

Analyzing Workforce Trends Using the Longitudinal Employer-Household Dynamics Data Products

2024 Goldschmidt Data Immersion Workshop

Presented by: Earlene K.P. Dowell and Jody Hoon-Starr

March 5, 2024

US Census Bureau





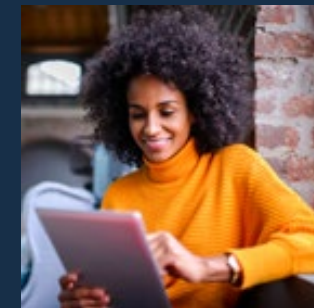
LEHD
Program

Outline

- I. LEHD Program and LED Partnership
- II. Data Products and Tools and more

[LEHD.CES.Census.Gov](https://lehd.ces.census.gov)

- To review past webinars please visit the [Learn More](#) for more information.
- Find stories on how LEHD data is being used on our [LED in Action](#) tab.
- [2024 LED Partnership Virtual Workshop](#)



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Census
Bureau

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov

LEHD Program and Data Products

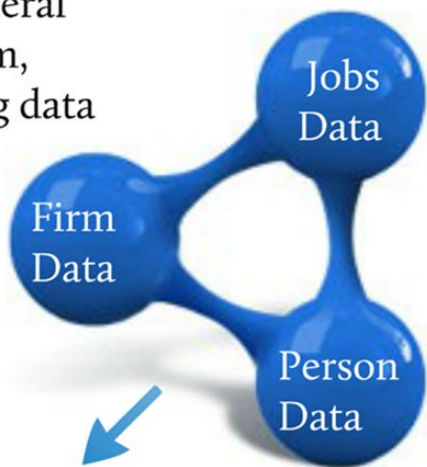




Program and Partnership

LEHD Program

An innovative federal statistical program, collecting existing data and ...

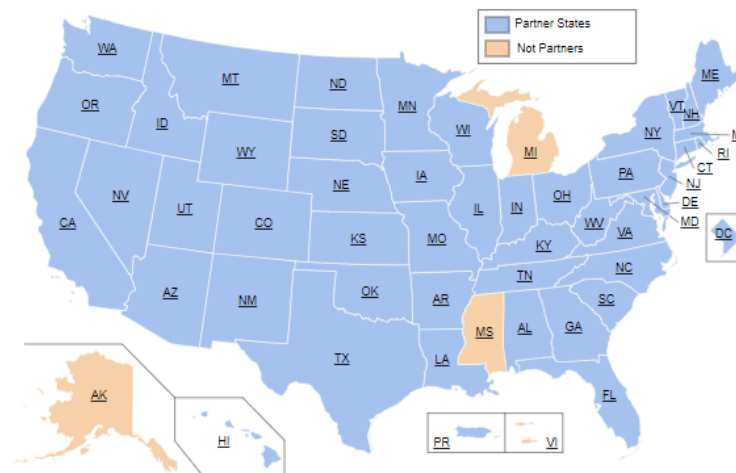


New linked national jobs data for the U.S.

The LEHD Program

..linking it together to provide new information sources at low cost

The LED Partnership



- | | | | |
|--------------------------------------|-------------------------------|--------------------------------|--------------------------------|
| Alabama | Illinois | Montana | Rhode Island |
| Alaska | Indiana | Nebraska | South Carolina |
| Arizona | Iowa | Nevada | South Dakota |
| Arkansas | Kansas | New Hampshire | Tennessee |
| California | Kentucky | New Jersey | Texas |
| Colorado | Louisiana | New Mexico | Utah |
| Connecticut | Maine | New York | Vermont |
| District of Columbia | Maryland | North Carolina | Virginia |
| Delaware | Massachusetts | North Dakota | Washington |
| Florida | Michigan | Ohio | West Virginia |
| Georgia | Minnesota | Oklahoma | Wisconsin |
| Hawaii | Mississippi | Oregon | Wyoming |
| Idaho | Missouri | Pennsylvania | Puerto Rico |
| | | | Virgin Islands |



Longitudinal Employer-Household Dynamics (LEHD)

Data Product	Explore the data, answer questions, or get visualizations	Bulk data for use in analysis process/software	Live queries for building web applications
Quarterly Workforce Indicators (QWI)	QWI Explorer	LED Extraction Tool Raw data download	Census Bureau API
LEHD Origin-Destination Employment Statistics (LODES)	OnTheMap OnTheMap for Emergency Management	Raw data download LED Extraction Tool – Coming soon	Future development
Job-to-Job (J2J)	Job-to-Job Explorer	LED Extraction Tool Raw data download	Future Development
Post-Secondary Employment Outcomes (PSEO)	PSEO Explorer	Raw data download	Census Bureau API
Veteran Employment Outcomes (VEO)	VEO Explorer	Raw data download	Future Development

**LEHD
Program**

QWI Explorer





QWI Explorer

United States
Census
Bureau

QWI Explorer

LEHD
Program

Geography Level

United States

Indicator

Emp - Beginning of Quarter Employment: Cour

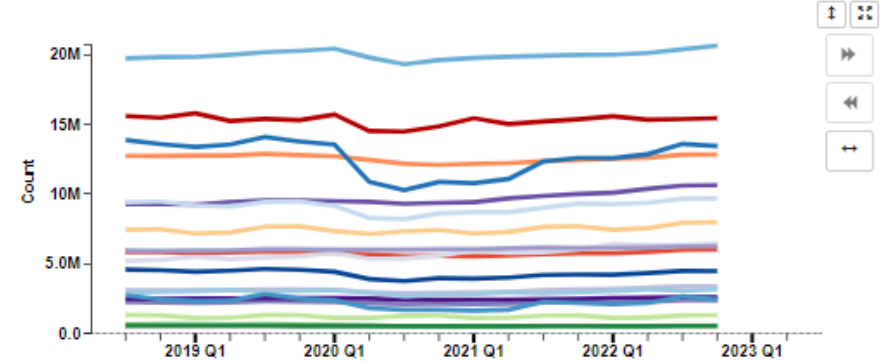
Get Data Share Get Report

Filters/Aggregations

Time: X-Axis
 Geography: None
 Industries: Group
 Firm Ownership: [All Private Ownership](#)
 Firm Age/Size: None
 Worker Characteristics: None

QWI Status Flags

No data available in this category for this quarter.



X-Axis: Quarters (20 Quarters Selected) | Group: NAICS Sectors (20 NAICS Sectors Selected)

Normalize on X-Axis | Normalize on Group

	Agriculture, Forestry, Fishing and Hunting	Mining, Quarrying, and Oil and Gas Extraction	Utilities	Construction	Manufacturing	Wholesale Trade	Retail Trade	Transportation and Warehousing	Information
2020 Q2	1,123,442	598,294	538,439	7,147,716	12,467,052	5,891,119	14,538,769	5,348,077	
2021 Q1	1,113,438	494,550	540,276	7,178,254	12,188,148	5,540,704	15,445,320	5,940,038	
2019 Q1	1,110,589	679,888	544,859	7,178,954	12,781,658	5,777,913	15,800,579	5,505,383	
2019 Q2	1,130,343	675,851	542,537	7,255,104	12,782,333	5,813,977	15,254,380	5,342,406	
2021 Q2	1,132,315	499,551	540,224	7,278,863	12,228,248	5,595,348	15,041,464	5,795,332	



**LEHD
Program**

Normalizing the X-Axis

Geography Level ⌵

United States ⌵

Indicator ⌵

Emp - Beginning of Quarter Employment: Cour ⌵

[Get Data](#) [Share](#) [Get Report](#)

