



Exploring the Data

Data Management

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

U.S. Census Data

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

~42M raw rows □ ~7M rows + ~370K all-industry rows after filtering



Building the Industry Breakdown

Industry	Industry Label	Y1 Grads Emp	Y1 Grads Emp Instate
62	Health Care and Social Assistance	16,822	15,213
56	Administrative & Support/Waste Mgmt.	525	434
92	Public Administration	487	404
44-45	Retail Trade	292	168
72	Accommodation and Food Services	208	143



Industry and Geography

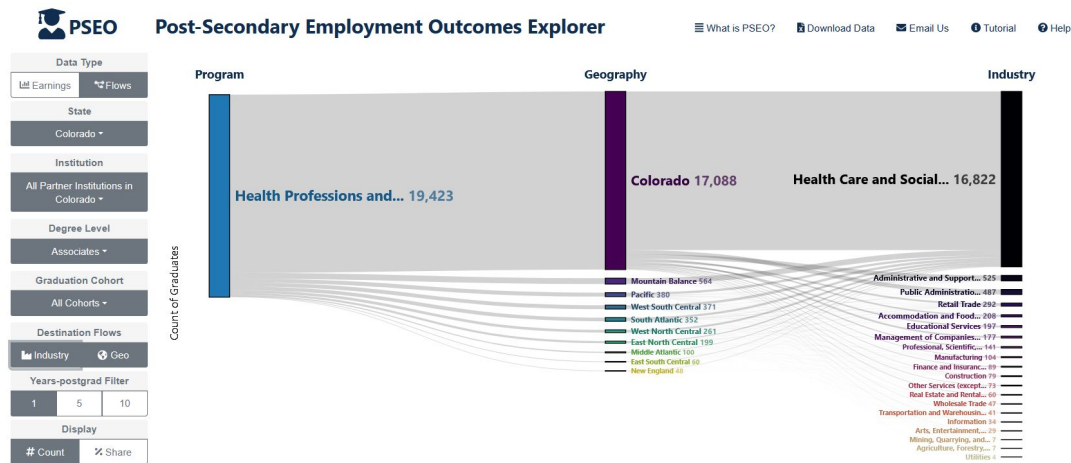
With the PSEO Explorer and the **raw CSV file**, you can cross industry with:

- Census division
- In-state and out-of-state employment

While crossing the data opens new opportunities for analysis, it becomes more complex to manage the records and files.



Crossing Flows in the PSEO Explorer



The order in which you select a Destination Flow determines which one appears first in the ribbon.

Program Specificity	All Other Instructional Programs	Agricultural/Animal/Plant/Veterinary Scienc...	Business, Management, Marketing, and Rel...	Communication, Journalism, and Related P...
General Detailed	Communications Technologies/Technicians ...	Computer and Information Sciences and Su...	Construction Trades	Culinary, Entertainment, and Personal Servi...
Sort Program List by	Education	Engineering/Engineering-Related Technolo...	Family and Consumer Sciences/Human Sci...	Foreign Languages, Literatures, and Lingui...
IF Size Name	Health Professions and Related Programs	Homeland Security, Law Enforcement, Fire...	Legal Professions and Studies	Liberal Arts and Sciences, General Studies ...
Clear Selected	Library Science	Mechanic and Repair Technologies/Techni...	Natural Resources and Conservation	Parks, Recreation, Leisure, Fitness, and Ki...
Filter Degrees...	Precision Production	Psychology	Science Technologies/Technicians	Transportation and Materials Moving
	Visual and Performing Arts			



Analyzing the Data

Q1 | The Game Plan

Analytical Goal

Establish the industry landscape: which industries absorb Health Professions graduates, how concentrated that is, and whether Colorado looks like the U.S.

