


# Women in Manufacturing Skilled Trades (WiMST)

February 28, 2025

Mark Martin  
BayAreaManufacturingCareers.com



- WiMST Agenda / Info  
- Implicit Assoc Test

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**Women in MFG Skilled Trades Symposium (2025)**

**GOALS:** This is an event for manufacturing companies & educators to come together to learn techniques and approaches to recruiting more women into the **manufacturing skilled trades**.

At this event, companies will:

- 1) hear directly from women in manufacturing on what attracted them and motivated them to go into manufacturing.
- 2) see examples of techniques and approaches that have been successful at recruiting women, and
- 3) learn what hasn't worked and the barriers to hiring and keeping women in a manufacturing setting.


**Date:** 2/28/2024 (Friday)  
**Location:** Chabot College  
Building 800, Room 804  
25555 Hesperian Blvd  
Hayward, CA

Registration


Start	End	Event	Speakers	Room #	Description
9:00	10:00 AM	Check-in, Breakfast & Networking		Room 804	
10:00 AM	10:05 AM	Opening Remarks / Welcome			
10:05 AM	10:15 AM	Intro			Overview of symposium Discuss mentoring group
10:15 AM	10:30 AM	<b>Manufacturing: The Facts, Trends &amp; Challenges</b>	Mark Martin (BACC, Regional Director - Mfg)		Numbers around manufacturing employment, demand, employment gap, skills gap, women in mfg, etc.
10:30 AM	11:30 AM	<b>Presentation / Breakout Session "Combating Implicit Bias in Your Workplace"</b>	Analexis (Lex) Glauide & Dr. Merrick Osborne (UC-Berkeley)		Implicit bias is an unconscious belief, feeling, or attitude about an individual based on one or more of their identity groups (race, gender, nationality, sexual orientation, etc.). In this workshop, we will discuss how to identify implicit bias and provide you with tools to help you address it in the workplace.
11:30 AM	12:00 PM	<b>Presentation "Potential for Using AI to Increase the Number of Women in the Mfg Skilled Trades"</b>	Angel Fuentes (Evergreen Valley College)		Are there ways for AI to help companies and colleges attract more women into manufacturing by improving job postings, websites, outreach materials? Or increase retention through better HR policies, assessments, etc.? In this session we'll learn a little about AI and it's potential.
12:00 PM	12:45 PM	Lunch & Networking		Room 804	
12:45 PM	1:30 PM	<b>Breakout Discussion: Brainstorm on Approaches / Best Practices</b>	Breakout into groups of 6-10. Discuss and brainstorm on best practices, potential new ideas	Rooms 804, 805, 807	
1:30 PM	2:00 PM	<b>Report Outs</b>	Reports from groups.		
2:00 PM	2:40 PM	<b>Tour of Chabot College Mfg Shops</b>			

**Partners:**  
Bay Area Community Colleges  
AMBayArea  
Workforce Development Boards


**Sponsor:**  
Thanks to Autodesk for their assistance in sponsoring this event.



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COMMUNITY COLLEGES









**CHABOT COLLEGE**



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ASSOCIATION OF MANUFACTURERS BAY AREA



**AUTODESK**

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# Agenda

10:00 am	Welcome
10:10	<b>Mfg Facts &amp; Trends</b> <b>Women in the Workforce</b>
10:30	Presentation: <b>“Combating Implicit Bias in Your Workplace”</b>
11:30	Presentation: <b>“Potential for Using AI to Increase the Number of Women in the Mfg Skilled Trades”</b>
Noon	<b>LUNCH</b>
12:45 pm	Breakout: <b>“Brainstorm on Approaches / Best Practices”</b>
1:30	Report Outs
2:00	Tour: <b>Chabot Manufacturing</b>

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# Sponsors

- Bay Area Community Colleges
  - Special thanks to Chabot College
- Association of Manufacturers Bay Area (AMBayArea)
- East Bay Workforce Development Boards
- Autodesk

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# Welcome

- Liisa Pine-Schoonmaker
  - Chabot College, Welding Faculty
  
- Mark Martin
  - Bay Area Community Colleges, Regional Director - Mfg

Thanks to Dean Tracy Coleman & Kaela Knight!

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## Bay Area Community Colleges

- Bay Region CC's (28)
  - Manufacturing Programs (16)
  - Manufacturing-related Programs (7)



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BayAreaManufacturingCareers.com



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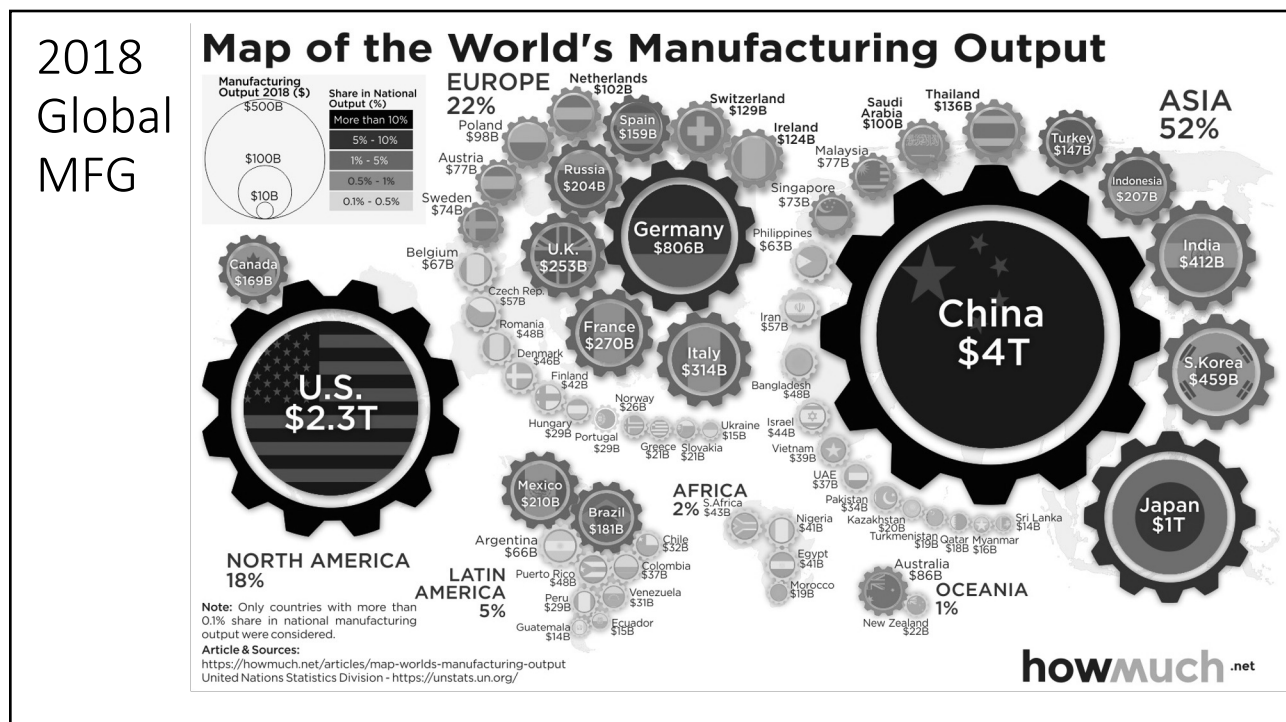
- Manufacturing Facts & Trends
- Women in the Workforce

