

# Longitudinal Employer-Household Dynamics Workforce Data Products

## 2023 Goldschmidt Data Immersion Workshop

Presented by: Earlene K.P. Dowell

February 28, 2023

US Census Bureau





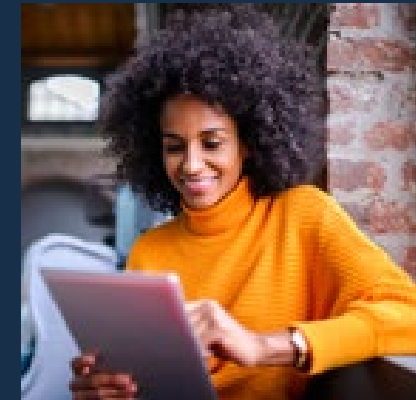
LEHD  
Program

# 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.



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U.S. Department of Commerce  
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[census.gov](https://census.gov)

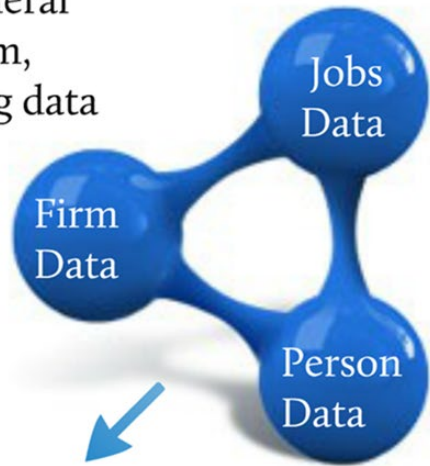
# LEHD Program and LED Partnership





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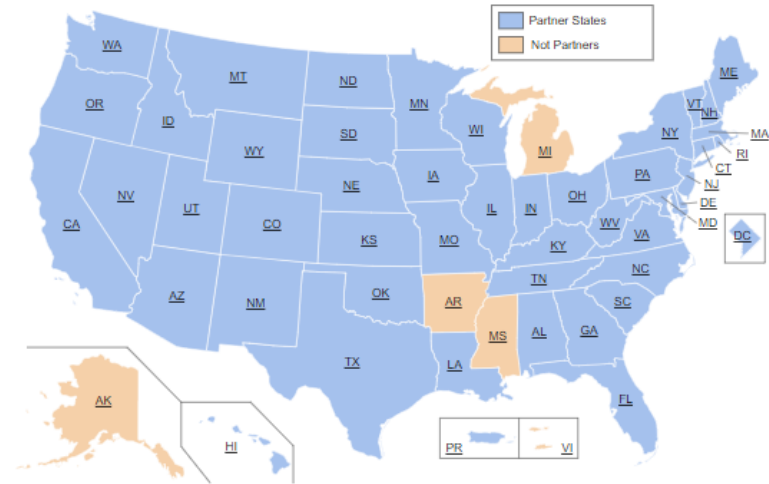
An innovative federal statistical program, collecting existing data and ...



New linked national jobs data for the U.S.

# Program and Partnership

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



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

# LEHD Data Tool





# Longitudinal Employer-Household Dynamics (LEHD)

**LEHD  
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Data Product	Explore the data, answer questions, or get visualizations	Bulk data for use in analysis process/software	Live queries for building web applications
QWI	<a href="#">QWI Explorer</a>	<a href="#">LED Extraction Tool</a> and <a href="#">Raw data download</a>	<a href="#">Census Bureau API</a>
LODES	<a href="#">OnTheMap</a> <a href="#">OnTheMap for Emergency Management</a>	<a href="#">Raw data download</a> coming in the LED Extraction Tool in 2023	Future development
J2J	<a href="#">J2J Explorer</a>	<a href="#">LED Extraction Tool</a> and <a href="#">Raw data download</a>	Future Development
PSEO	<a href="#">PSEO Explorer</a>	<a href="#">Raw data download</a>	<a href="#">Census Bureau API</a>
VEO	<a href="#">VEO Explorer</a>	<a href="#">Raw data download</a>	Future Development



**LEHD  
Program**

# America Counts Stories Behind the Numbers



[Partners](#) [Researchers](#) [Educators](#) [Survey Respondents](#)

[News](#) [NAICS Codes](#) [Jobs](#) [About Us](#) [Contact Us](#) [Help](#)

[Topics](#) [Data & Maps](#) [Surveys & Programs](#) [Resource Library](#)

Search data, events, resources, and more 🔍

## More Women in Manufacturing Jobs in Every Age Group



// [Census.gov](#) / [America Counts: Stories Behind the Numbers](#) / [More Women in Manufacturing Jobs in Every Age Group](#)

## Manufacturing Opens More Doors to Women

October 03, 2022

Written by: Earlene K.P. Dowell



# J2J Explorer







# J2J Explorer Women in Manufacturing over the past 10 Years

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United States  
**Census**  
Bureau

**J2J Explorer**

← Guided Entry ⚙️ Advanced Settings 🗑️ Clear Settings 🏠 LEHD Home 📄 Help

Table

Line

**Bar**

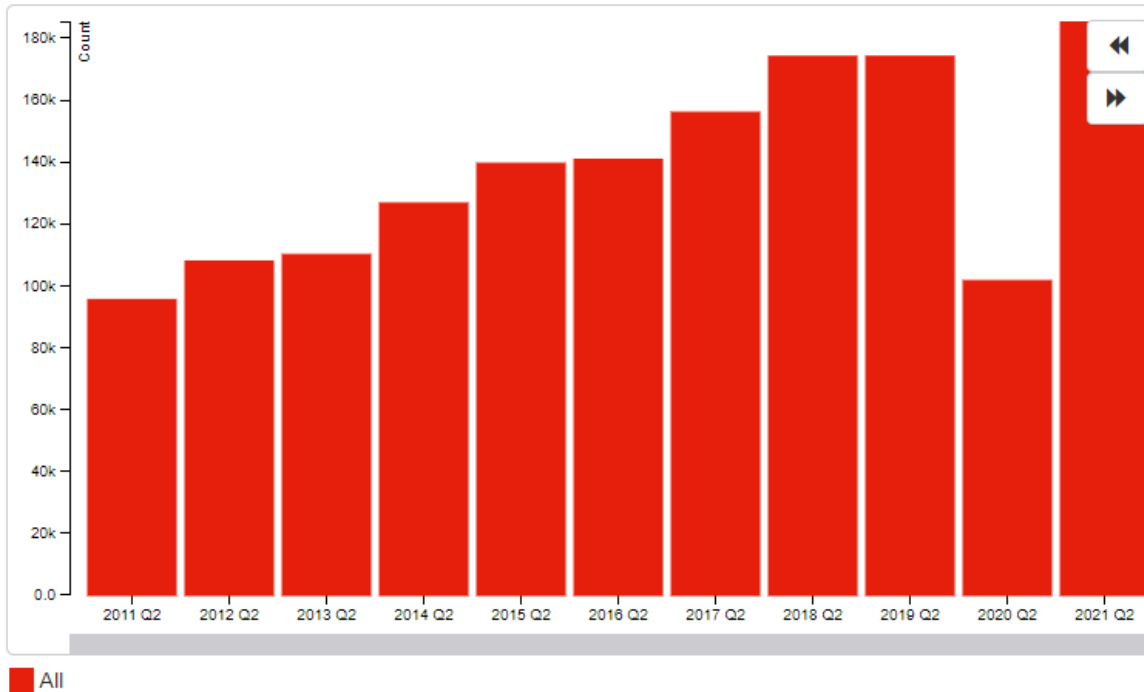
Map

Bipartite

Matrix

Go full screen

Export data



## Job-to-Job Flows to Manufacturing by Year/Quarter filtered by Sex

Q2 Series 2011 - 2021

Indicator ⓘ

Job-to-Job Flows (J2J)