Filters/Aggregations 📁 ⌵

Time: X-Axis

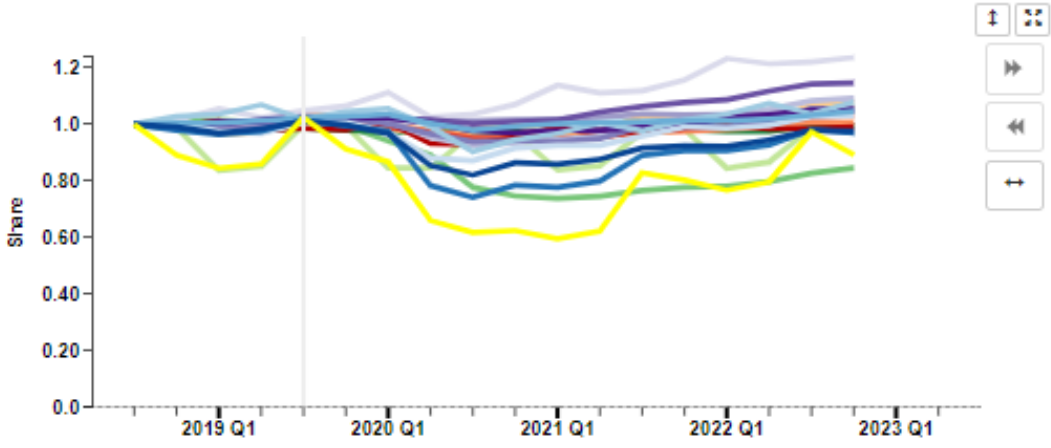
Geography: [None](#)

Industries: [Group](#)

Firm Ownership: [All Private Ownership](#)

Firm Age/Size: [None](#)

Worker Characteristics: [None](#)



- QWI Status Flags** ⌵
- No data available in this category for this quarter.
 - Data not available to compute this estimate.

X-Axis ⌵

Quarters ⌵

[20 Quarters Selected](#)

Normalize on X-Axis ⌵

Group ⌵

NAICS Sectors ⌵

[20 NAICS Sectors Selected](#)

Normalize on Group ⌵

	Professional, Scientific, and Technical Services	Management of Companies and Enterprises	Administrative and Support and Waste Management and Remediation Services	Educational Services	Health Care and Social Assistance	Arts, Entertainment, and Recreation	Accommodation and Food Services	Other Services (except Public Administration)	Public Administration
2018 Q3	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
2018 Q4	1.001	0.995	1.006	1.027	1.004	0.891	0.979	0.990	
2022 Q2	1.117	1.034	0.996	1.073	1.019	0.797	0.927	0.945	
2021 Q3	1.063	0.989	0.959	0.977	1.009	0.829	0.890	0.916	
2019 Q3	1.027	1.025	1.005	1.018	1.022	1.024	1.015	1.011	



Earnings by Industry

LEHD Program

Geography Level ⌵
 United States ⌵

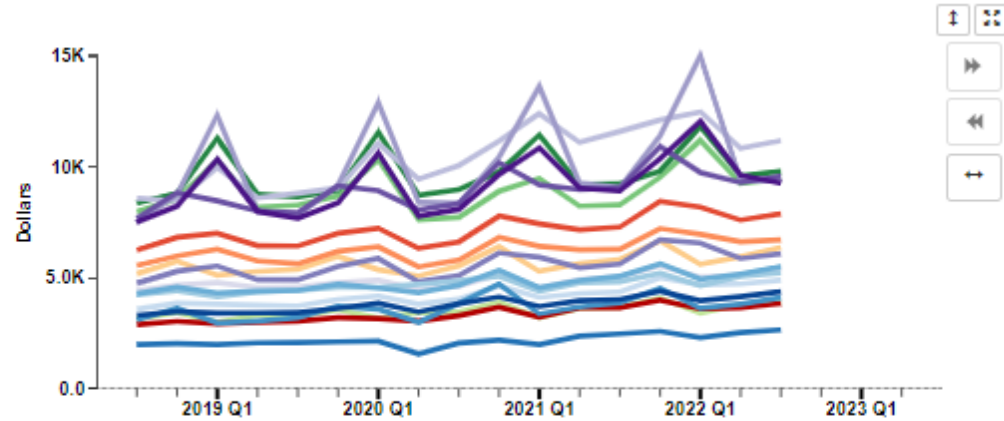
Indicator ⌵
 EarnS - Full Quarter Employment (Stable): Ave ⌵

Filters/Aggregations ⌵

Time: X-Axis
 Geography: [None](#)
 Industries: [Group](#)
 Firm Ownership: [All Private Ownership](#)
 Firm Age/Size: [None](#)
 Worker Characteristics: [None](#)

QWI Status Flags ⌵

- No data available in this category for this quarter.
- Data not available to compute this estimate.



X-Axis ⌵
 Quarters ⌵
[20 Quarters Selected](#)

Group ⌵
 NAICS Sectors ⌵
[20 NAICS Sectors Selected](#)

Normalize on X-Axis ⌵
 Normalize on Group ⌵

	Professional, Scientific, and Technical Services	Management of Companies and Enterprises	Administrative and Support and Waste Management and Remediation Services	Educational Services	Health Care and Social Assistance	Arts, Entertainment, and Recreation	Accommodation and Food Services	Other Services (except Public Administration)	Public Administration
2020 Q2	8,070	7,770	3,801	4,703	4,329	2,988	1,557	3,461	
2019 Q1	8,467	10,342	3,808	4,152	4,310	2,956	1,977	3,404	
2018 Q3	7,687	7,509	3,577	4,235	4,282	3,099	1,984	3,297	
2019 Q2	8,001	7,989	3,766	4,356	4,394	3,044	2,064	3,414	
2021 Q1	9,185	10,849	4,111	4,395	4,552	3,371	1,989	3,707	

OnTheMap and OnTheMap for Emergency Management





LODES Data and OnTheMap

LEHD Program

The screenshot shows the OnTheMap web application interface. At the top, there is a navigation bar with the United States Census Bureau logo and the text "OnTheMap". To the right of the logo are links for "LEHD Home", "Help and Documentation", "Reload", and "Text-Only". Below the navigation bar is a control panel with tabs for "Start", "Base Map", and "Selection". The "Base Map" tab is active. The main area contains a map of the United States with various cities labeled, including Seattle, Portland, San Francisco, San Jose, Los Angeles, San Diego, Phoenix, Las Vegas, Denver, El Paso, Dallas, Houston, Oklahoma City, Memphis, Chicago, Detroit, Columbus, Washington, Philadelphia, New York, and Boston. A scale bar at the bottom left indicates 1000 km and 500 mi. A north arrow is located in the top right corner of the map area. The coordinates "-108.29722, 29.47181" are displayed in the bottom right corner of the map area.

Note: The U.S. Census Bureau reviewed this data product for unauthorized disclosure of confidential information and approved the disclosure avoidance practices applied to this release. CBDRB-FY21-249. Accessibility | Information Quality | FOIA | Data Protection and Privacy Policy | U.S. Department of Commerce | Census Home Source: U.S. Census Bureau, Center for Economic Studies, LEHD | e-mail: CES.OnTheMap.Feedback@census.gov



Home Area Profile Analysis

LEHD Program

United States Census Bureau OnTheMap

LEHD Home Help and Documentation Reload Text-Only

Start Base Map Selection Results

Home Area Profile Analysis
enter your own subtitle

Display Settings

Characteristic Filter Total
Year 2021

Map Controls

Color Key
Thermal Overlay
Point Overlay
Selection Outline
Identify Zoom to Selection
Clear Overlays Animate Overlays

Report/Map Outputs

Detailed Report
Export Geography
Print Chart/Map

Legends

- 5 - 415 Jobs/Sq.Mile
- 416 - 1,648 Jobs/Sq.Mile
- 1,649 - 3,702 Jobs/Sq.Mile
- 3,703 - 6,577 Jobs/Sq.Mile
- 6,578 - 10,275 Jobs/Sq.Mile

Change Settings

Click a Characteristic link in the Summary Report to see more detail.