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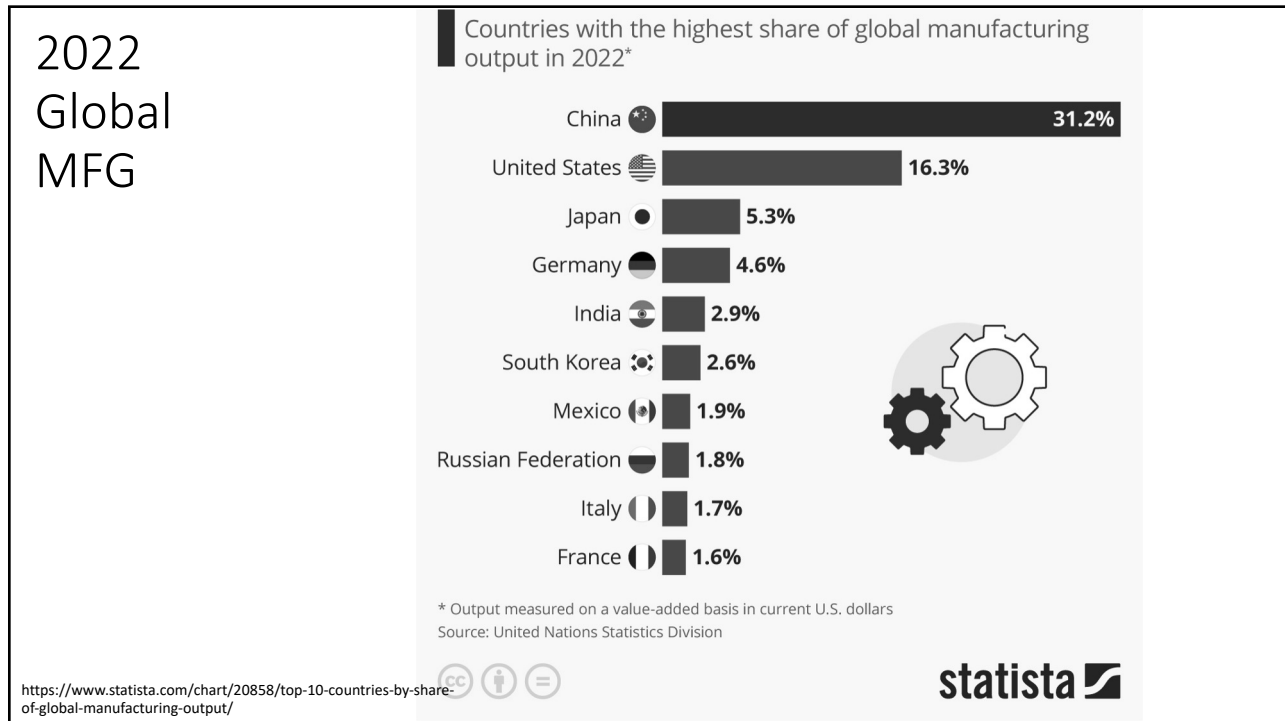
# Manufacturing

- Global
- US
- California
- Bay Area

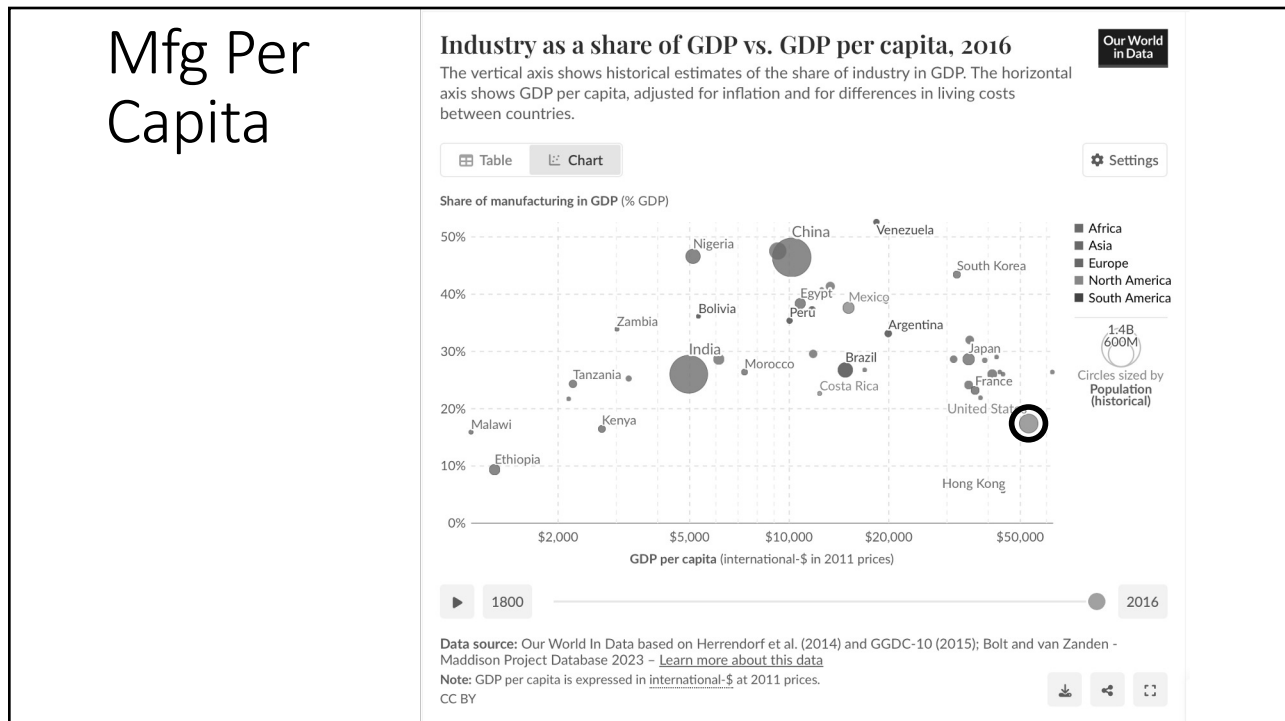
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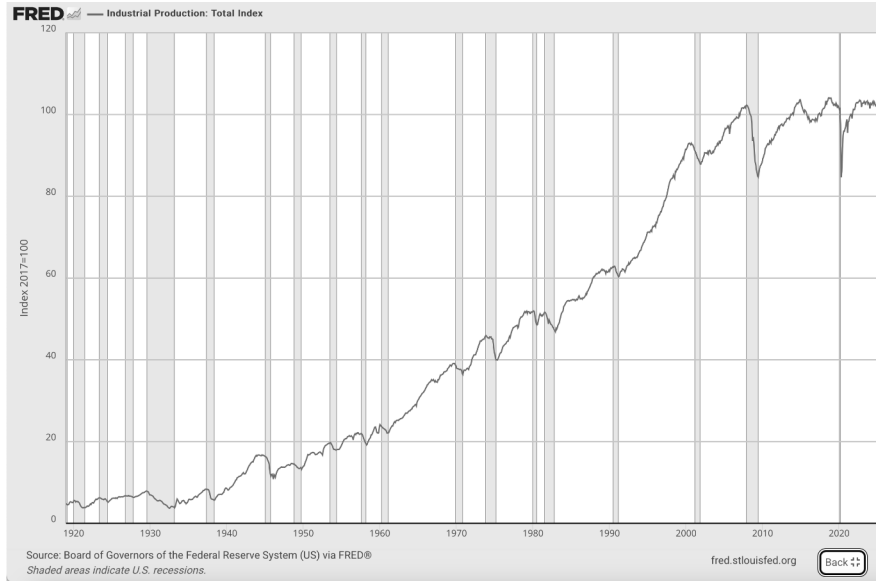


