

Where Short-Term Credentials Lead:

Methodology

Definitions, filters, and design choices behind the state certificate portfolio analysis

This note documents every definition, filter, and design choice in the analysis published at opportunitydata.org/short-term-credentials-by-state.html, in execution order. Each certificate field is scored on two thresholds, an earnings level and an earnings slope, and every state's certificate completions are weighted across the four resulting buckets. A fully reproducible pipeline, with checksummed raw inputs and byte-stable outputs, accompanies the analysis.

1. Universe of credentials

Completions are [IPEDS](#) 2023-24 awards (C2024_A, revised file), joined to the HD2024 institutional directory for the awarding institution's state. Filters, in order: first majors only; the grand-total CIP code 99 dropped; sub-associate certificates only (award levels 20, under 12 weeks; 21, 12 weeks to under 1 year; and 2, 1 to under 2 years); eleven academic and transfer CIP families dropped (05, 16, 23, 24, 26, 27, 38, 40, 42, 45, 54), which hold 13 percent of sub-associate certificates and are dominated by 1-2 year general-studies transfer awards; territories excluded from all aggregates. The occupational universe is 1,045,861 certificates. CIP 30 (multidisciplinary) is kept: it mixes occupational fields with academic ones and is 0.8 percent of volume. A variant including the academic families is published alongside the main results.

IPEDS reports every completion in two categories, men and women (dictionary labels: Grand total men, Grand total women); the two sum to the total in every row of the 2023-24 file. Students an institution cannot classify are allocated into the two categories under IPEDS reporting instructions.

2. Duration bands and the Workforce Pell window

The Workforce Pell window (150 to 599 clock hours, 8 to 15 weeks; [final rule of May 19, 2026](#)) straddles the IPEDS bands rather than matching them: it excludes the shortest programs in the under-12-week band, covers the short end of the 12-week-to-one-year band, and excludes 1-to-2-year certificates as delivered, though institutions can resequence longer programs so a first module qualifies. All results are therefore reported by duration band, and no claim is made that the full universe is Workforce Pell-eligible as delivered. IPEDS observes only credit-bearing programs at Title IV institutions; noncredit workforce certificates appear in no national completions collection, so the analysis describes the currently observable production that may already qualify or be adapted to qualify.

3. Field earnings benchmarks

Benchmarks come from [Census Post-Secondary Employment Outcomes](#) (Experimental), earnings file, all institutions: institution-level rows, pooled graduation cohorts, all industries, certificate degree levels 01 (under 1 year) and 02 (1-2 years), in constant 2023 dollars (CPI-U adjusted by Census, so growth is real). For each field, defined as a 4-digit CIP code by credential length, the benchmark is the median across reporting institutions of the institution-level median earnings 1, 5, and 10 years after completion. Growth is the year-10 median over the year-1 median, each computed over that horizon's reporting institutions. A benchmark cell requires at least five institutions at year 1, and the slope flag requires at least five at year 10.

Institutions are weighted equally, deliberately: no single provider, however large, can define a field's benchmark. Both weightings were estimated before settling the choice. A completions-weighted median

correlates 0.95 with the primary benchmark and flips the pay flag in 7 of 157 length-specific cells, concentrated where one provider dominates a field (1-2 year vehicle maintenance most prominently, where a single national trade school awards most completions). PSEO publishes only institution-level percentiles, so the pooled completer median is not recoverable under any weighting. The weighted variant is published with the data files.

Completions match benchmarks at three tiers: 4-digit CIP by credential length (95 percent of completions; IPEDS award levels 20/21 map to PSEO degree level 01, level 2 maps to 02), then the pooled certificate benchmark for the 4-digit CIP (2 percent), then the 2-digit family (3 percent); 0.4 percent are unmatched. The first tier is what separates sub-1-year nursing-assistant certificates from 1-2 year practical-nursing certificates inside CIP 51.39. PSEO covers institutions in roughly 25 participating states; earnings are measured in national jobs data wherever completers work. Benchmarks are national properties of fields applied uniformly to every state's completions, so the analysis measures portfolio composition, not state-specific graduate outcomes.

4. Thresholds and buckets

Paid: year-5 median at or above \$48,060, the U.S. median annual wage across all occupations ([BLS OEWS](#) May 2023), chosen for dollar-year comparability with PSEO's constant 2023 dollars. The bar is national because the earnings side is national; a state-specific bar against national field earnings would move the yardstick while the measured quantity stayed fixed. Climbs: real growth of at least 50 percent from the year-1 to the year-10 median, near the cross-field median (47 percent). The two flags define four mutually exclusive buckets; shares use completions in measured fields (99 percent of the universe) as the denominator. Both bars are conventions, and the table below reruns the national shares and state rank stability under all nine combinations of pay bars (\$43,000, \$48,060, \$53,000) and slope bars (40, 50, 60 percent).

Pay bar	Slope bar	Paid and climbing	Paid but flat	Climbing from below	Neither	Spearman vs baseline
\$43,000	40%	42.7%	14.9%	28.1%	14.3%	0.641
\$43,000	50%	35.9%	21.8%	11.5%	30.9%	0.959
\$43,000	60%	22.9%	34.8%	8.8%	33.5%	0.949
\$48,060	40%	36.5%	13.1%	34.3%	16.1%	0.657
\$48,060	50%	31.4%	18.2%	16.0%	34.4%	1.000
\$48,060	60%	19.5%	30.1%	12.2%	38.2%	0.944
\$53,000	40%	26.5%	3.5%	44.3%	25.7%	0.290
\$53,000	50%	23.6%	6.4%	23.8%	46.2%	0.694
\$53,000	60%	16.6%	13.5%	15.1%	54.9%	0.631

Rank stability is high for moderate changes and degrades at the corners for a nameable reason: cosmetology, the largest single field, grows 46.8 percent, just under the 50 percent bar, so loosening the slope bar to 40 percent reclassifies it and moves every state with a large cosmetology sector.

5. Field labels

Labels for 4-digit CIPs are the XX.YY00 General 6-digit title where one exists, otherwise the most frequently reported 6-digit title in the family: readable approximations, not official 4-digit CIP titles.

6. Known limits

Composition, not causation: nothing here estimates the return to any credential. PSEO reflects completers with covered employment; self-employment is missing, which matters for cosmetology. IPEDS undercounts

fields taught heavily outside Title IV institutions, commercial driving most of all, and excludes noncredit production entirely. The men-and-women analysis measures field segregation of completions, not within-field pay differences. A 4-digit CIP by length is the finest unit national data supports; within-field program variation is invisible. A state's totals reflect where institutions are located, not where students come from, and in small states a single institution can dominate.

7. Reproducibility

A replication package regenerates every figure byte-identically from freshly downloaded raw data: a fetch script verifies the IPEDS and PSEO inputs against recorded SHA-256 checksums, the pipeline scripts are the analysis of record with only paths changed, and outputs ship with their own checksums, an Excel workbook, and a data dictionary. Data files, including the field benchmarks with the underlying continuous values, the state and duration-band summaries, the men-and-women tables, and the weighted-benchmark variant, are published with the page.

Published files: [state summary](#), [by duration band](#), [men and women by bucket \(sub-one-year\)](#), [field benchmarks](#), [state by field detail](#). Field-level classification: [field appendix \(PDF\)](#); every state's portfolio: [state portfolios appendix \(PDF\)](#).

Suggested citation: Opportunity Data (2026). Where Short-Term Credentials Lead, State by State: Methodology. opportunitydata.org/short-term-credentials-by-state.html · Data: NCES IPEDS 2023-24; Census PSEO Experimental (pooled cohorts); BLS OEWS May 2023.