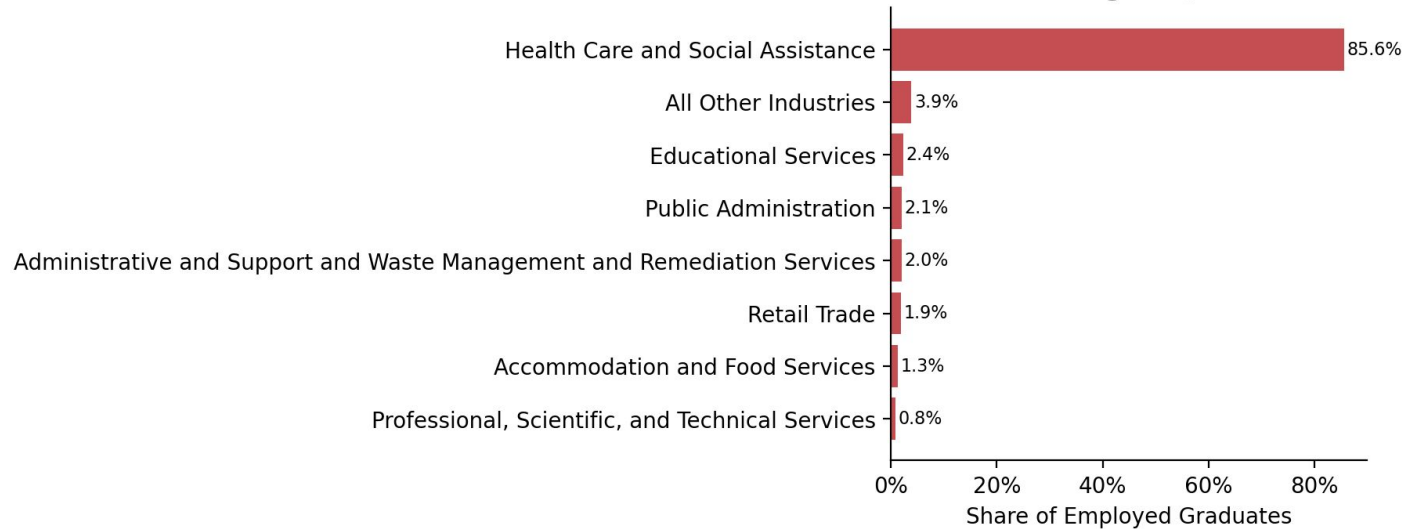
Proposed Visuals

- Top-industries bar chart
- Concentration (HHI) comparison across programs
- Colorado vs. Rest-of-U.S. comparison with a formal statistical test



Q1 | Top Industries Nationally

**Top Industries Nationally: Health Professions Grads at Year 1
(Associate's Degrees, All Cohorts)**



Q1 | Top Industries Nationally

Year 1 (n=792,691 employed grads) -- top 5 industries:

Health Care and Social Assistance	85.6%	
Educational Services	2.4%	
Public Administration	2.1%	
Administrative and Support and Waste Management and Remediation Services	2.0%	
Retail Trade	1.9%	

Year 5 (n=558,452 employed grads) -- top 5 industries:

Health Care and Social Assistance	82.1%	
Educational Services	3.7%	
Public Administration	2.7%	
Administrative and Support and Waste Management and Remediation Services	2.7%	
Retail Trade	1.6%	

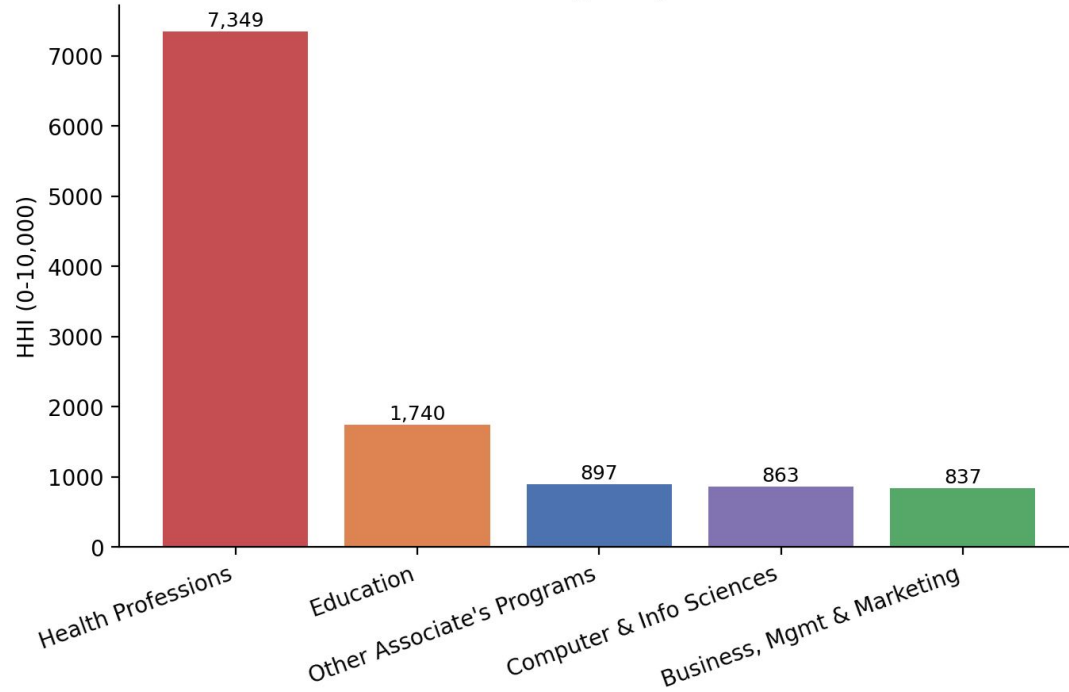
Year 10 (n=288,580 employed grads) -- top 5 industries:

Health Care and Social Assistance	80.1%	
Educational Services	4.7%	
Public Administration	2.9%	
Administrative and Support and Waste Management and Remediation Services	2.5%	
Finance and Insurance	1.7%	

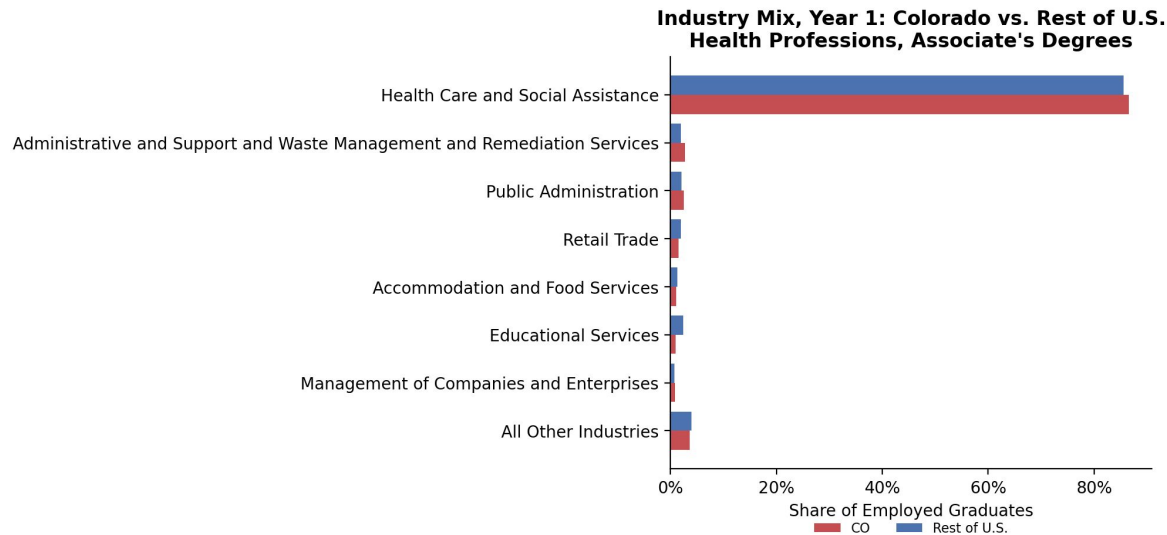


Q1 | Industry Concentration by Program

**Industry Concentration (Year 1): Health Professions vs. Comparison Groups
(Associate's Degrees, All Cohorts)**



Q1 | Colorado vs. the Rest of the Country



Chi-squared test of homogeneity: CO vs. Rest of U.S. industry mix (Health Professions, Year 1)

$\chi^2 = 349.2$, $\text{dof} = 19$, $p\text{-value} = 1.47\text{e-}62$

Cramer's $V = 0.021$ (0 = no association, 1 = perfect association)

$n = 792,691$ employed grads across 20 industry categories



Q2 | The Game Plan

Analytical Goal

Understand whether the industry a graduate works in is related to whether they stayed in Colorado or left.