Job flows with a short or no observed nonemployment spell

X-Axis ⓘ

Year/Quarter

Group ⓘ

None

[2021 Q2](#), [2020 Q2](#), [2019 Q2](#),

[2018 Q2](#), [2017 Q2](#) and 6

[Others](#)

Filters ⓘ

**Firm Characteristics**

Origin NAICS Sector

[All](#)

Destination NAICS Sector

[Manufacturing](#)

**Worker Characteristics**

Sex

**Geography**

Destination State

[All](#)

Origin State

[All](#)

Destination Metro Area

[All](#)

Origin Metro Area

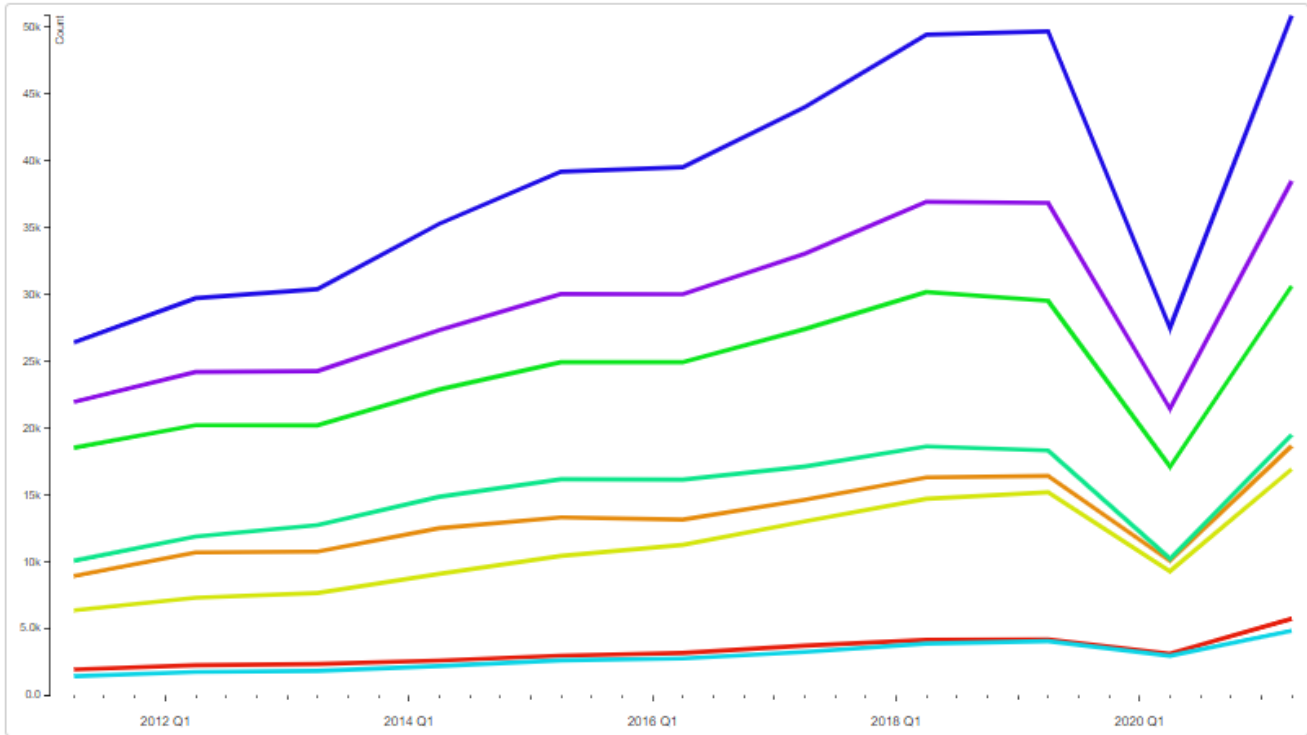
[All](#)



# Women in Manufacturing by Age

LEHD Program

- Table
- Line**
- Bar
- Map
- Bipartite
- Matrix
- Go full screen
- Export data



Job-to-Job Flows to Manufacturing by Year/Quarter and Age filtered by Sex  
Q2 Series 2011 - 2021

Indicator   
 Job-to-Job Flows (J2J)   
 Job flows with a short or no observed nonemployment spell

X-Axis   
 Year/Quarter   
 Age   
 2021 Q2, 2020 Q2, 2019 Q2, 2018 Q2, 2017 Q2 and 6 Others   
 14-18, 19-21, 22-24, 25-34, 35-44 and 3 Others

Filters   
 Firm Characteristics: Origin NAICS Sector (All), Destination NAICS Sector (Manufacturing)   
 Geography: Destination State (All), Origin State (All), Destination Metro Area (All), Origin Metro Area (All)   
 Worker Characteristics: Sex (Female)

Advanced Functions   
 Ranking: None

Quarter 2 Series   
 14-18 19-21 22-24 25-34 35-44 45-54 55-64 65-99

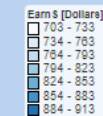
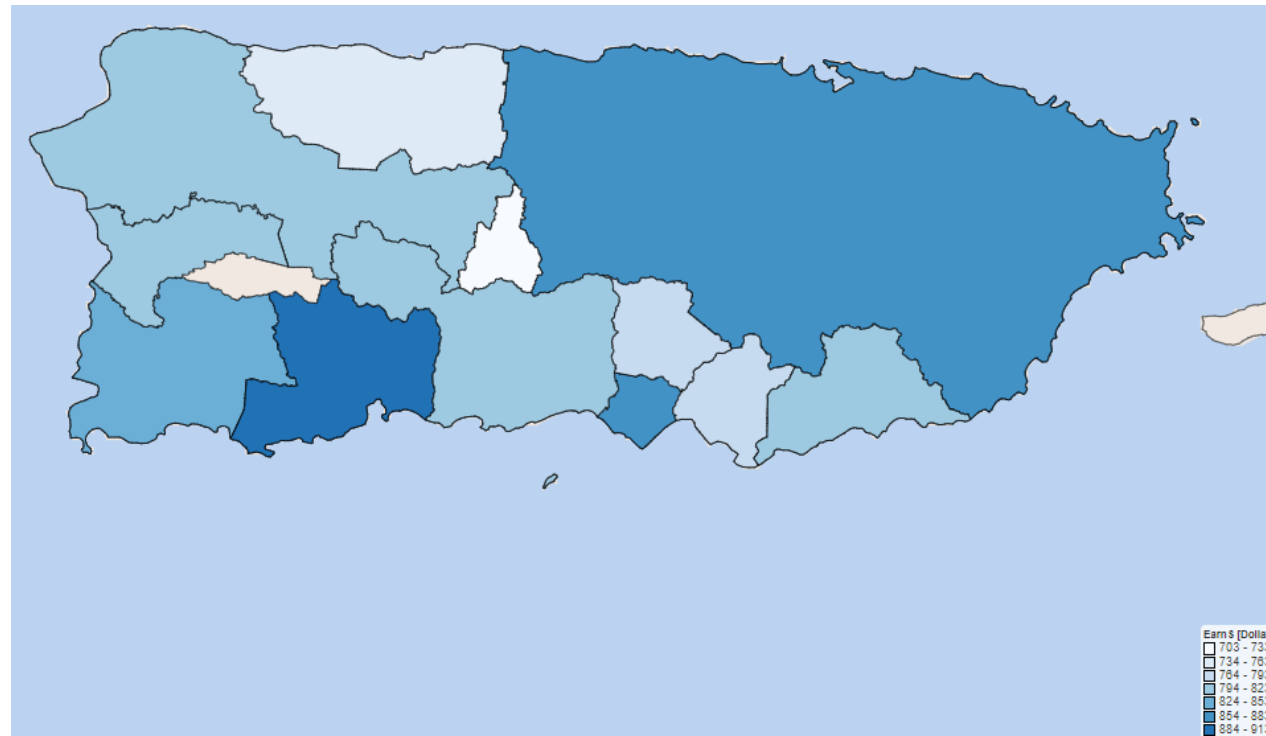
# QWI Explorer