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# US Manufacturing (1919 – 2025)



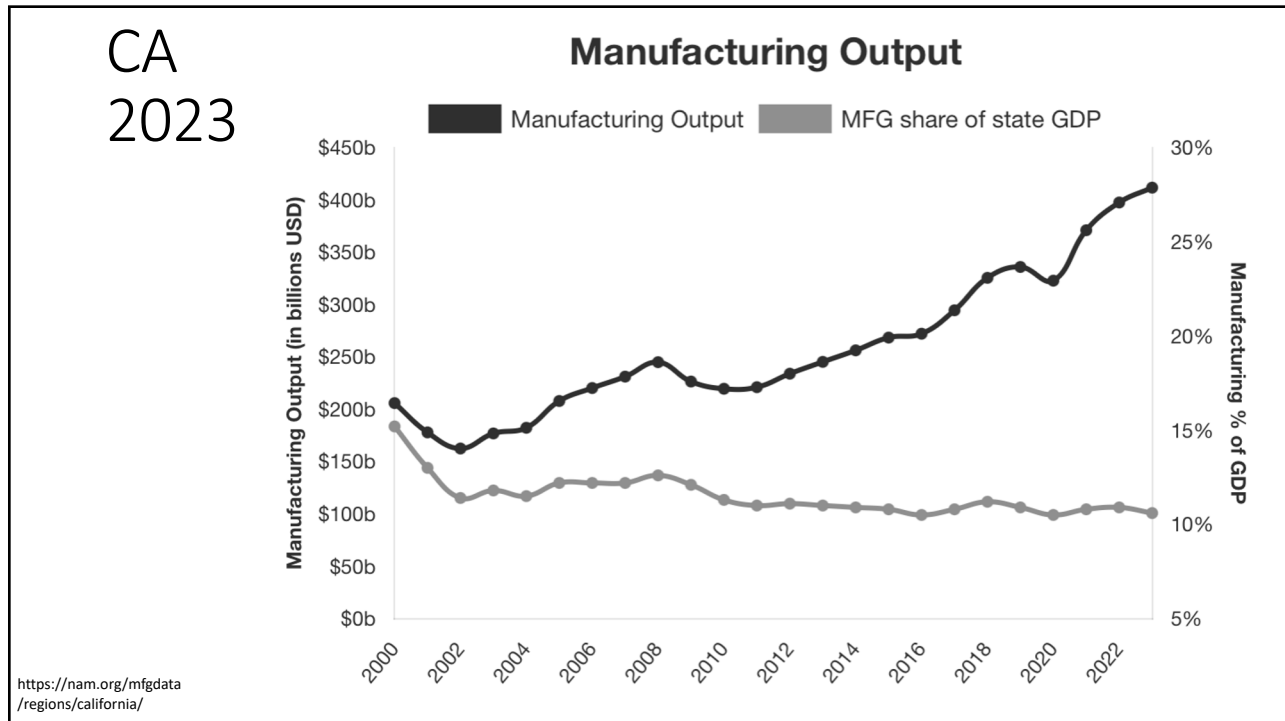
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# California Manufacturing (2018 vs 2023)