Age Earnings Industry Sector Race

View as Bar Chart

Total Primary Jobs

	2021	
	Count	Share
Total Primary Jobs	11,439,075	100.0%

Worker Age

	2021	
	Count	Share
Age 29 or younger	2,647,188	23.1%
Age 30 to 54	6,243,435	54.6%
Age 55 or older	2,548,452	22.3%

Earnings

	2021	
	Count	Share
\$1,250 per month or less	4,664,457	41.7%



Home Area Profile Analysis

LEHD
Program

United States
Census
Bureau

LEHD Home Help and Documentation Reload Text-Only

Start Base Map Selection Results

Home Area Profile Analysis
enter your own subtitle

Display Settings

Characteristic Filter Total
Year 2019

Map Controls

Color Key Thermal Overlay
 Point Overlay
 Selection Outline

Identify Zoom to Selection
Clear Overlays Animate Overlays

Report/Map Outputs

Detailed Report
Export Geography
Print Chart/Map

Legends

- 5 - 2,451 Jobs/Sq.Mile
- 2,452 - 7,789 Jobs/Sq.Mile
- 9,790 - 22,020 Jobs/Sq.Mile
- 22,021 - 39,144 Jobs/Sq.Mile
- 39,145 - 61,160 Jobs/Sq.Mile

Change Settings

Map showing job density in the New York area. The map includes labels for states (Maine, Vermont, New Hampshire, New York, Connecticut, Pennsylvania, Ohio) and cities (Rochester, Buffalo, Detroit, Toledo, Cleveland, Akron, Pittsburgh, Philadelphia, Baltimore, Washington, Columbus, Wayne). A red pin is located on Rochester, New York.

Click a Characteristic link in the Summary Report to see more detail.

Age

Earnings

Industry Sector

Race

View as Bar Chart

Total Primary Jobs

	2019	
	Count	Share
Total Primary Jobs	8,330,130	100.0%

Worker Age

	2019	
	Count	Share
Age 29 or younger	1,880,499	22.6%
Age 30 to 54	4,400,404	52.8%
Age 55 or older	2,049,227	24.6%

Earnings

	2019	
	Count	Share
\$1,250 per month or less	1,264,009	15.2%

OnTheMap for Emergency Management



LEHD Program



Hurricanes, Floods, Winter Storms



Disaster Areas



Wildfires



Demographic & Economic Data

United States Census Bureau OnTheMap for Emergency Management LEHD Home OnTheMap Help and Documentation

Hurricane Ida Event Class Wind History 34kn (Cumulative Swath) Time Mon, 30 Aug 2021 10:55:44 GMT Export Share Close

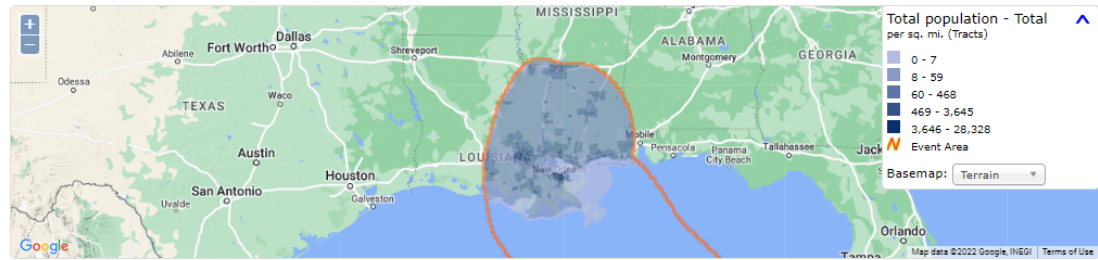
Detail by: Characteristics
 Topic: 2015-2019 ACS Chara...
 Analysis Area: Event Area

Race

Universe: Total population
 Source: American Community Survey, 2015-2019. [Source info](#)

Characteristic	Estimate	Margin of Error
Total	4,576,880	±6,508
White alone	2,784,407	±6,547
Black or African American alone	1,538,260	±5,188
American Indian and Alaska Native alone	21,983	±1,186
Asian alone	82,124	±1,686
Native Hawaiian and Other Pacific Islander alone	1,042	±398
Some other race alone	64,256	±3,209
Two or more races	84,808	±3,330

All tabulations contain derived estimates and margins of error.
 * - The data in some cells in this tabulation are not published in order to protect confidentiality.



New Public Data Service for Emergency Preparedness & Response

- Comprehensive Reports
- Real-time Data Updates
- Easy-to-use & Interoperable
- Historical Event Archive
- Flexible Analyses & Visualizations





LEHD Program

Search:

Filter

Update (September 15, 2021): [Click here to read about application changes related to the COVID-19 Pandemic](#)

Events as of 02/26/2024

Wildfires

Rx Sdf-Montague Plains Wma-Ranch Bartlett Fire
Zip 01351
Affected 2020 Population: 21