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# Puerto Rico Now in [QWI Explorer](#)



	14-18	19-21	22-24	25-34	35-44	45-54	55-64	65-99
Aguadilla-Isabela, PR	820	1,020	1,287	2,009	2,484	2,603	2,607	2,211
Arecibo, PR	749	977	1,252	1,714	2,119	2,520	2,445	2,267
Coamo, PR	780	945	1,078	1,681	1,990	2,131	2,172	1,945
Coco, PR	771	1,002	1,213	1,620	1,913	1,932	2,014	1,697
Guayama, PR	816	911	1,236	2,024	3,012	3,630	3,169	1,866
Jayuya, PR	703	934	1,495	2,187	2,492	3,006	2,503	1,774
Mayagüez, PR	808	991	1,303	1,841	2,112	2,404	2,286	2,125
Ponce, PR	820	991	1,223	1,752	2,282	2,575	2,541	2,507
San Germán, PR	837	1,029	1,224	1,587	1,773	2,138	2,071	1,934
San Juan-Bayamón-Caguas, PR	865	1,123	1,478	2,238	3,034	3,651	3,492	2,939
Santa Isabel, PR	854	990	1,186	2,305	3,059	3,180	3,446	1,794
Yauco, PR	913	1,012	1,232	1,709	2,117	2,284	2,227	2,157
Nonmetropolitan, nonmicropolitan, PR	993	1,331	1,525	1,909	2,279	2,508	2,462	2,060



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# Women in Manufacturing in Puerto Rico

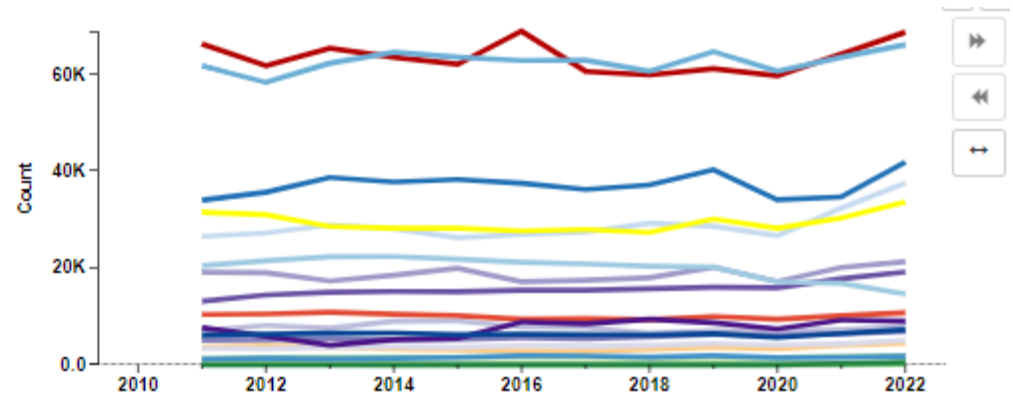
Puerto Rico

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 Sex: Female



- QWI Status Flags
- No data available in this category for this quarter.
  - Data not available to compute this estimate.
  - Aggregate of cells not released because component cells do not meet U.S. Census Bureau publication standards.

X-Axis: Yearly Averages (13 Years Selected)

Group: NAICS Sectors (20 NAICS Sectors Selected)

Normalize on X-Axis | Normalize on Group

	Manufacturing	Wholesale Trade	Retail Trade	Transportation and Warehousing	Information	Finance and Insurance	Real Estate and Rental and Leasing	Professional, Scientific, and Technical Services	Man of Co and En
2018	27,300	9,306	59,789	4,053	6,591	17,973	5,833	15,705	
2019	30,088	9,998	61,046	4,411	7,028	20,109	6,344	16,050	
2020	28,159	9,446	59,676	4,116	6,973	17,203	6,063	15,933	
2021	30,292	10,111	64,148	4,376	7,241	20,103	6,449	17,784	
2022	33,578	10,755	68,614	5,036	7,865	21,271	6,969	19,174	

# OnTheMap and OnTheMap for Emergency Management



# 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

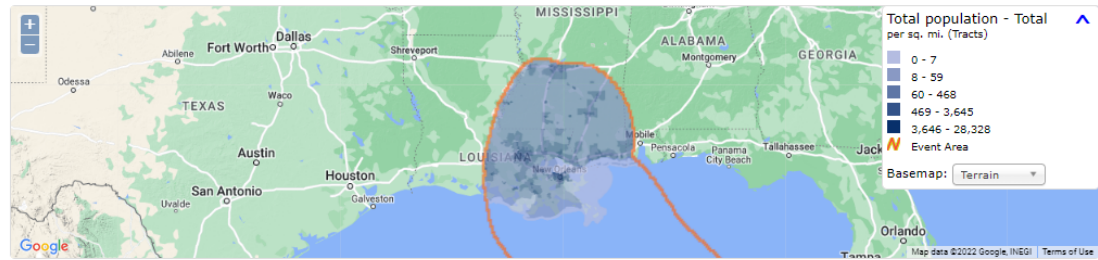
Hurricane Ida Event Class Wind History 34kn (Cumulative Swath) Time Mon, 30 Aug 2021 10:55:44 GMT Export Share Close

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
<b>Total</b>	<b>4,576,880</b>	<b>±6,508</b>
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





# Social, Physical, and Economical Vulnerabilities

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**Emergency Declaration: EM-3591** Time: Wed, 11 Jan 2023 20:00:02 GMT Export Share Close

Detail by:   
 Topic:   
 Analysis Area: [Event Area](#)