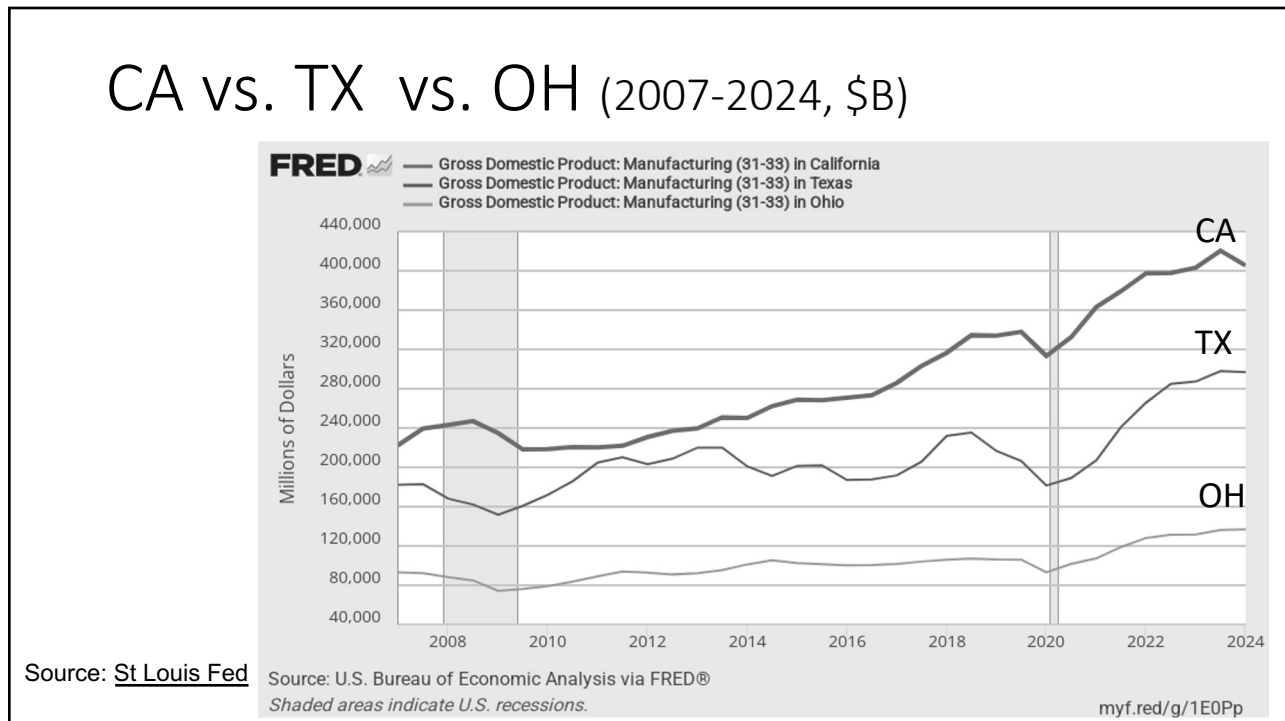
	<u>2018</u>	<u>2023</u>
• Total Manufacturing Output	\$317 B	\$412 B
• % share of total gross state product	11%	11%
• CA Employment	1.3 M	1.2 M
• Bay Area Mfg Firms		5,500
		approx. 25% of CA mfg firms (22k)

Sources:  
U.S. Bureau of Economic Analysis and the U.S. Census Bureau  
<https://nam.org/state-manufacturing-data/>

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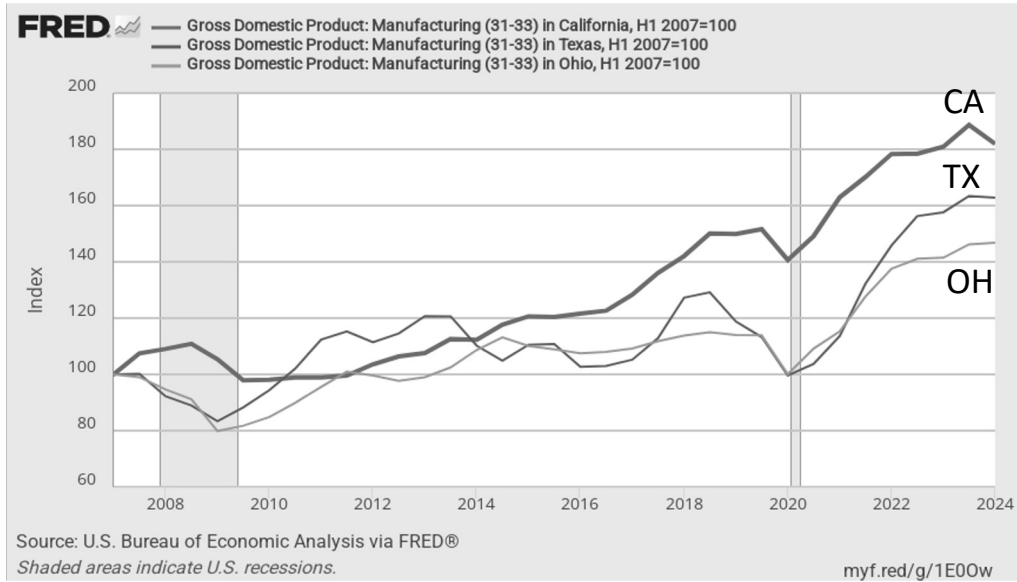
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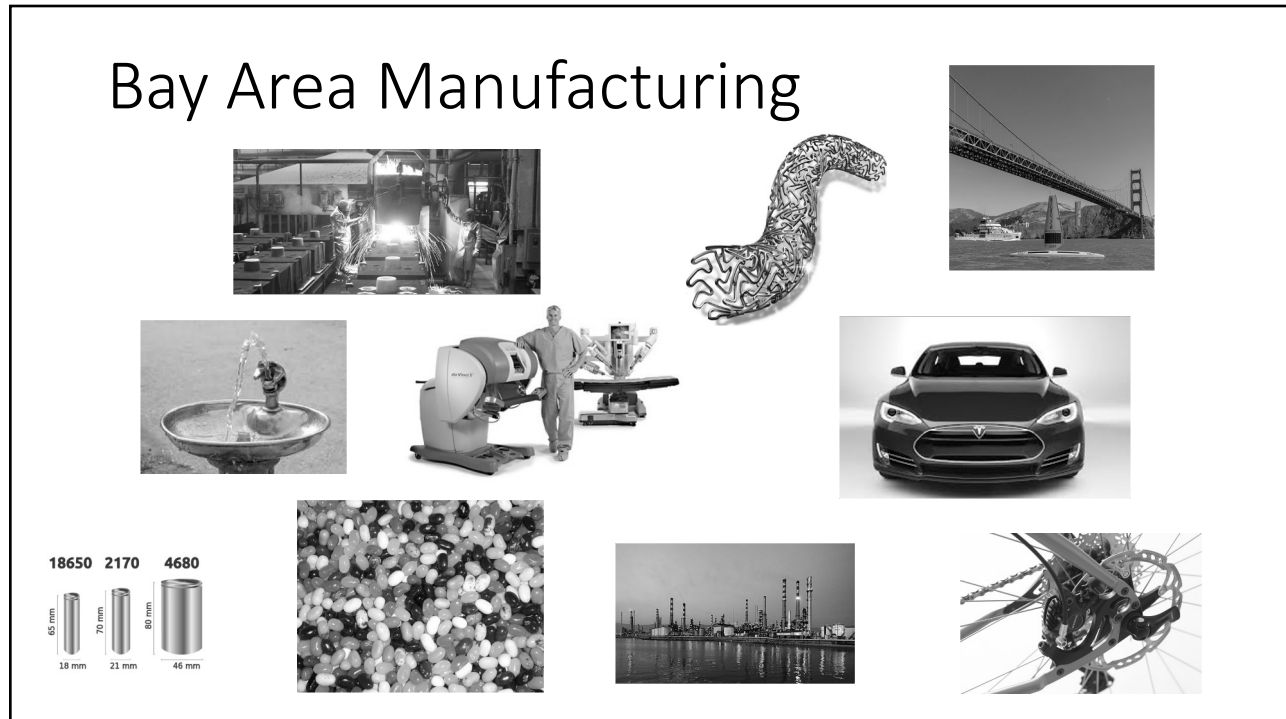
# CA vs. TX vs. OH (index = 2007)