Rogue Fire

No data
Affected 2020 Population: 0

Hungry Horse Fire

No data
Affected 2020 Population: 0

Dcr Rx Quabbin Gays Hill B-C-D Fire

No data
Affected 2020 Population: 0

Palmas Fire

No data
Affected 2020 Population: 0

Hanks Rx Fire

No data
Affected 2020 Population: 0

Duck Road Fire

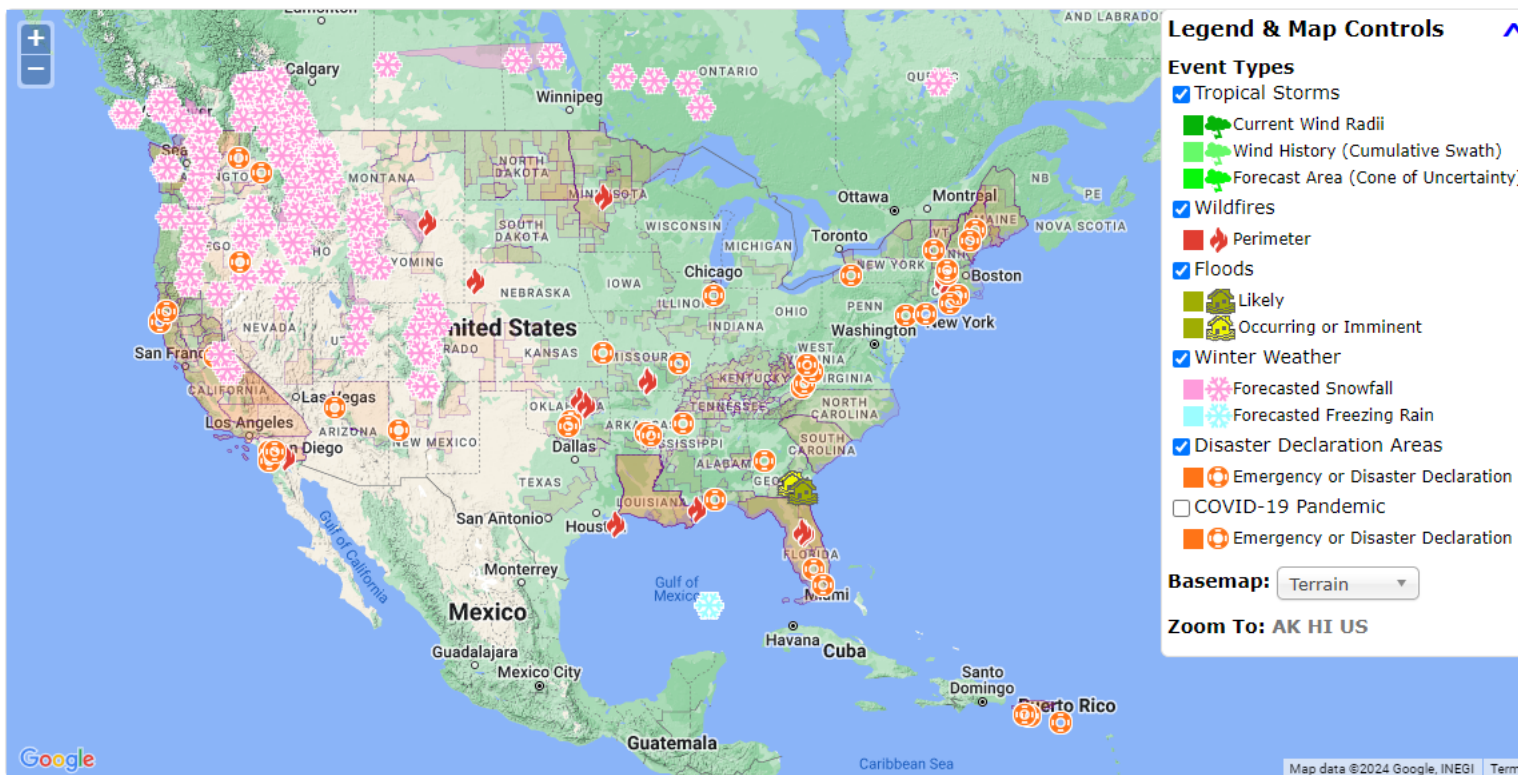
No data
Affected 2020 Population: 0

Rx Dfg-Montague Plains Wma-Wood3 Wood4 Fire

Zip 01349
Affected 2020 Population: 0

Monday Fire

No data
Affected 2020 Population: 0



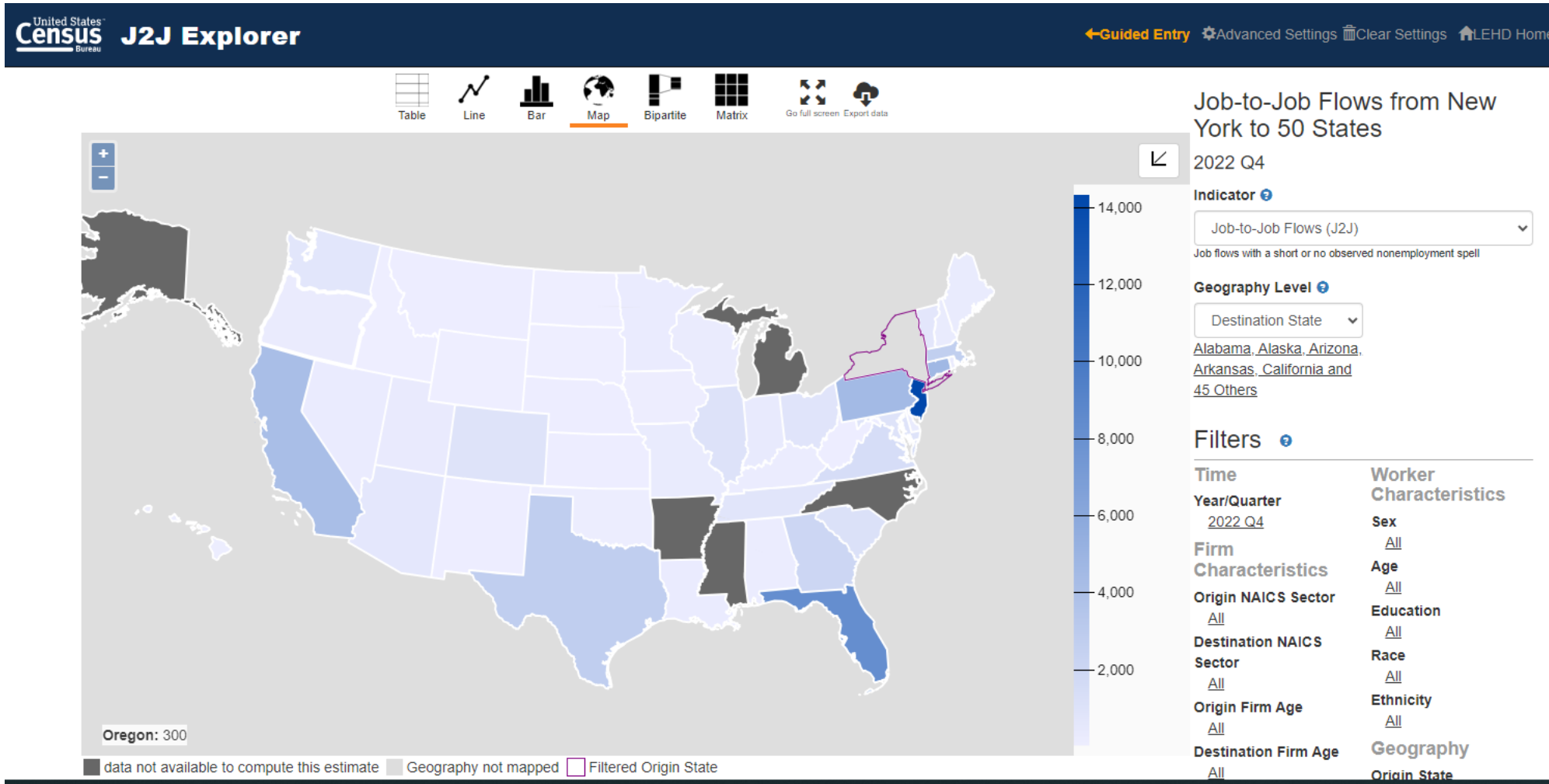
J2J Explorer





J2J Explorer Workers Leaving New York

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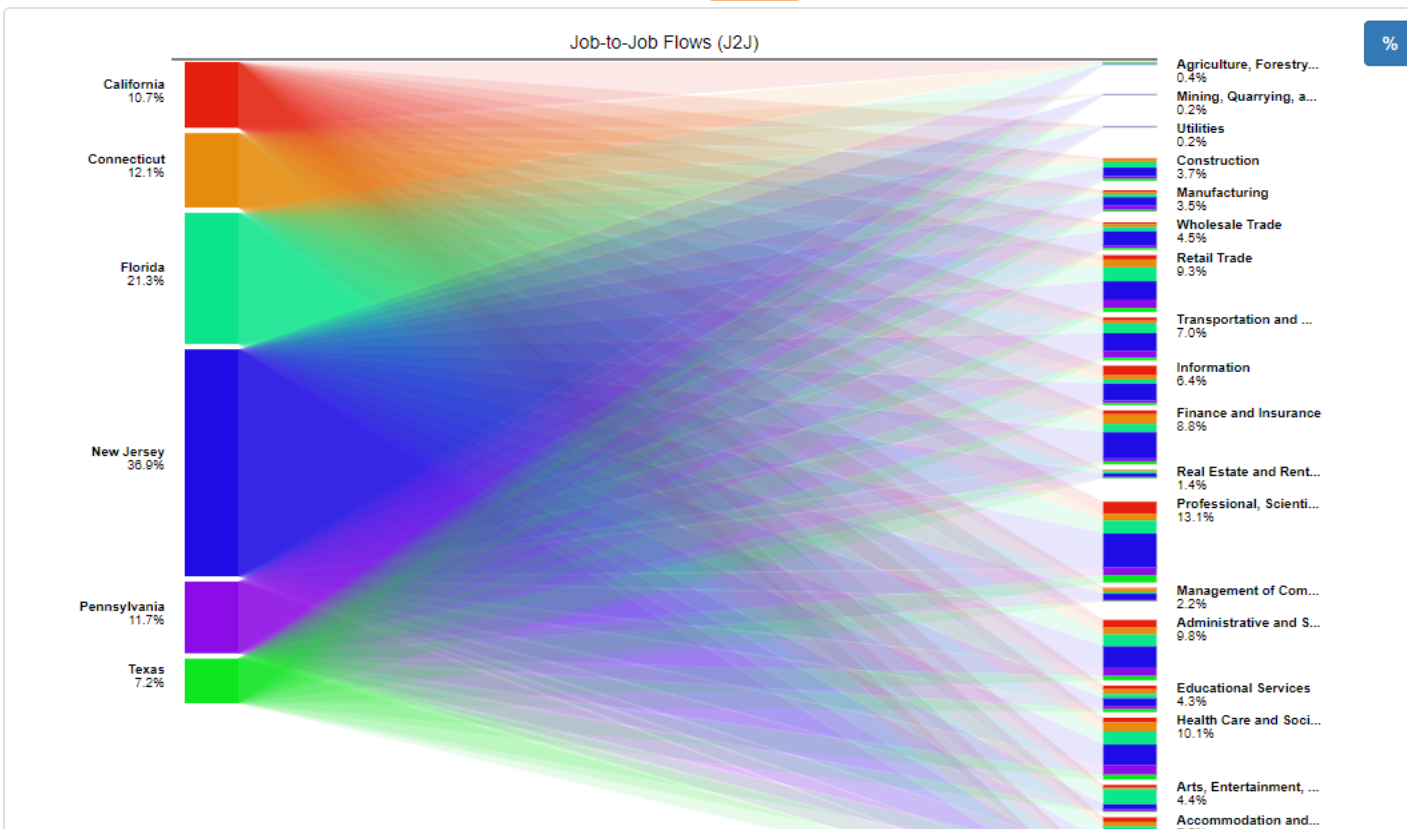