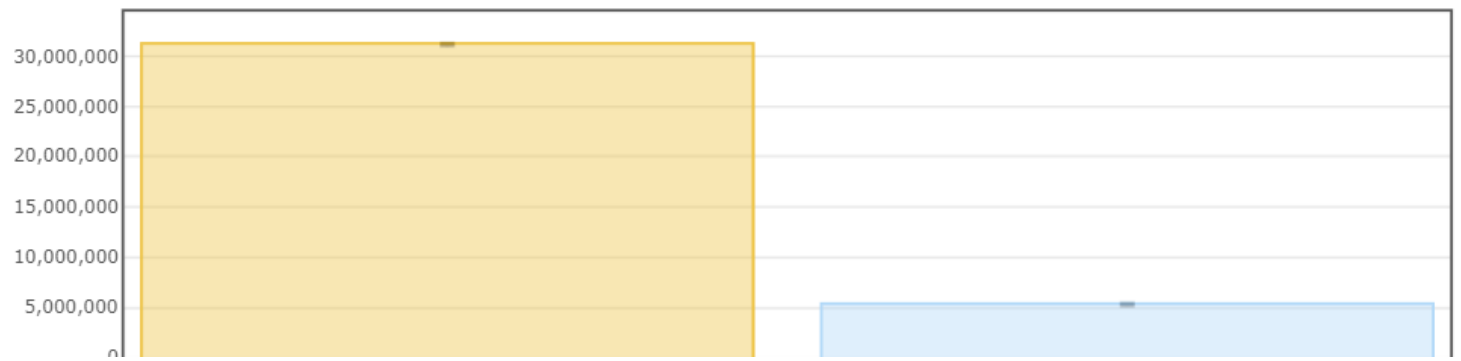
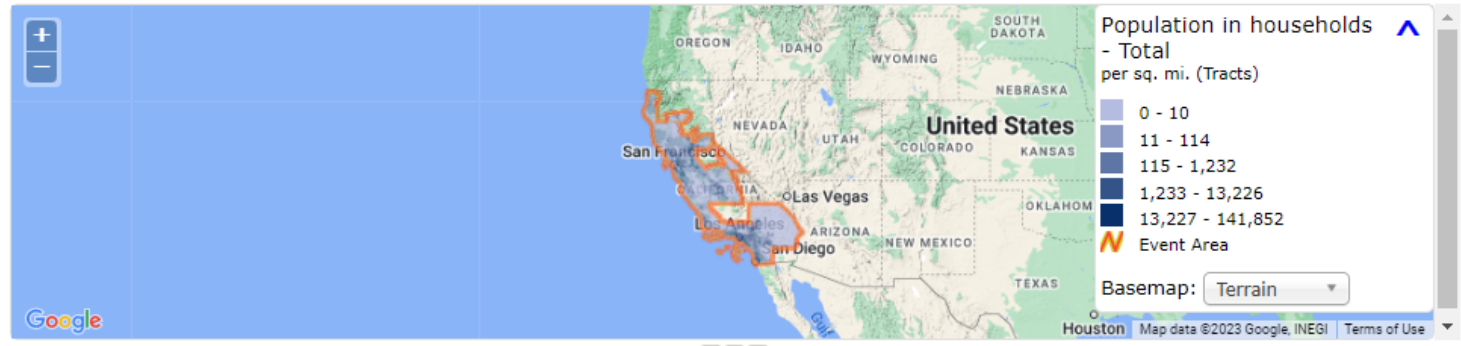
**Household Type**

Universe: Population in households  
 Source: American Community Survey, 2015-2019. [Source info](#) [>>](#)

Characteristic	Estimate	Margin of Error
<b>Total</b>	<b>36,662,820</b>	<b>±7,339</b>
In family households	31,232,332	±20,753
In nonfamily households	5,430,488	±19,778

- Race
- Hispanic or Latino Origin
- Ability to Speak English by Age
- Ability to Speak English by Language Spoken at Home
- Disability Status by Poverty Status
- Disability Status by Age
- Ratio of Income to Poverty Level in the Past 12 Months
- Poverty Status in the Past 12 Months

All tabulations contain derived estimates and margins of error.







# LODES Data and OnTheMap

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The screenshot displays the OnTheMap web application interface. At the top, the United States Census Bureau logo is on the left, and navigation links for LEHD Home, Help and Documentation, Reload, and Text-Only are on the right. Below the header, there are tabs for Start, Base Map, and Selection. A toolbar includes Save, Load, Feedback, Previous Extent, and Hide Tabs. The main map area shows the United States with city labels such as 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, Boston, and Jacksonville. A scale bar indicates 1000 km and 500 mi. A north arrow and a coordinate display (-108.29722, 29.47181) are also present.

United States<sup>®</sup>  
Census Bureau

OnTheMap

LEHD Home Help and Documentation Reload Text-Only

Start Base Map Selection

Save Load Feedback Previous Extent Hide Tabs

Welcome to OnTheMap!

Start an analysis by using one of the tools below (Search, Import Geography, or Load .OTM file). Hover over the Help icons located throughout the application to see Help tips for using specific functionality. Sections in the control panel can be collapsed or opened by clicking the section title

2019 data now available!  
[Read New Data Notice \(11/2/2021\)](#)

Search

Search

Search All Names

Import Geography

[Import from KML](#)  
[Import from SHP](#)  
[Import from GPS](#)

Load .OTM File

Click the "Load" button below to load a .OTM file.

Load

1000 km  
500 mi

-108.29722, 29.47181

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](mailto:CES.OnTheMap.Feedback@census.gov)



LEHD Program

# Work Area Profile Analysis

[LEHD Home](#)
[Help and Documentation](#)
[Reload](#)
[Text-Only](#)

Start | Base Map | Selection | Results

Save | Load | Feedback | Previous Extent | Hide Tabs | Hide Chart/Report

### Work Area Profile Analysis

*enter your own subtitle*

**Display Settings**

Characteristic Filter: NAICS Industry Sector: Manufacturing  
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 - 2,337 Jobs/Sq.Mile
- 2,338 - 9,336 Jobs/Sq.Mile
- 9,337 - 21,000 Jobs/Sq.Mile

[Change Settings](#)

1000 km  
500 mi

-96.56859, 24.77896

Job Counts by NAICS Industry Sector in 2019

View as: Bar Chart

Characteristic	Count	Percentage
Professional, Scientific, and Technical Services	1,305,886	9.0%
Management of Companies and Enterprises	269,192	1.8%
Administration & Support, Waste Management and Remediation	1,084,601	7.5%
Educational Services	351,587	2.4%
Health Care and Social Assistance	2,290,709	15.7%
Arts, Entertainment, and Recreation	322,464	2.2%
Accommodation and Food Services	1,588,908	10.9%
Other Services (excluding Public)	531,526	3.7%



# Work Area Comparison Analysis

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Bureau

**OnTheMap**

LEHD Home Help and Documentation Reload Text-Only

Start Base Map Selection Results

Save Load Feedback Previous Extent Hide Tabs Hide Chart/Report

**Work Area Comparison Analysis by Places (Cities, CDPs, etc.)**  
*enter your own subtitle*

Display Settings

Characteristic Filter: **NAICS Industry Sector: Manufacturing**

Number of Results: Top 10

Sort Chart/Report by: Total

Year: 2019

Map Controls

Color Key:  Manufacturing

Thematic Overlay:

Selection Outline:

Identify Zoom to Selection

Clear Overlays Animate Overlays

Report/Map Outputs

Detailed Report

Export Geography

Print Chart/Map

Change Settings

Job Counts by Places (Cities, CDPs, etc.) in 2019

Job Counts by Places (Cities, CDPs, etc.) in 2019 - All Private Jobs

Place (City, CDPs, etc.)	Total	Manufacturing	Filter Share
<a href="#">All Places (Cities, CDPs, etc.)</a>	13,903,821	1,193,262	8.6%
<a href="#">Los Angeles city, CA</a>	1,595,230	81,930	5.1%
<a href="#">San Diego city, CA</a>	716,772	53,614	7.5%
<a href="#">San Jose city, CA</a>	394,010	55,031	14.0%
<a href="#">Irvine city, CA</a>	255,029	33,742	13.2%
<a href="#">Anaheim</a>	188,212	18,916	10.1%