Source: St Louis Fed

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# Bay Area Manufacturing



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## Bay Area Clean Energy Companies (just a sample)

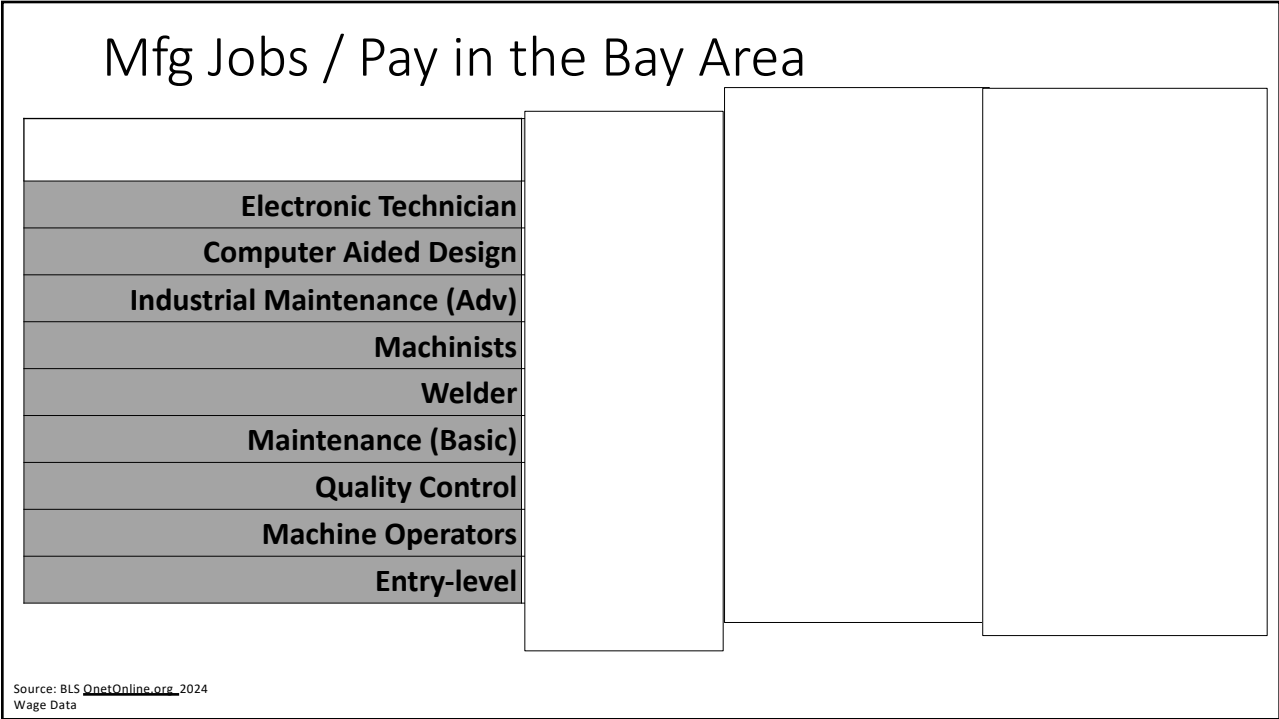
<b>Ample</b>	Battery tech	<b>Natel Energy</b>	
<b>Amprion Technologies</b>	Batteries	<b>Ni-Cad Systems, Inc</b>	Green
<b>Antora Energy</b>	Thermal battery	<b>Nitricity</b>	
<b>Bloom Energy</b>		<b>Noria Energy Holding LLC</b>	Energy storage and distribution
<b>Blue Current, Inc.</b>	Ocean energy systems	<b>Nuro</b>	EV Autonomous
<b>BoxPower</b>	Renewable energy microgrids	<b>Planted Solar</b>	Solar energy solutions
<b>Brimstone</b>		<b>Pyka</b>	Autonomous plane
<b>Coreshell</b>	Battery (materials - CEC grant)	<b>Qnovo</b>	Batteries
<b>Coreshell Technologies</b>	Nanotechnology for energy applications	<b>Range Energy</b>	Batteries
<b>Coulomb Solutions</b>	Battery management systems	<b>Rincell</b>	Battery (CEC grant)
<b>Cuberg</b>	Batteries	<b>Sila Nano</b>	Battery tech
<b>Enduring Planet</b>	Green	<b>SolarFlexes</b>	Flexible solar panels
<b>Energy Recovery</b>	Welding	<b>Sparkz</b>	Batteries
<b>Envue</b>	Battery tech (metal-H)	<b>Sunfolding</b>	Solar tech
<b>Enovix</b>		<b>Surplus Service</b>	
<b>Enzinc</b>	Zinc-based energy storage	<b>Swift Solar</b>	Next-generation solar technology
<b>Form Energy</b>	Battery tech (iron-air)	<b>Sylvatex</b>	Battery (CEC grant)
<b>Harvest Thermal</b>	Thermal energy storage systems	<b>Tandem PV</b>	Solar cells (CEC grant)
<b>Ionblox</b>	Solid-state battery technology	<b>Tesla</b>	
<b>Kairos Power</b>	Nuclear	<b>Twelve</b>	CO2 --> materials
<b>Lilac Solutions</b>	Battery tech	<b>Verdagay</b>	Hydrogen (green)
<b>LTA Research</b>	Airships	<b>Verne H2</b>	
<b>Mainspring Energy</b>	CO2 reduction	<b>Voltpost</b>	Electric vehicle charging solutions
<b>Monarch Tractors</b>		<b>Wrightspeed</b>	Electric powertrain technology
		<b>Zelos Energy LTD</b>	Sustainable energy development

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## Bay Area Skilled Trades Jobs (12 counties, 2019)

- Total Bay Area Jobs 4.6 M (100%)
- Skilled Trades\* (incl. auto/construct.) 460,000 (10%)
- Skilled Trades (mfg, mfg-related) 146,000 (3%)
- Engineers 87,000
- Nurses 127,000

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## 10 Hardest Jobs to Fill (2011)

1. Skilled Trades
2. Sales Representatives
3. Engineers
4. Drivers
5. Accounting and finance Staff
6. IT Staff
7. Management / Executives
8. Teachers
9. Administrative Staff
10. Machinist

Manpower Survey - <http://us.manpower.com>

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## 10 Hardest Jobs to Fill (2014)



Manpower Survey - <http://us.manpower.com>

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# 10 Hardest Jobs to Fill (2018)

**Which Roles Are Most Difficult to Fill in the United States?**

Technology is redefining, rather than replacing, in-demand roles. Skilled trades – electricians, welders, mechanics and more – as well as drivers, sales representatives, health care professionals and teachers are ranked some of the most difficult roles to fill.

