



Revolutionizing the Face  
of Technology



# *Innovation, Diversity, and Unconscious Bias*

ISPCS 2015

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NCWIT Strategic Partners:



NCWIT Investment Partners:



# Innovation

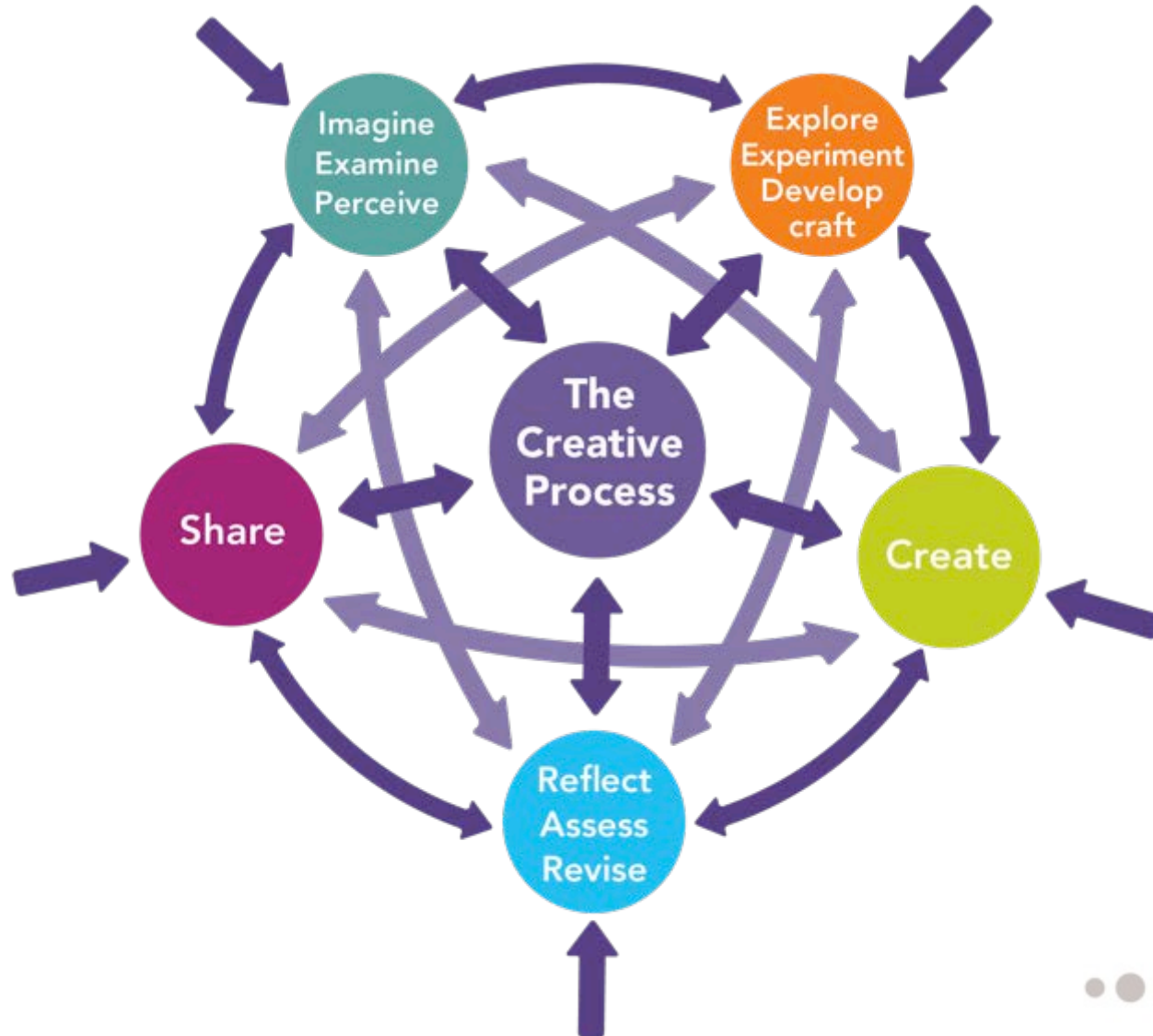
Requires

# Diversity

# Innovation – A Complex Process



# Does the Composition of Technical Teams Matter?



# Diversity Benefits Creativity

Groups with **greater diversity** solve complex problems **better and faster** than homogenous groups.