Flows from New York into Industries

LEHD Program

Table
Line
Bar
Map
Bipartite
Matrix
Go full screen
Export data



Job-to-Job Flows from New York to 20 Industries in 6 States

2022 Q4

Indicator ?

Job-to-Job Flows (J2J) ▼

Job flows with a short or no observed nonemployment spell

Left Column ? Right Column ?

Destination State ▼ Destination NAICS ▼

[California, Connecticut, Florida, New Jersey, Pennsylvania and 1 Others](#)
 [Agriculture, Forestry, Fishing and Hunting, Mining, Quarrying, and Oil and Gas Extraction, Utilities, Construction, Manufacturing and 15 Others](#)

Add Comparison Indicator ?

None ▼

Filters ?

Time

Year/Quarter

2022 Q4

Worker Characteristics

Sex

A H

Employment Outcomes

PSEO & VEO



Career Timeline

 **Event** (graduated, discharged)



Employment Outcomes



Event (graduated, discharged)



5 Years

25%

50%

75%

40k

50k

60k

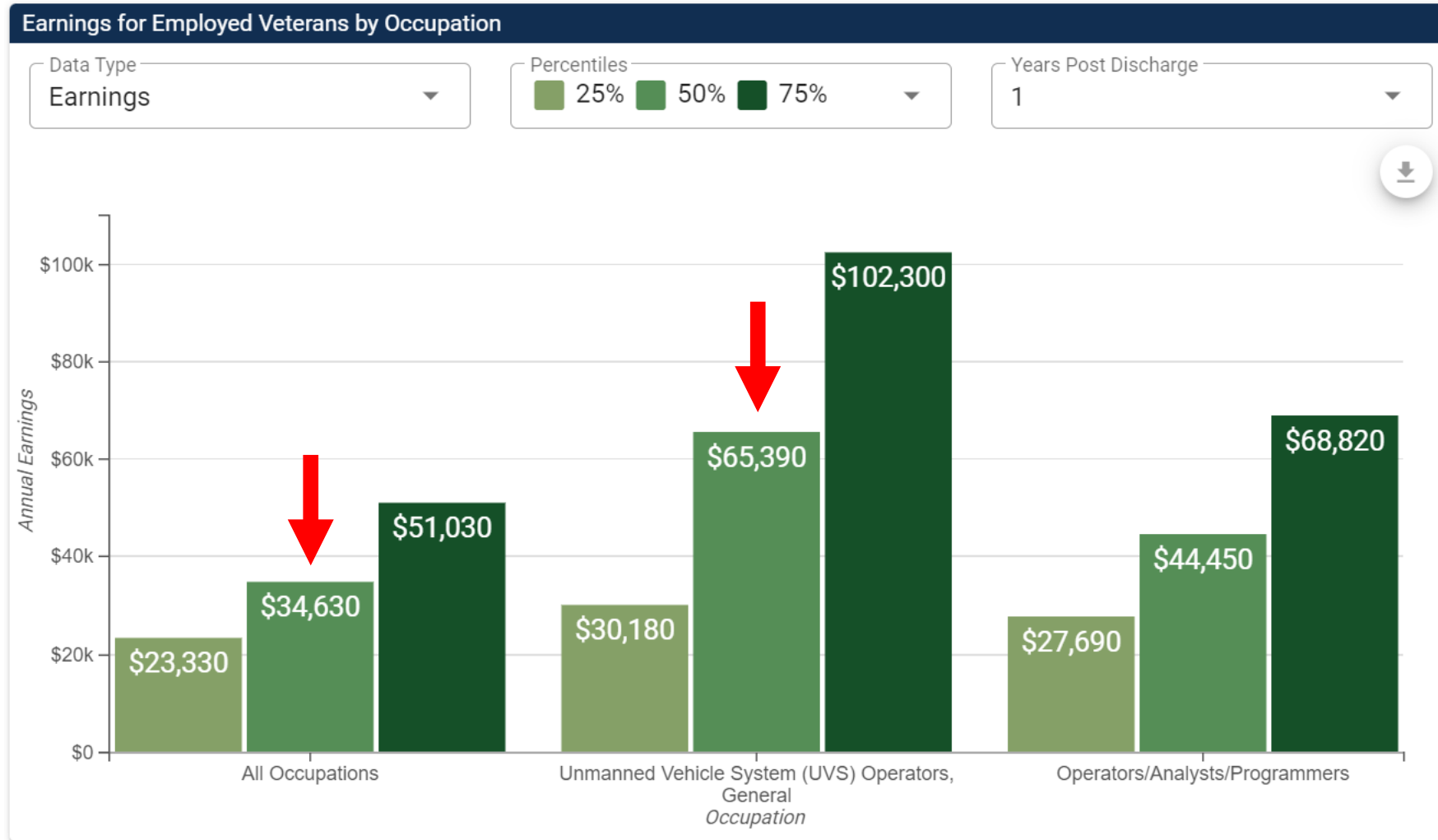
Veteran Employment Outcomes & VEO Explorer