<b>1 Skilled trades</b> electricians, welders, mechanics	<b>2 Drivers</b> truck, delivery, construction, mass transit	<b>3 Sales representatives</b> B2B, B2C, contact center	<b>4 Health care professionals</b> doctors, nurses, other non-nursing health professionals	<b>5 Teachers</b>
<b>6 Office support</b> administrative assistants, PAs, receptionists	<b>7 Technicians</b> quality controllers, technical staff	<b>8 Management/executive</b>	<b>9 Restaurants/Hotel staff</b>	<b>10 Manufacturing</b> production and machine operators

Manpower Survey - <http://us.manpower.com>

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## Shortage of Mfg Employees (2022)

### 2.1 Million Manufacturing Jobs Could Go Unfilled by 2030

By NAM News Room | May 4, 2021 1:27pm



Home > Publications > Regional Economist

## Labor Constraints Remain Greatest Challenge for Resurgent Manufacturing Sector

July 13, 2022

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### Factory Jobs Are Booming Like It's the 1970s

U.S. manufacturing is experiencing a rebound, with companies adding workers amid high consumer demand for products.

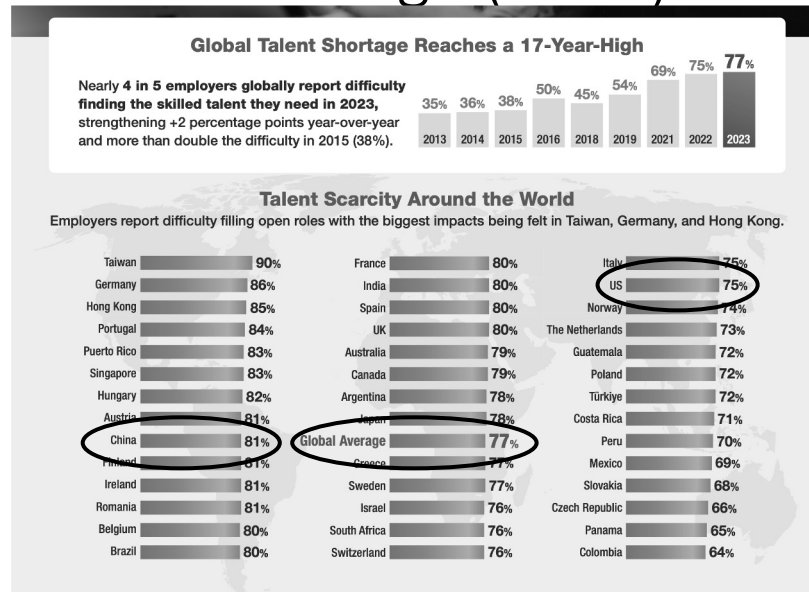
Give this article 561



A furniture factory in Hickory, N.C. Data suggest the rebound is largely a product of the pandemic recession and recovery. Travis Dove for The New York Times

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# Worldwide Talent Shortage (2023)



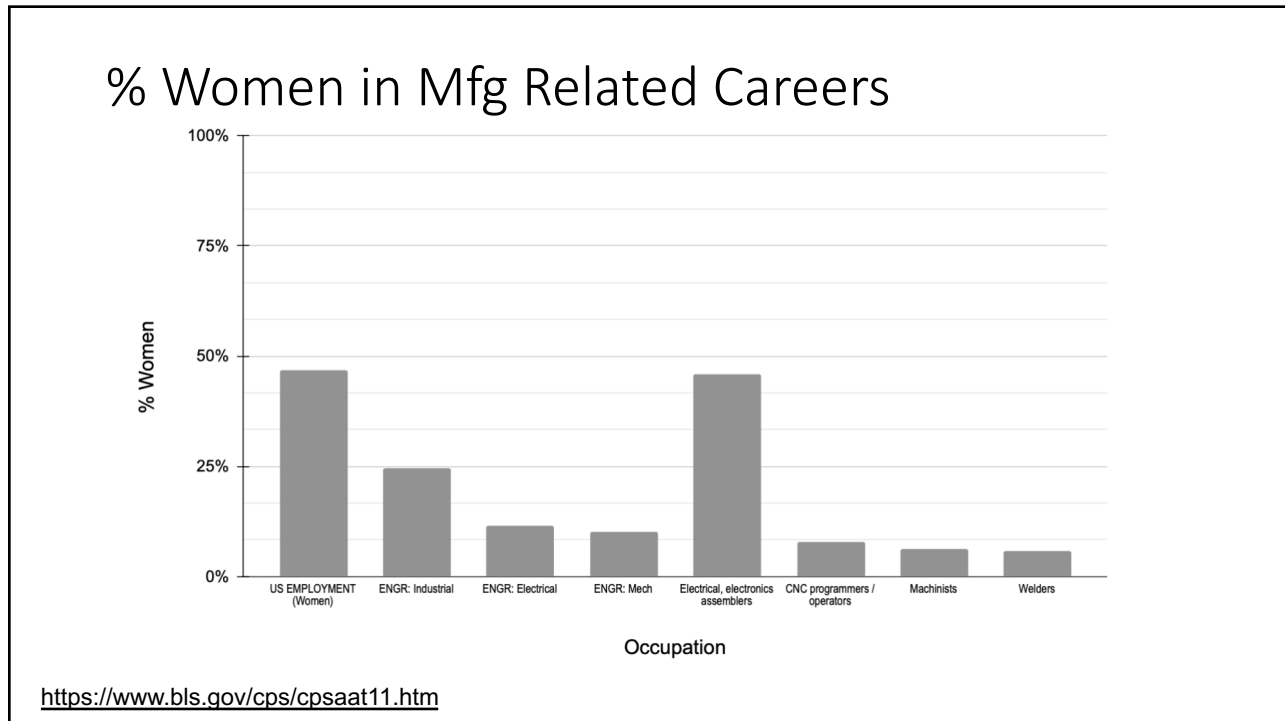
Manpower Group Research (2023)