BETTER AND FASTER  
PROBLEM SOLVING

# Women Improve Innovation

A group's collective intelligence is not predicted by the IQs of its individual members. But if a group includes more women, its collective intelligence rises.

"Evidence for a Collective Intelligence Factor in the Performance of Human Groups," Science October 2010, Woolley, Chabris, Pentland, Hashmi and Malone.



# Nationally



**WOMEN COMPRISE**  
**57%** of U.S. Professional  
Occupations



**WOMEN HOLD**  
**26%** of U.S. Technology  
Jobs



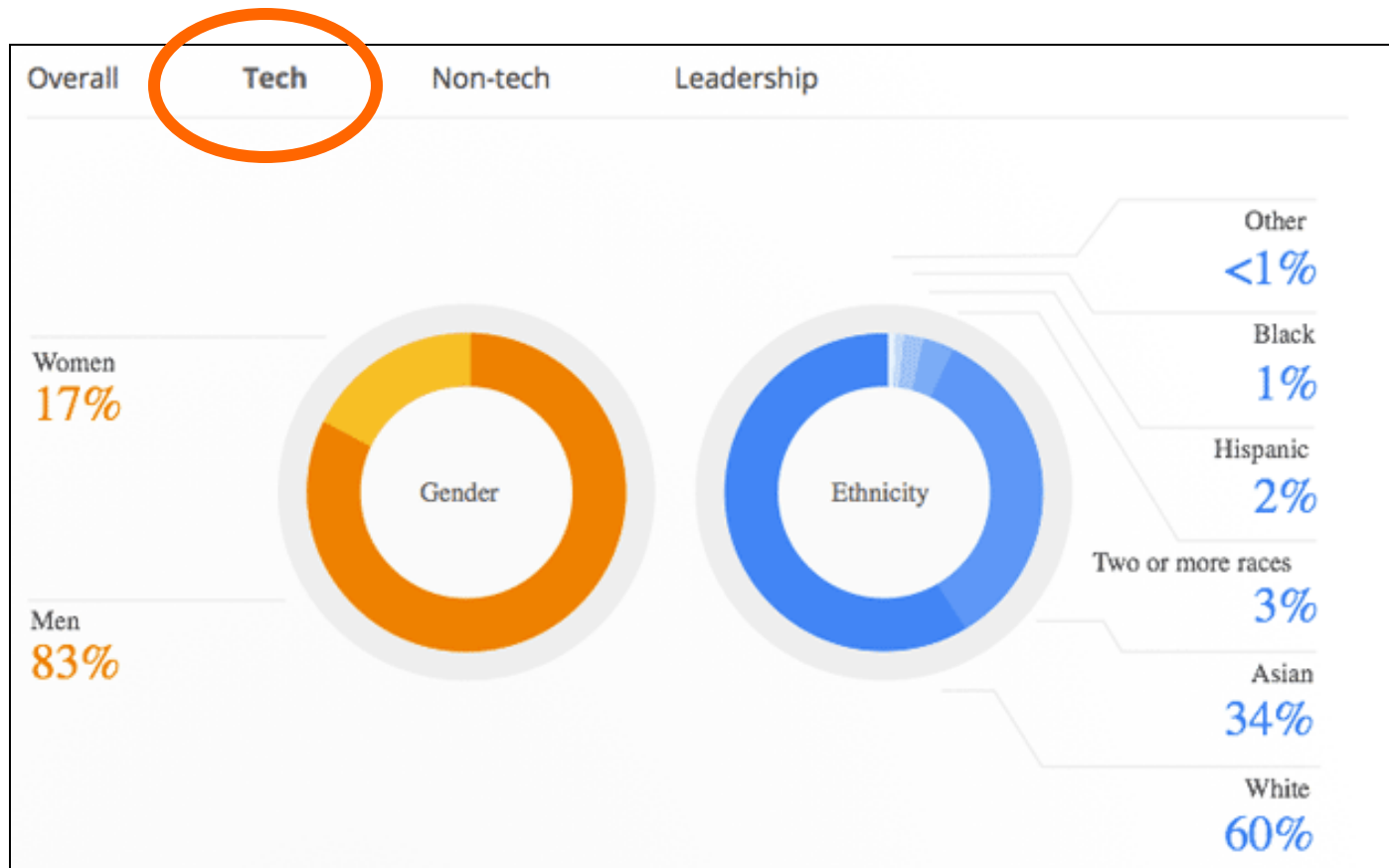
**WOMEN MAKE UP**  
**19%** of U.S. Software  
Developers