Direct link: [VEO Explorer](#)
or

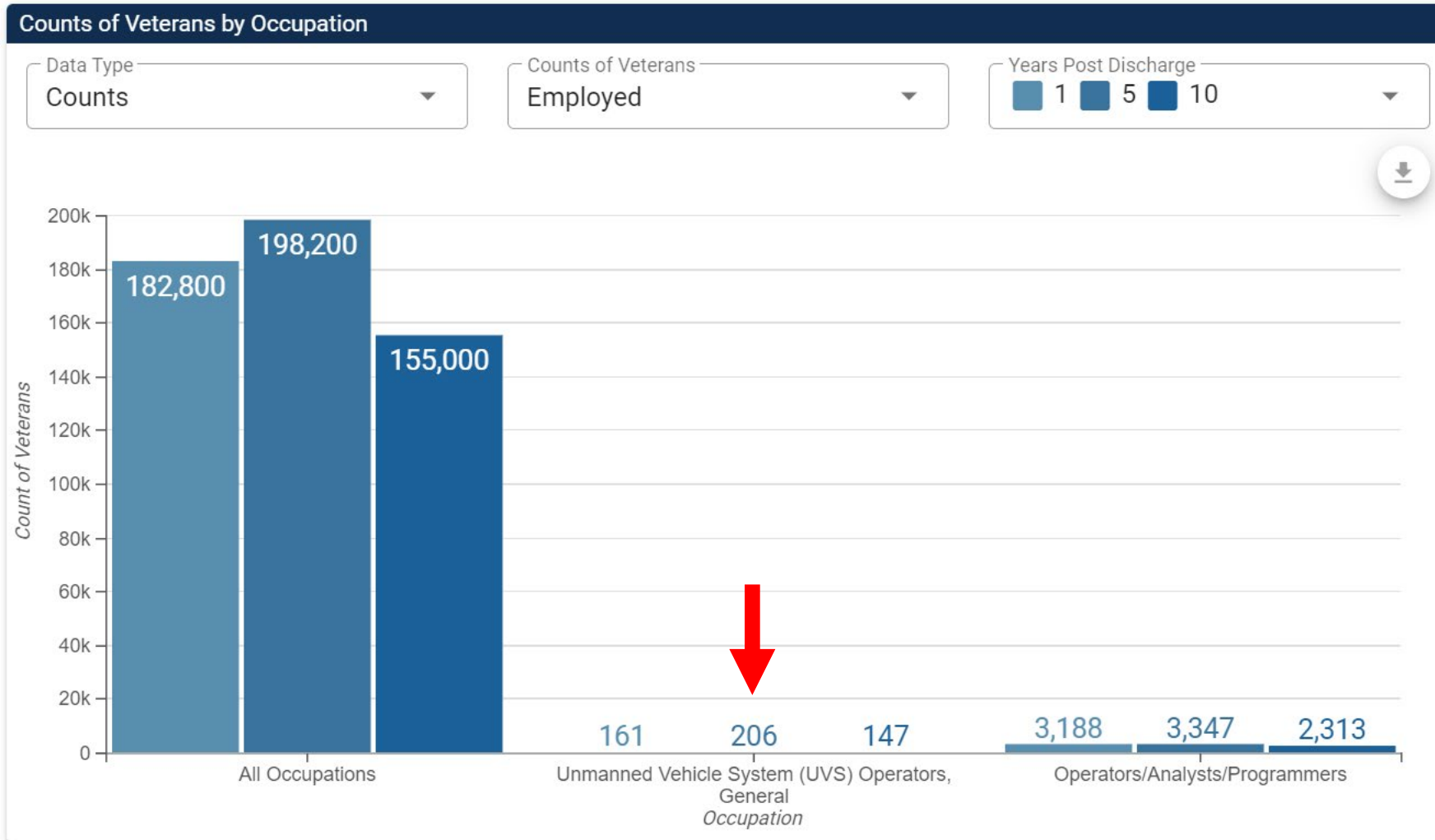
Search: “census veteran employment”



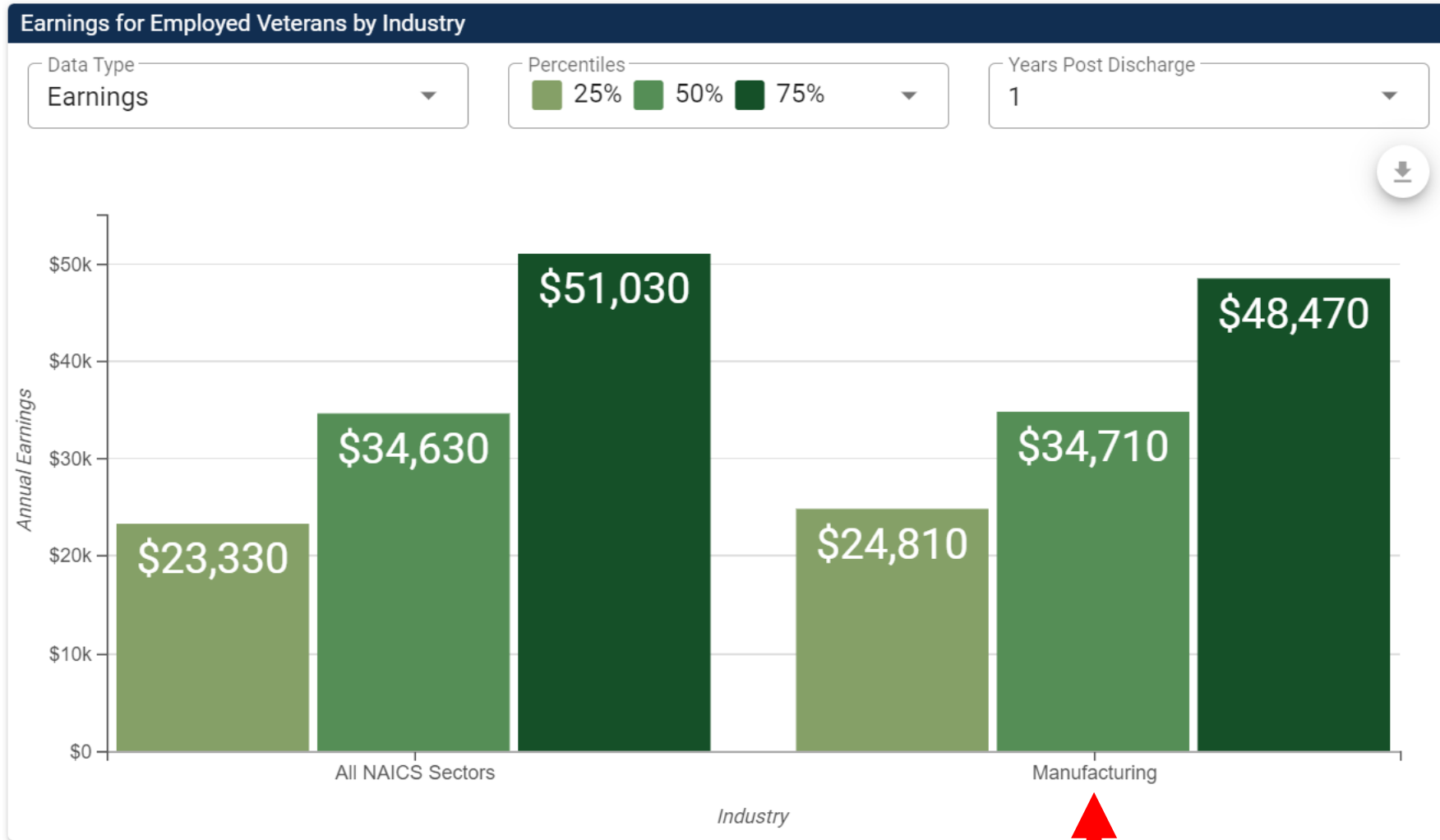
VEO Earnings by Military Occupation



VEO Counts of Veterans by Military Occupation



VEO Earnings by Industry



What's New

- **Current: Only available for Army veterans**
- **Future: All military branches**