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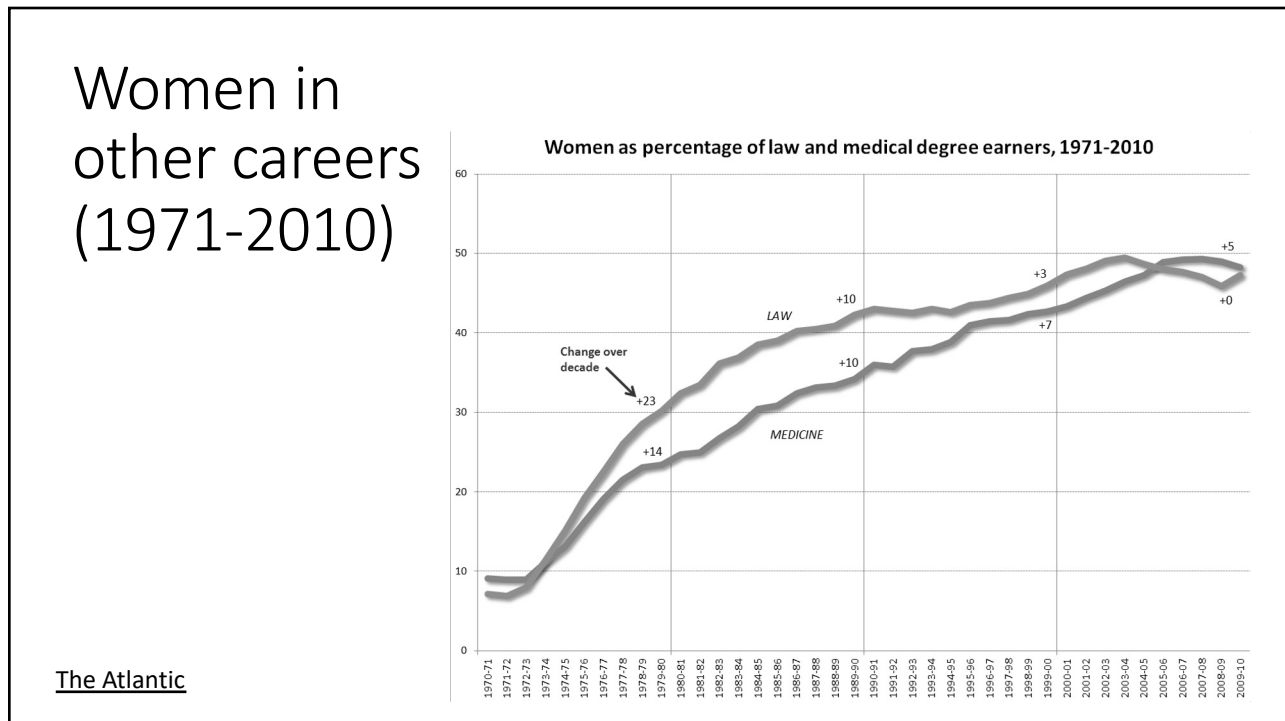
We need more employees in skilled trades manufacturing careers

Hmmm, I wonder if there's a potential untapped pool somewhere

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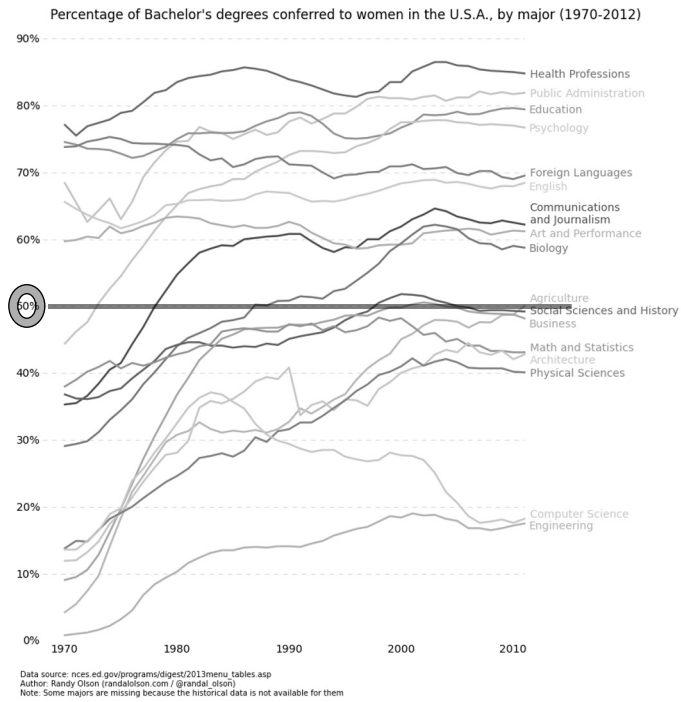


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# Women in other careers (1971-2010)