# Employment Outcomes Concepts



# Career Timeline



# Employment Outcomes



Event



5 Years

25%

40k

50%

50k

75%

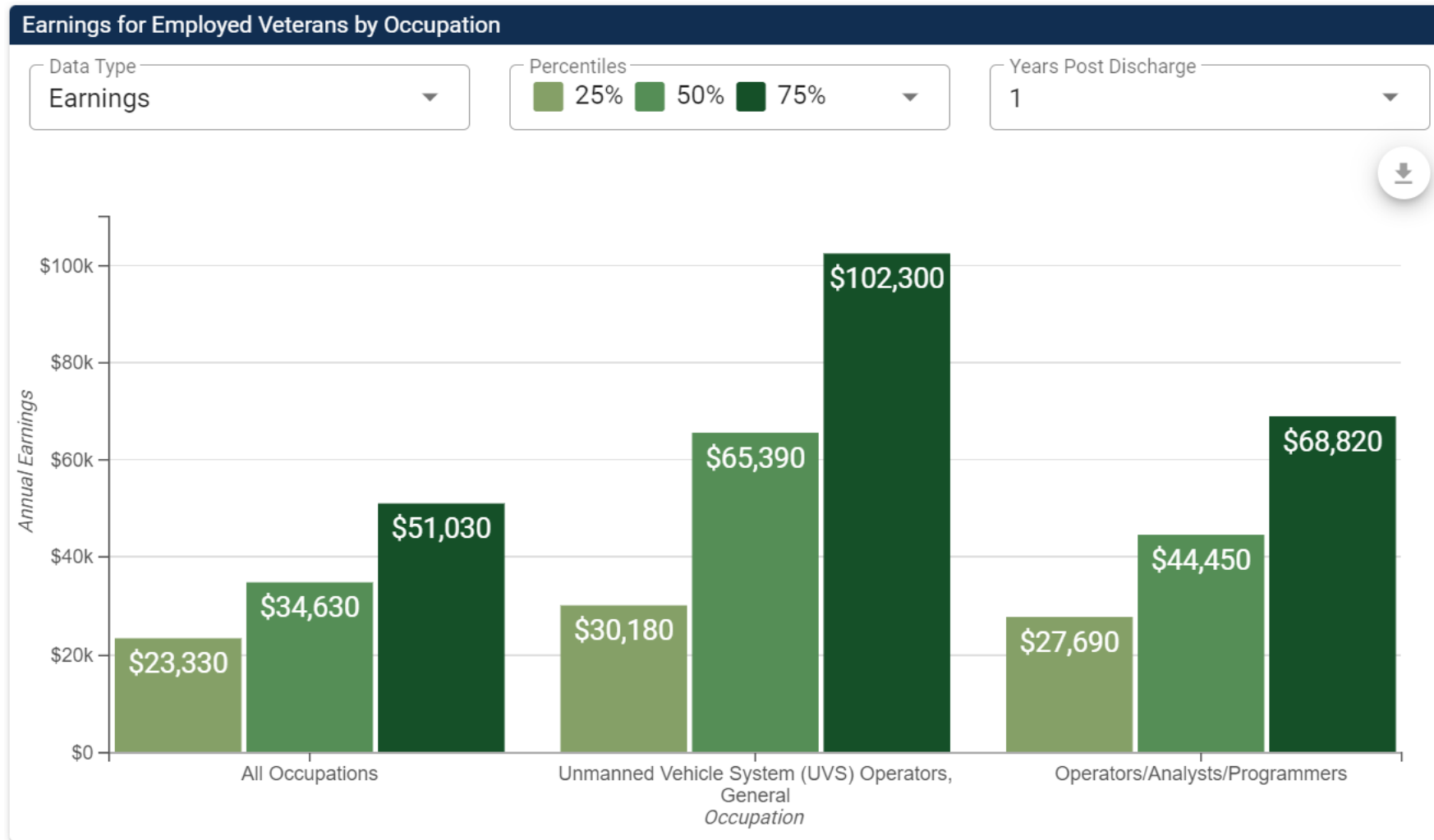
60k

# VEO Explorer

Direct link: [VEO Explorer](#)  
or  
Search: “census veteran employment”