- **Current: Completed service between 2000-2015**
- **Future: More recent**

Post-Secondary Employment Outcomes & PSEO Explorer

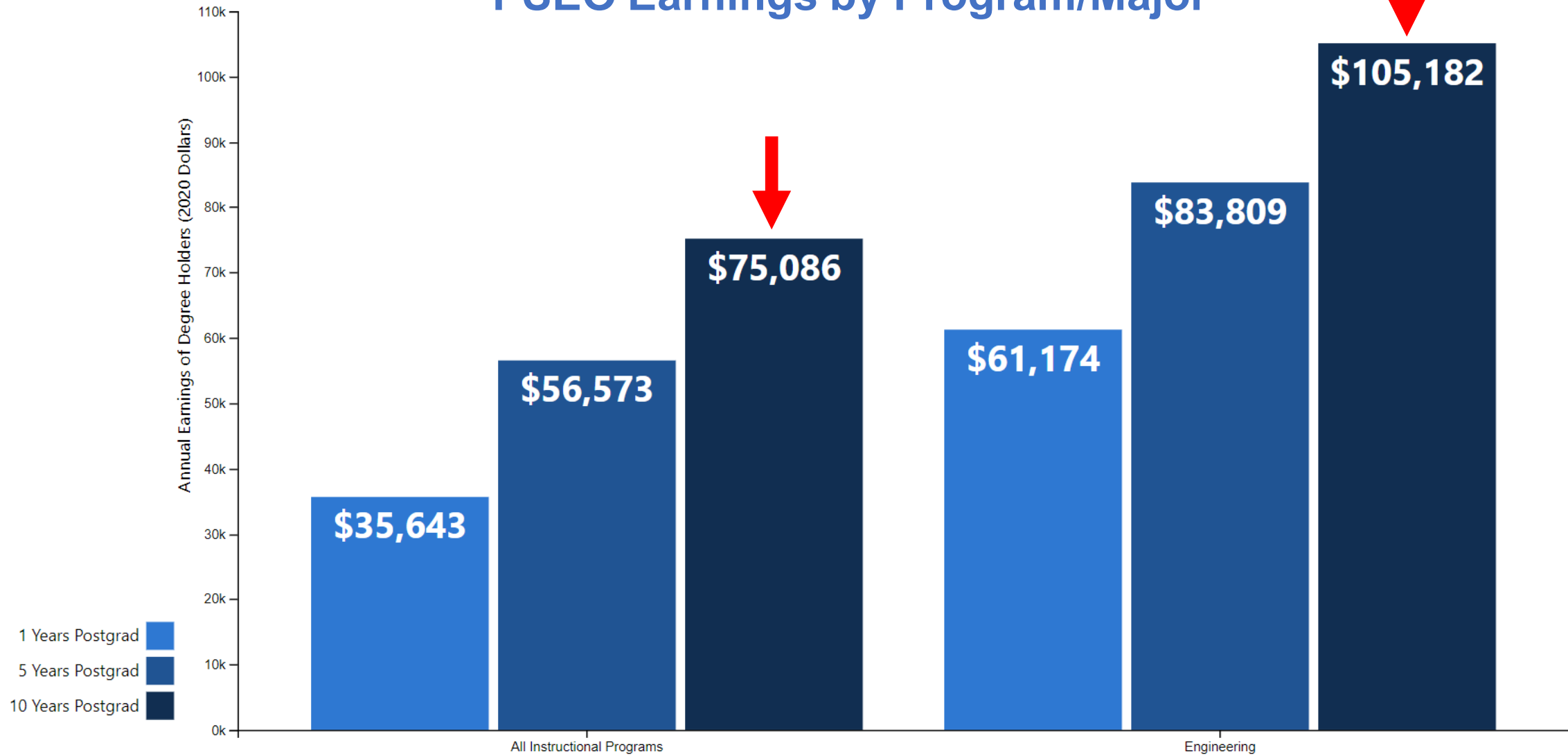
Direct link: [PSEO Explorer](#)

or

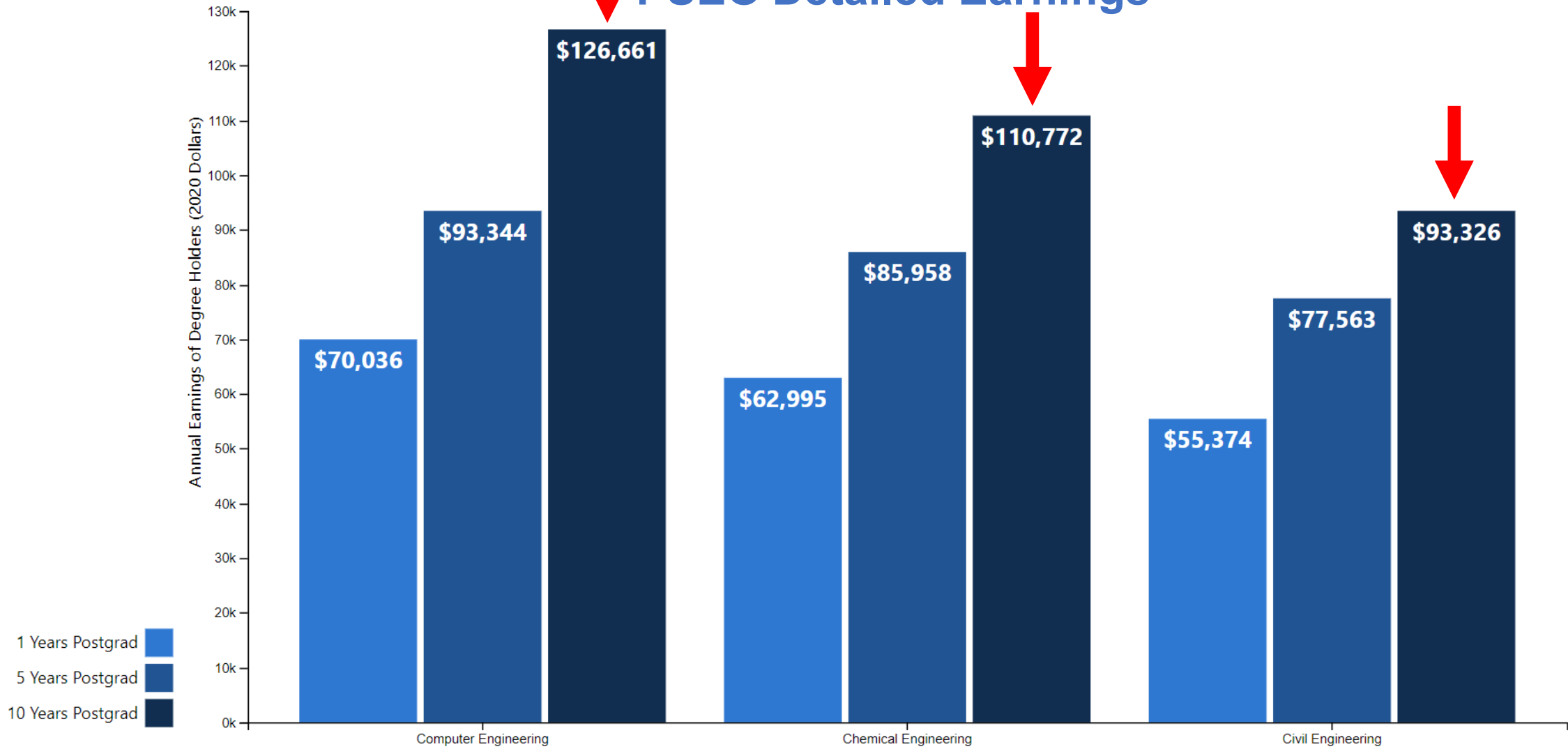
Search: “census college employment”