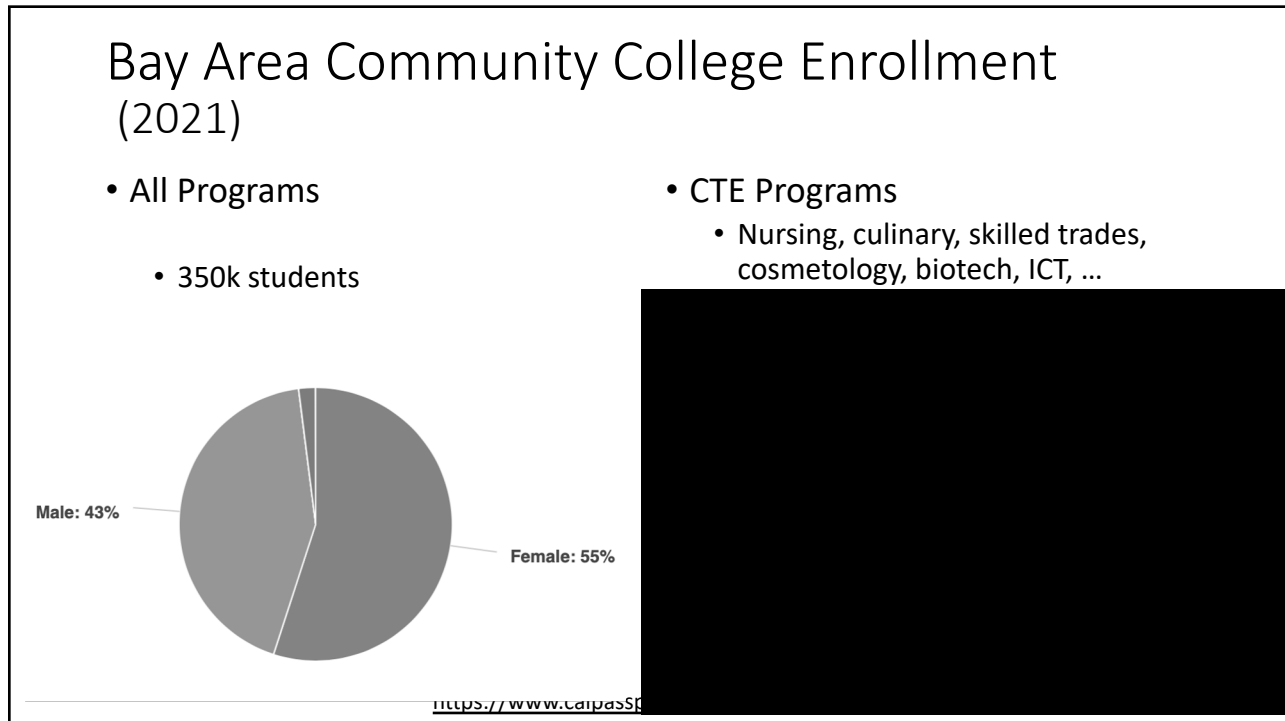


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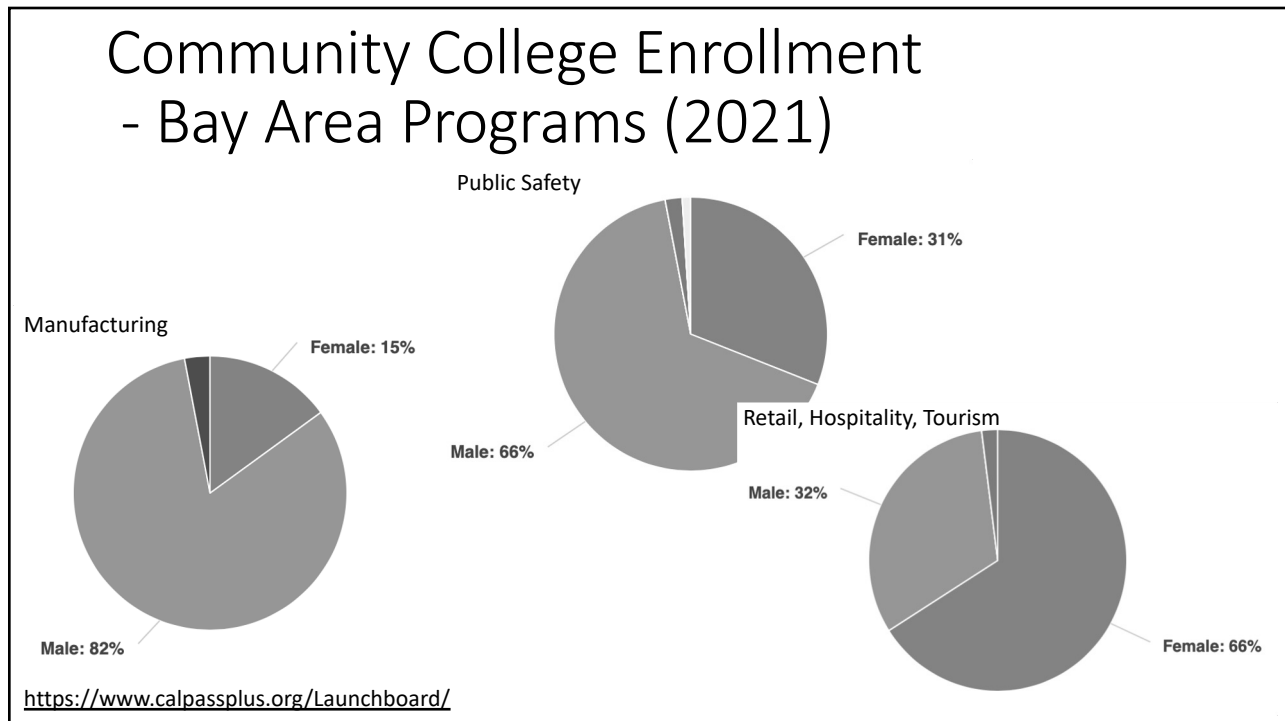
# Community Colleges & Women

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Lots of room for growth in these numbers for WiMST

What can we do to attract, and retain, more women into these careers?

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## Combating Implicit Bias in Your Workplace

Analexis Glaude  
- UC-Berkeley Haas PhD student

Dr. Merrick Osborne  
- UC-Berkeley Haas Postdoctoral Scholar

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## Breaking WiMST Barriers with AI

Ángel Fuentes

- Division Dean of Business and Workforce Development
- Evergreen Valley College

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## Lunch Time

- Return by 12:45
- We have Vegetarian & GF / Vegan lunches for **those who requested**

### MENU

#### Sandwiches

Ham  
Roast Beef  
Turkey  
Tuna salad  
BBQ Chicken  
Roast Garlic Chicken  
Chipotle Chicken

Fresh veggie w/ avocado  
Caprese (Veg)

#### Pizza

#### SIDES

Fruit, chips, cookies

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## Brainstorm on Approaches / Best Practices

- Breakout into groups of 5 - 8
- Rooms across the hall (805, 807) are also available
- Brainstorm on these questions:
  - How can we get more women into the manufacturing skilled trades?
  - How can we retain women in these companies / careers?
  - What have you seen implemented at companies / organizations? And what has worked or not worked?
    - We're looking for new ideas as well as what you've seen work.
    - We'll compile these and use for future sessions
    - **Designate someone to put your input in the Google form →→**
      - [BayAreaManufacturingCareers.com/wimst.html](https://www.bayareamanufacturingcareers.com/wimst.html)
- **Return here by 1:30**



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## Report Outs

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## Next Steps

- WiMST Tours
- Mentorship sign-ups
- Build community
- ??

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## Shop Tours

- Please step outside the classroom if interested in taking a tour of some of the shops
- Leave in 5 minutes

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