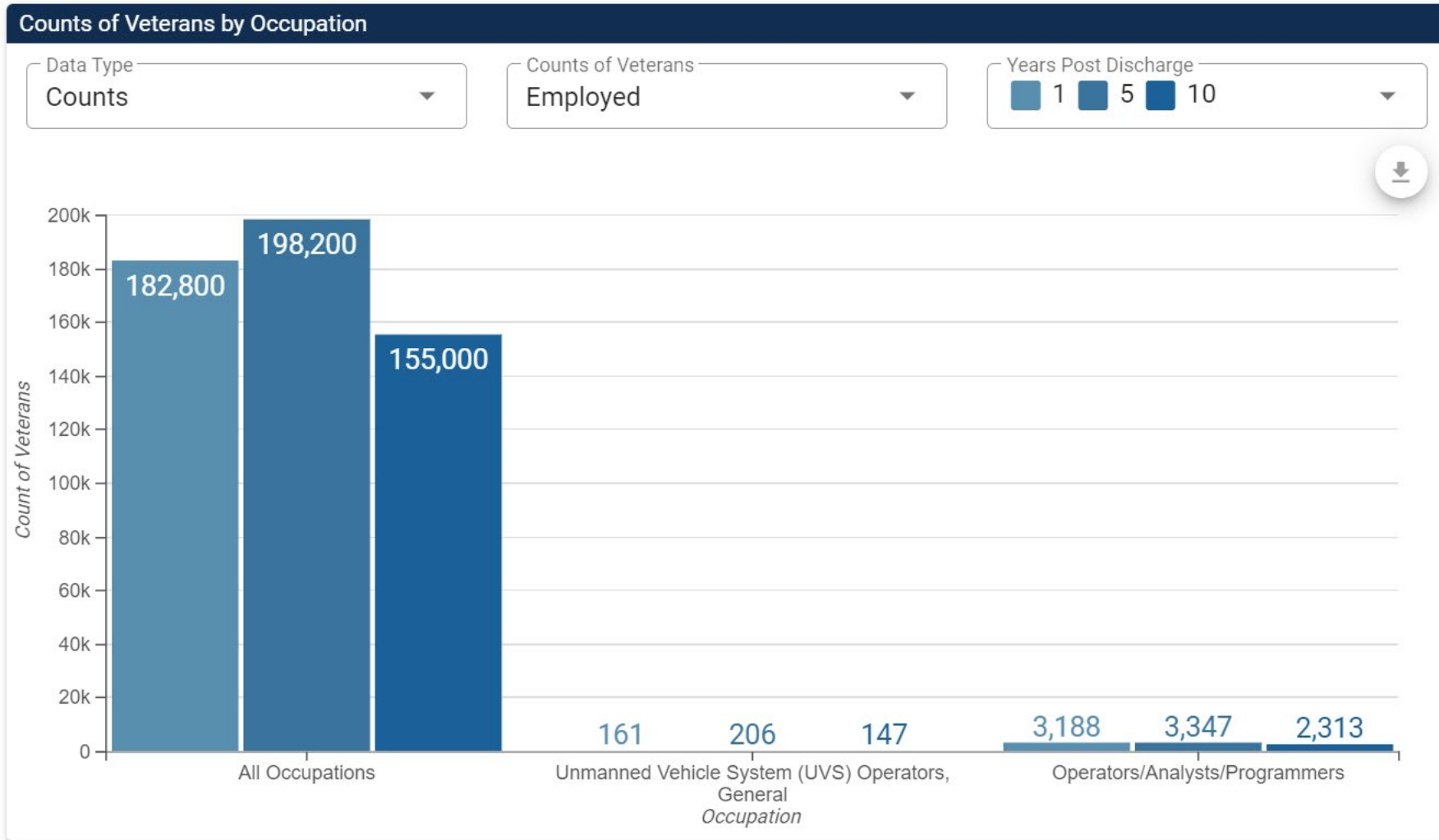


# VEO Earnings by Military Occupation

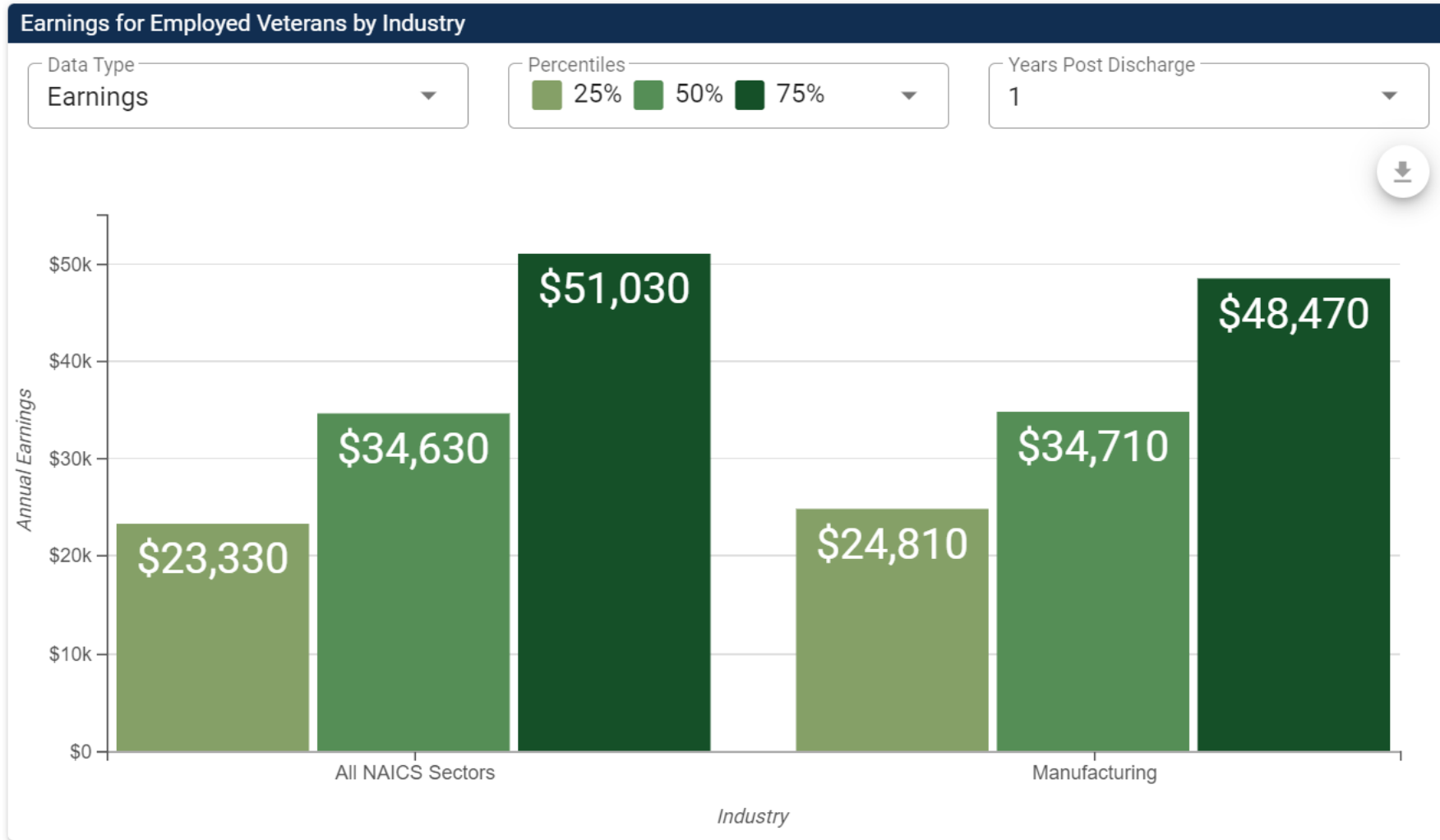




# VEO Counts of Veterans by Military Occupation



# VEO Earnings