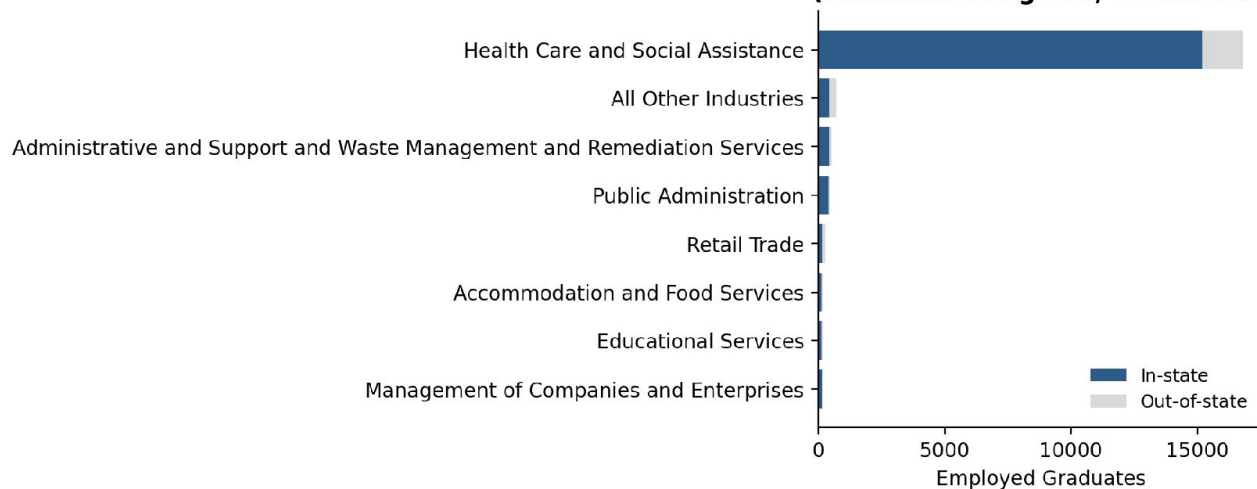
Proposed Visuals

- In-state vs. out-of-state stacked bar
- Concentration trend over time
- In-state concentration compared across programs



Q2 | In-State vs. Out-of-State Industries

**Colorado Health Professions Grads, Year 1: In-State vs. Out-of-State by Industry
(Associate's Degrees, All Cohorts)**



Q2 | In-State vs. Out-of-State Industries

Top 5 industries among in-state stayers:

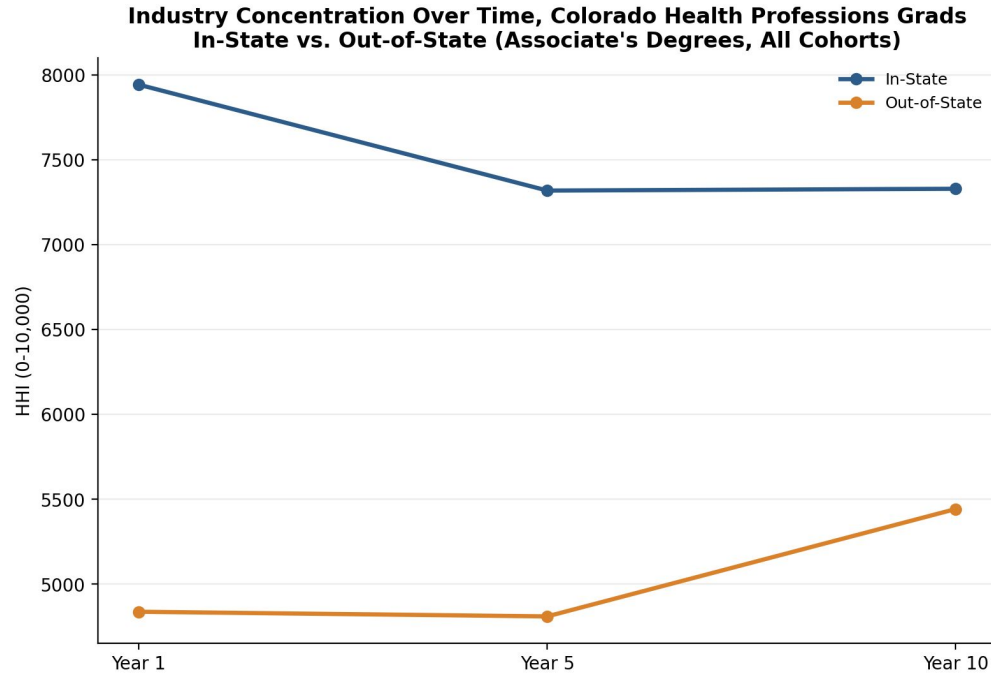
Health Care and Social Assistance	15,213 grads	
Administrative and Support and Waste Management and Remediation Services		431 grads
Public Administration	404 grads	
Retail Trade	168 grads	
Management of Companies and Enterprises	159 grads	