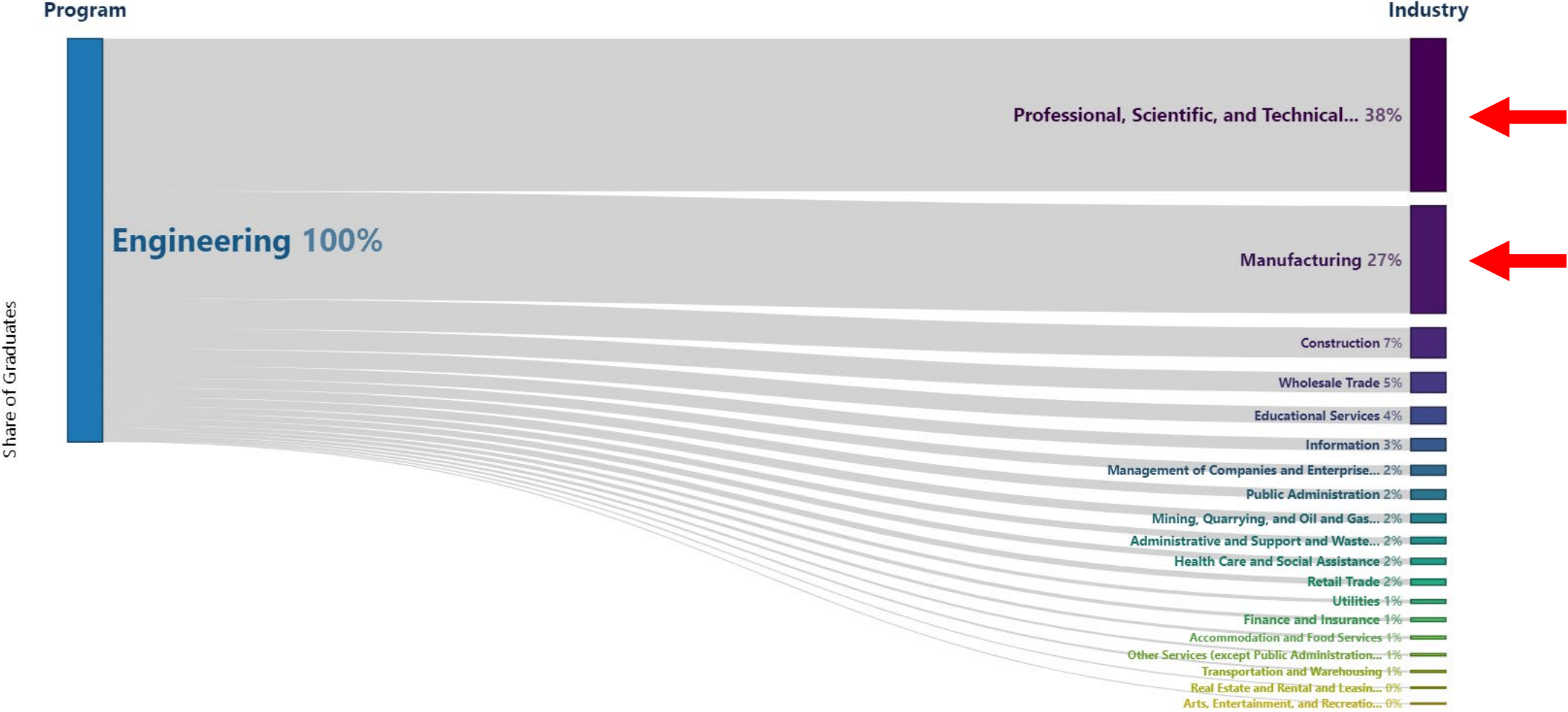
PSEO Earnings by Program/Major



PSEO Detailed Earnings

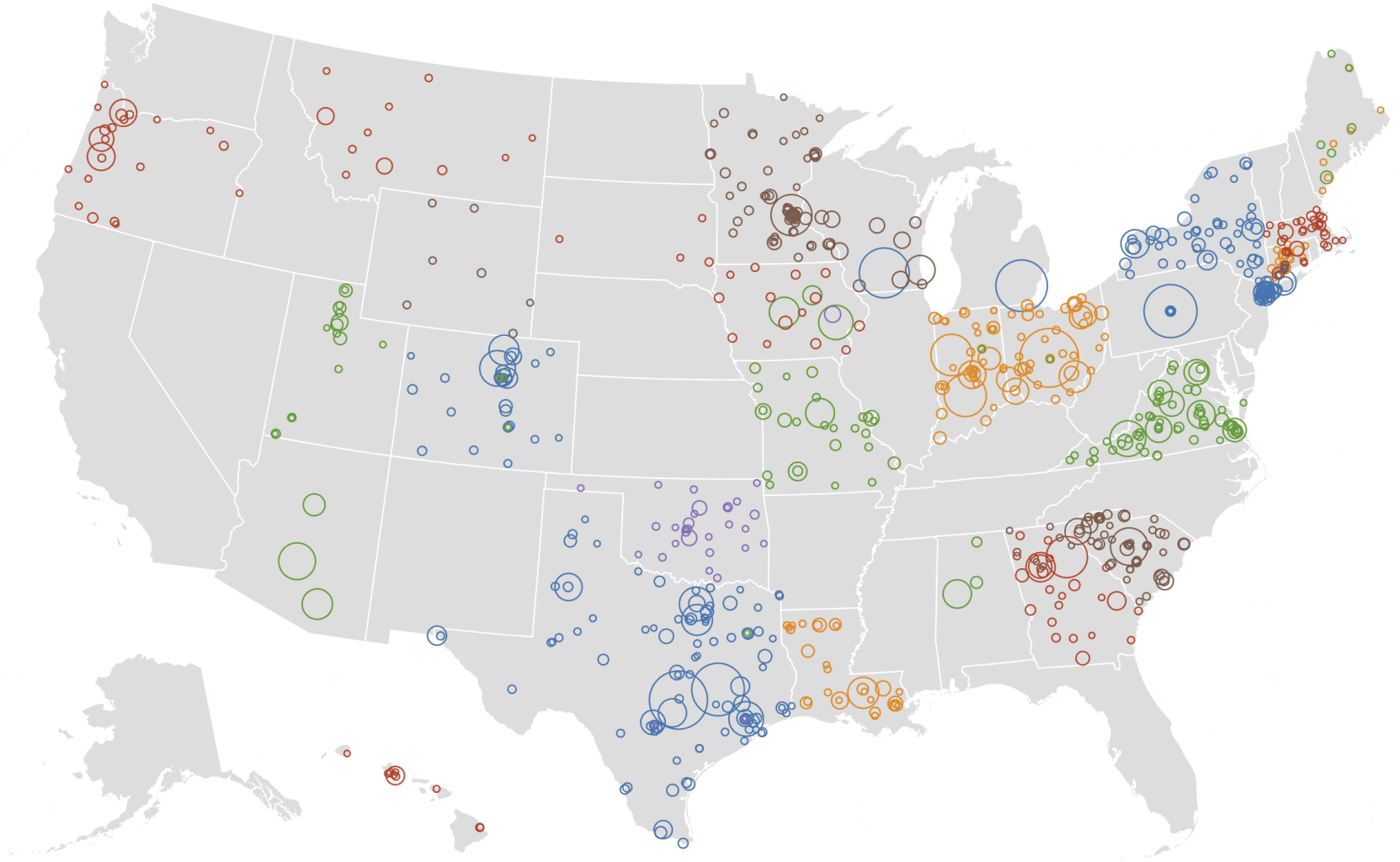


PSEO Flows – Number of Graduates by Industry



Degree level

Pause  2023 Jan 1



Data Coverage

825 Institutions

~29% of all graduates

State coverage may vary*

*coverage details: https://lehd.ces.census.gov/data/pseo_experimental.html

What's New

- 7 partners (groups of institutions) joined in the last year
- State aggregations
 - “What’s the average salary for a BA in journalism from a college in Colorado?”

PSEO vs Other

- **College Scorecard**
 - Restricted to federal aid recipients, may not be representative
 - All enrolled students – no distinction for graduates
- **PayScale**
 - Voluntary self-reported
- **State Data**
 - Can't follow students who cross state lines
- **PSEO isn't perfect (e.g. self-employment)**



LEHD
Program

Summary and Resources

Help and Documentation

Quarterly Workforce Indicator

lehd.ces.census.gov/applications/help/qwi_explorer.html

Job-to-Job Flows

lehd.ces.census.gov/applications/help/j2j_explorer.html

OnTheMap

lehd.ces.census.gov/applications/help/onthemap.html

OnTheMap for Emergency Management

lehd.ces.census.gov/applications/help/onthemap_em.html

Post Secondary Employment Outcomes

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

Veteran Employment Outcomes

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

Q & A and Thank You!

Contact Information:

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For detailed questions concerning the 2020 Decennial, contact:

301-763-INFO or 800-923-8282

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Or email us at: **census.askdata@census.gov**