by Industry

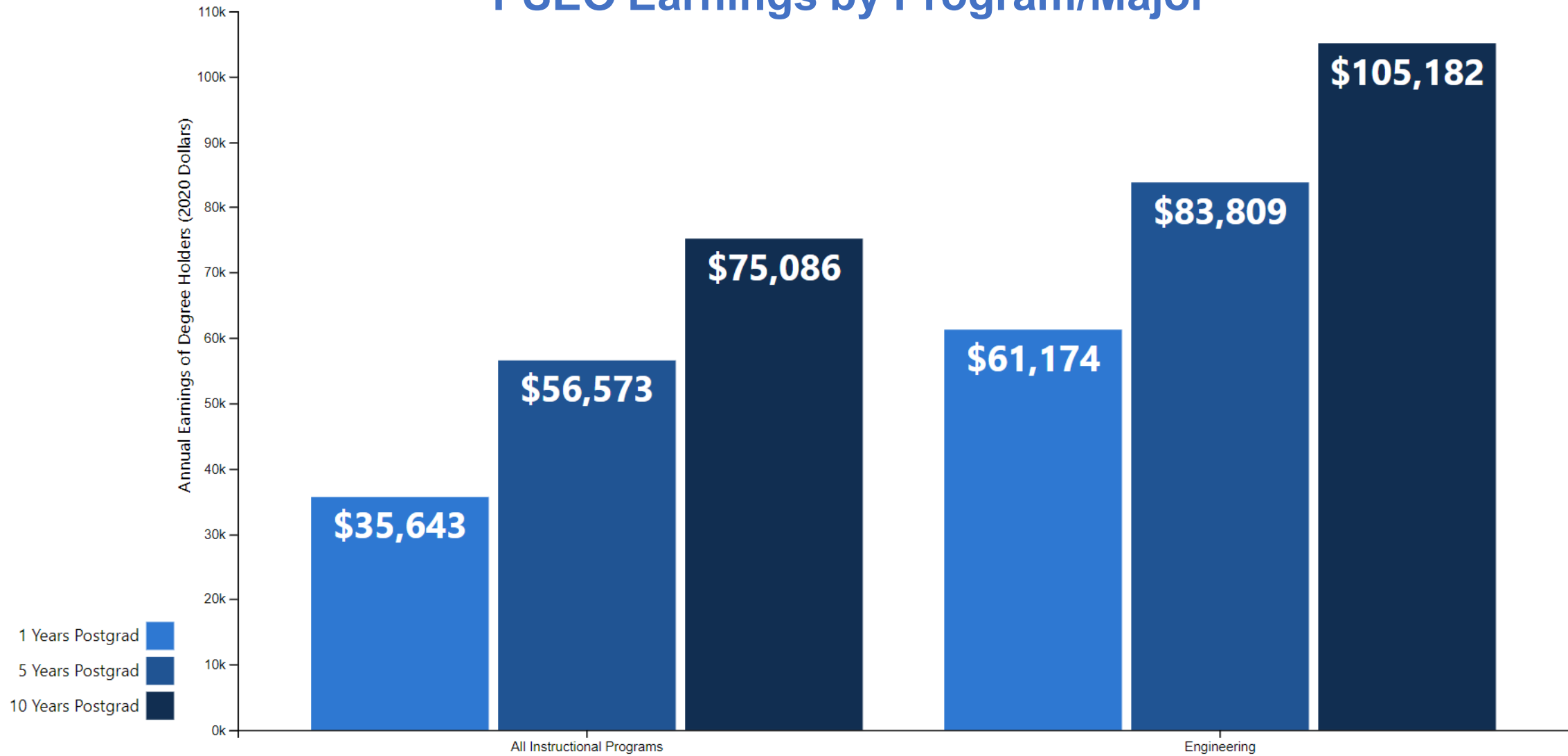


# PSEO Explorer

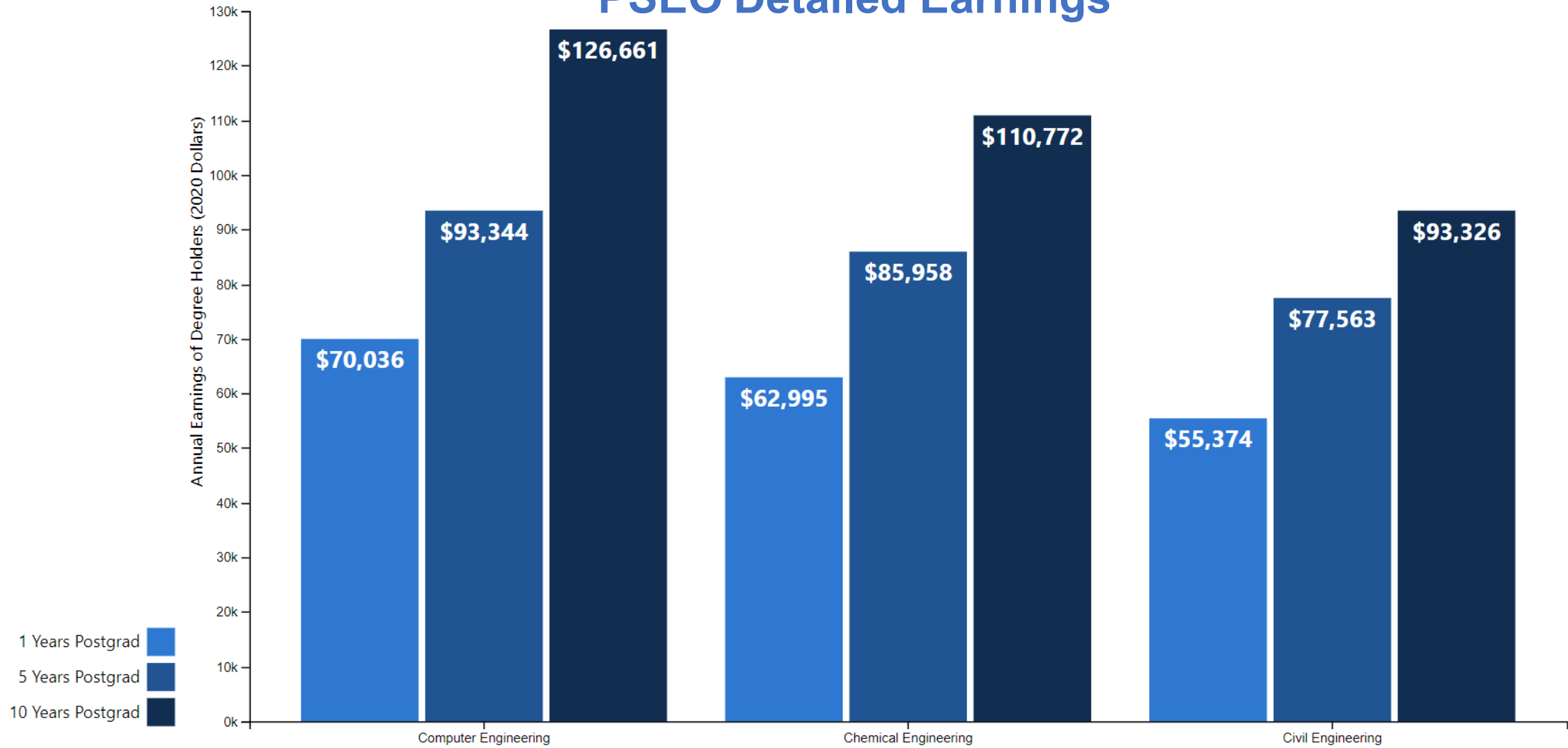
Direct link: [PSEO Explorer](#)  
or  
Search: “census college employment”