Top 5 industries among out-of-state leavers:

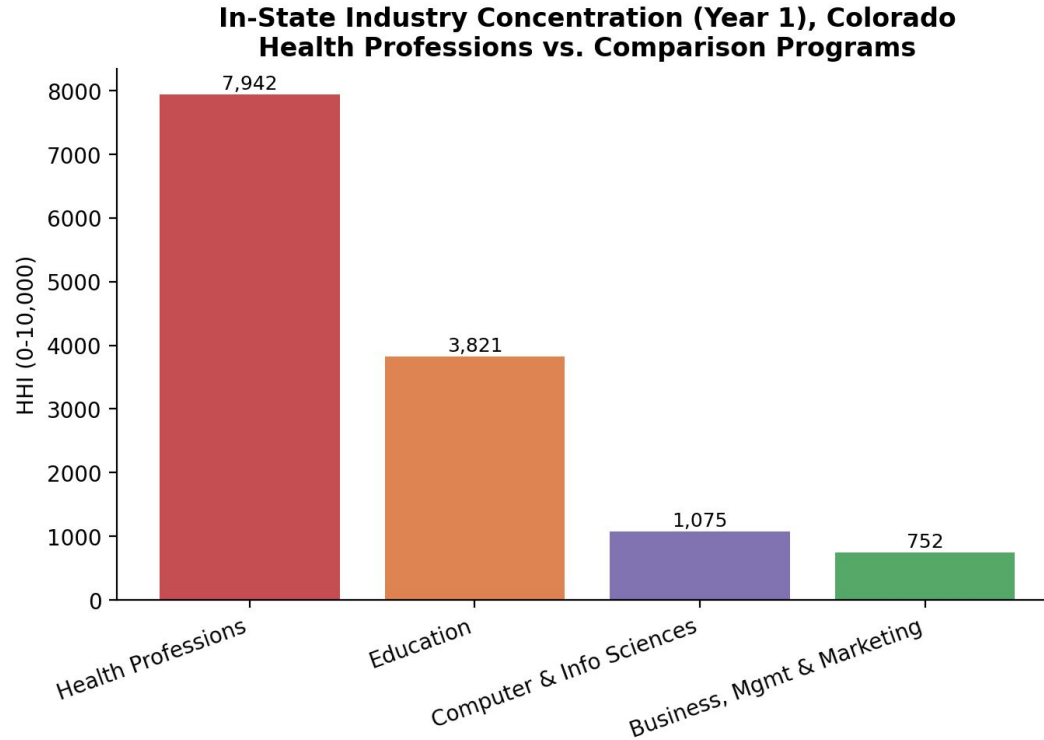
Health Care and Social Assistance	1,609 grads	
Retail Trade	124 grads	
Administrative and Support and Waste Management and Remediation Services		94 grads
Public Administration	83 grads	
Accommodation and Food Services	65 grads	