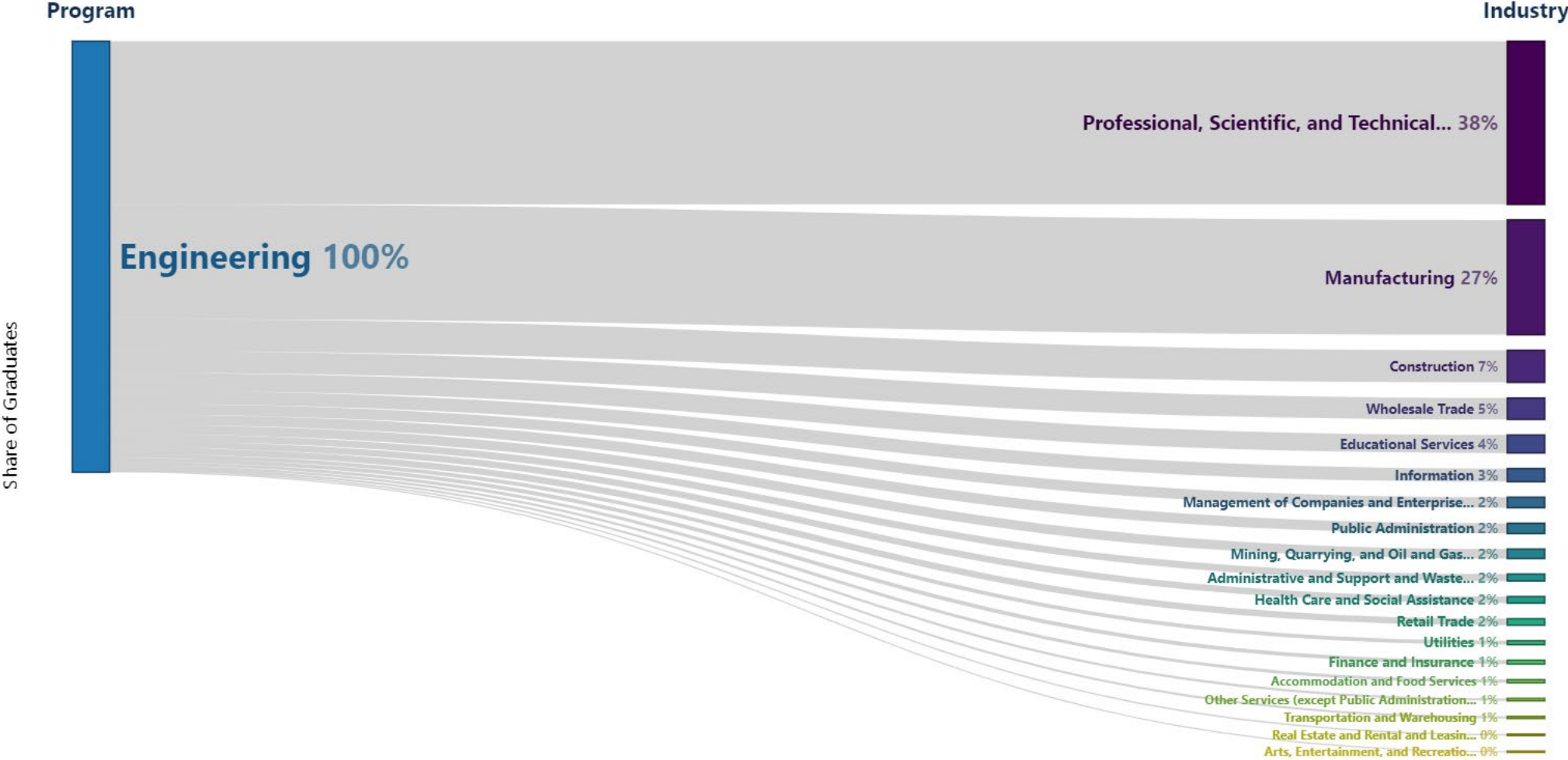
# PSEO Earnings by Program/Major



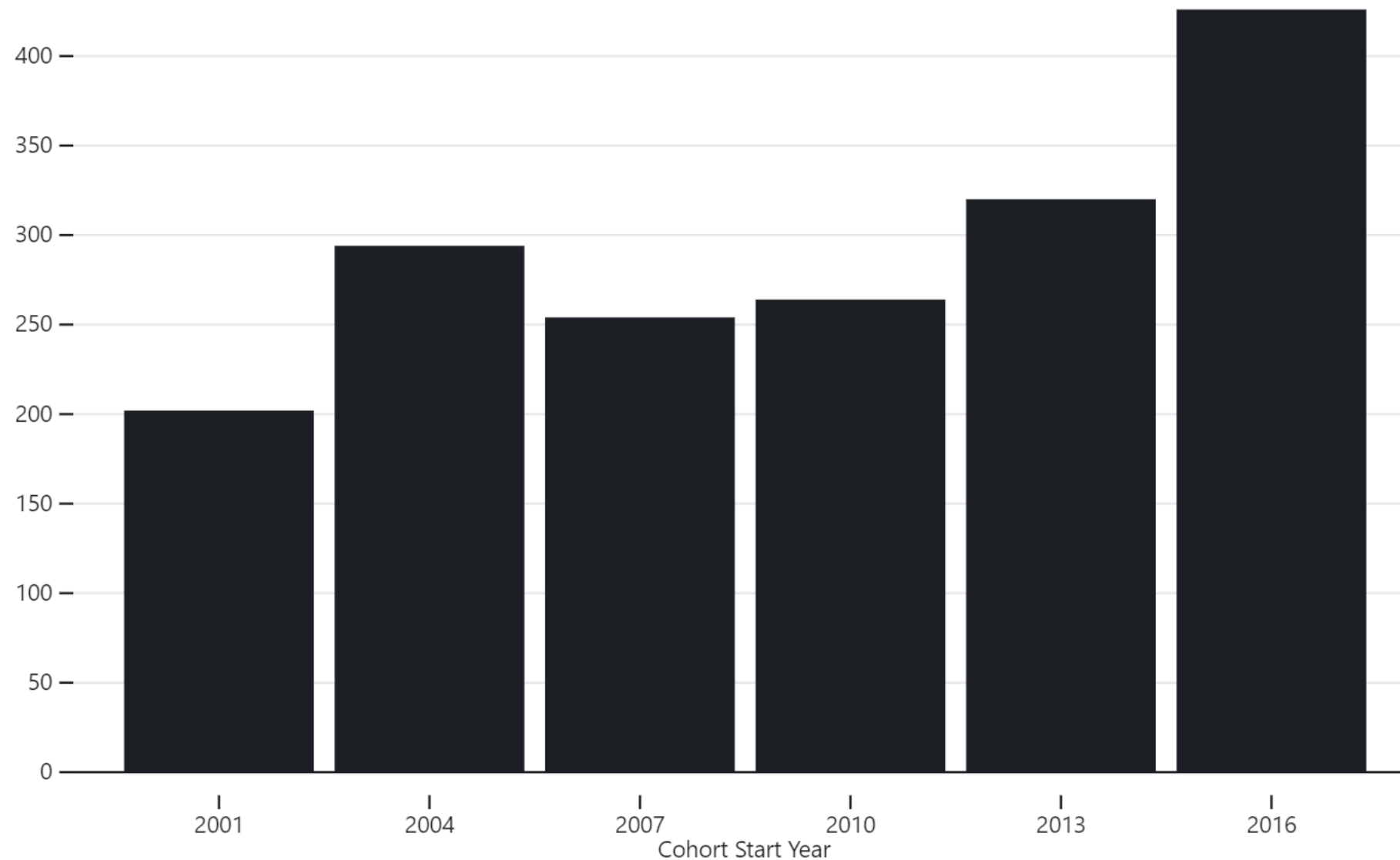
# PSEO Detailed Earnings



# PSEO Flows – Number of Graduates by Industry



University of Colorado Boulder Baccalaureate Engineering Grads Employed in Manufacturing 1 Year After Graduation





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# Summary and Resources

## Help and Documentation

### Quarterly Workforce Indicator

[lehd.ces.census.gov/applications/help/qwi\\_explorer.html](https://lehd.ces.census.gov/applications/help/qwi_explorer.html)

### Job-to-Job Flows

[lehd.ces.census.gov/applications/help/j2j\\_explorer.html](https://lehd.ces.census.gov/applications/help/j2j_explorer.html)

### OnTheMap

[lehd.ces.census.gov/applications/help/onthemap.html](https://lehd.ces.census.gov/applications/help/onthemap.html)

### OnTheMap for Emergency Management

[lehd.ces.census.gov/applications/help/onthemap\\_em.html](https://lehd.ces.census.gov/applications/help/onthemap_em.html)

### Post Secondary Employment Outcomes

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

### Veteran Employment Outcomes

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





# 2023 Local Employment Dynamics (LED) Partnership Virtual Workshop

March 28-30, 2023, 12-5pm

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Mar 28

## 2023 Local Employment Dynamics (LED) Partnership Virtual Workshop

<https://www.eventbrite.com/e/2023-local-employment-dynamics-led-partnership-virtual-workshop-tickets-518058586177>



U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU  
[census.gov](https://www.census.gov)



## LED Webinar Series

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WEBINAR

# The Disproportionate Impact of the COVID-19 Pandemic on Women in the Workforce

**SAVE THE DATE**

February 14 @ 1:30PM ET



**Patrick Clapp**

Economist at Chmura Economics  
& Analytics

United States<sup>®</sup>  
**Census**  
Bureau

United States<sup>®</sup>  
**Census**  
Bureau

# Q & A and Thank You!

Contact Information:

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**Jody Hoon-Starr**

**[Jody.Alexander.Hoon-Starr@Census.Gov](mailto:Jody.Alexander.Hoon-Starr@Census.Gov)**

For detailed questions concerning the 2020 Decennial, contact:

**301-763-INFO or 800-923-8282**

To schedule additional training with a Census Data  
Dissemination Specialist in your area, please call **844-ASK-DATA**

Or email us at: **[census.askdata@census.gov](mailto:census.askdata@census.gov)**