Q2 | Concentration Over Time



Q2 | In-State Concentration by Program



Q3 | The Game Plan

Analytical Goal

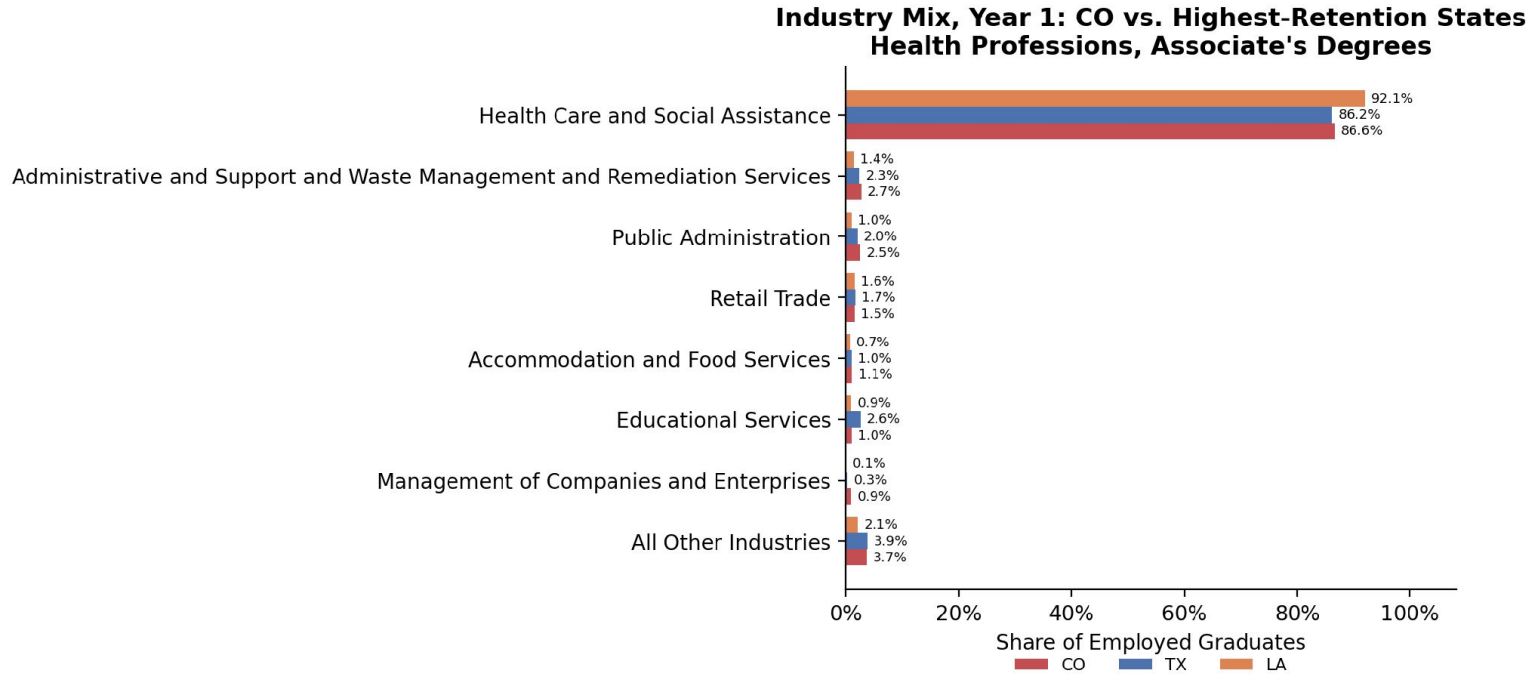
Move from Colorado case study to a cross-state view.

Proposed Visuals

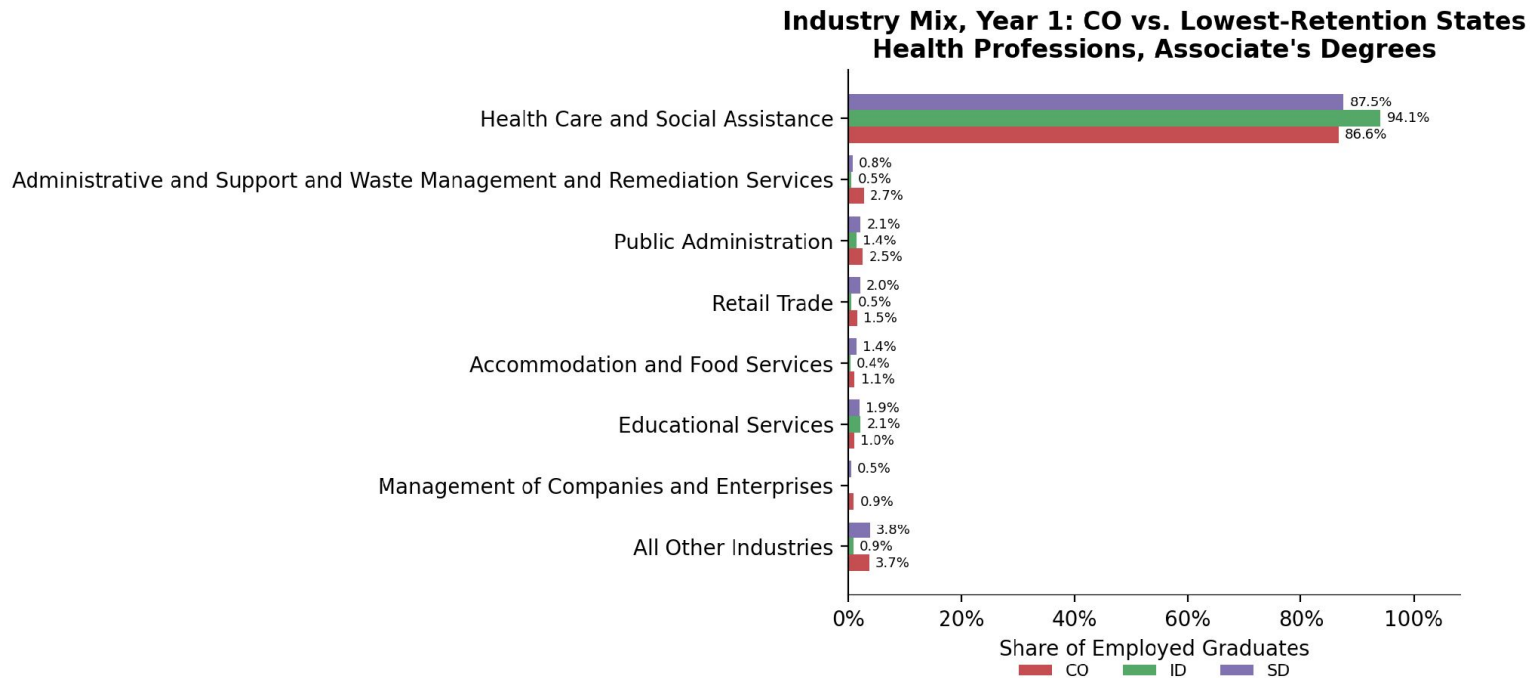
- Colorado vs. highest-retention states
- Colorado vs. lowest-retention states
- Retention vs. concentration scatter across all states



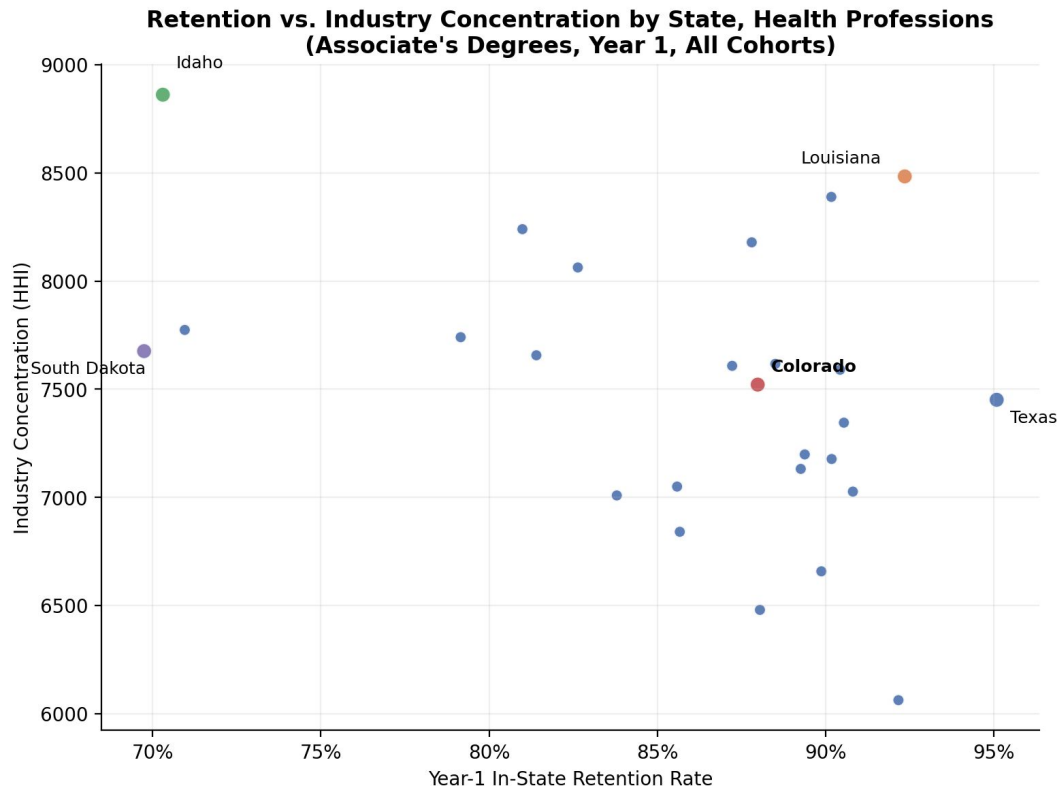
Q3 | Colorado vs. Highest Retention States



Q3 | Colorado vs. Lowest-Retention States



Q3 | Does Concentration Track with Retention?



Q3 | Does Concentration Track with Retention?

Largest industry-mix divergence from CO: LA (chi2 = 518.9)

Per-industry two-proportion z-test, CO vs. LA (top 8 by |z|, positive z = higher share in CO):

	industry	CO_pct	LA_pct	z	p_value
	Health Care and Social Assistance	86.61	92.07	-17.11	0.00
	Management of Companies and Enterprises	0.91	0.10	11.00	0.00
	Public Administration	2.51	1.04	10.73	0.00
Administrative and Support and Waste Management and Remediation Services		2.70	1.40	8.88	0.00
	Real Estate and Rental and Leasing	0.31	0.03	6.59	0.00
	Construction	0.41	0.14	5.00	0.00
	Manufacturing	0.54	0.23	4.78	0.00
	Arts, Entertainment, and Recreation	0.15	0.37	-4.27	0.00



So ... What Did We Learn?

Headline Results

- Health Care and Social Assistance absorbs most Health Professions graduates nationally (85.6% at Year 1), far more concentrated than any comparison program.
- That concentration does not change much with distance. Graduates who leave Colorado still work primarily in health care somewhere else.
- Colorado's industry mix is statistically distinguishable from the rest of the country, but not meaningfully different.
- Retention rate and industry concentration don't move together across states.



The Bottom Line

What fields do Health Professions graduates work in?

Health Professions graduates mostly work in health care, whether they stay in Colorado or leave, and regardless of how their state's retention rate compares nationally. For this field, geography barely moves the industry outcome.



Closing Thoughts

The Analyst's Checklist

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

Remember:

- Validate assumptions from a small sample against the PSEO Explorer.
- Large administrative files may need chunked, low-memory loading.
- A statistically significant result isn't automatically a meaningful one.



What PSEO Industry Flows Data Can Do

- Show which industries absorb graduates 1, 5, and 10 years after graduation.
- Compare industry concentration across programs and states.
- Connect industry outcomes to in-state/out-of-state employment.



What PSEO Industry Flows Data Cannot Do

- Tell us *why* a graduate ended up in a particular industry.
- Tell us the job a graduate ended up in (position).
- Offer finer-than-NAICS sector industry detail.
- Describe earnings of graduates who landed in a particular industry.



Questions?

Summer Webinar Series Survey

Let us know what you think!

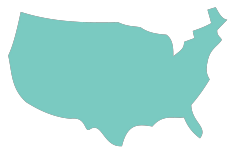
- What worked well?
- What could we do better?
- What would you like to learn more about?

<https://form.jotform.com/262374546768168>



PSEO Resources

PSEO Resources



PSEO Coalition

pseocoalition.org



Resource Library

pseocoalition.org/resource-library/



PSEO Explorer

lehd.ces.census.gov/applications/pseo



PSEO Datasets

lehd.ces.census.gov/data/pseo_experimental.html