Only **5%** of **TECHNOLOGY**  
**LEADERSHIP** Jobs Are  
Held by Women



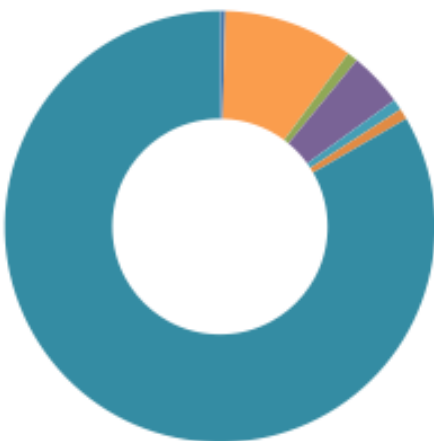
# Google – Released June 2014





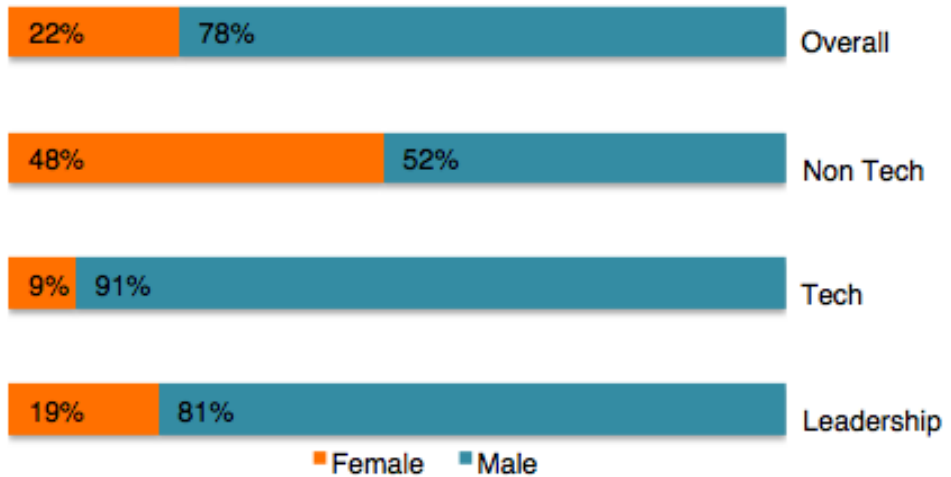
# Sendgrid – Released September 2014

Ethnicity



- .4 % American Indian or Alaska Native
- 10 % Asian
- .8 % Black or African American
- 4 % Hispanic or Latino
- .8 % Native Hawaiian or Other Pacific Islander
- .8 % Two or more races
- 83 % White

Gender



# Diversity Overall in Tech



**Black & Hispanics Comprise**  
**30% of U.S. Population**



**Black & Hispanic Men**  
**Hold 9% of U.S.**  
Computing Jobs



**Black & Hispanic Women**  
**Hold 4% of U.S. Computing**  
Jobs



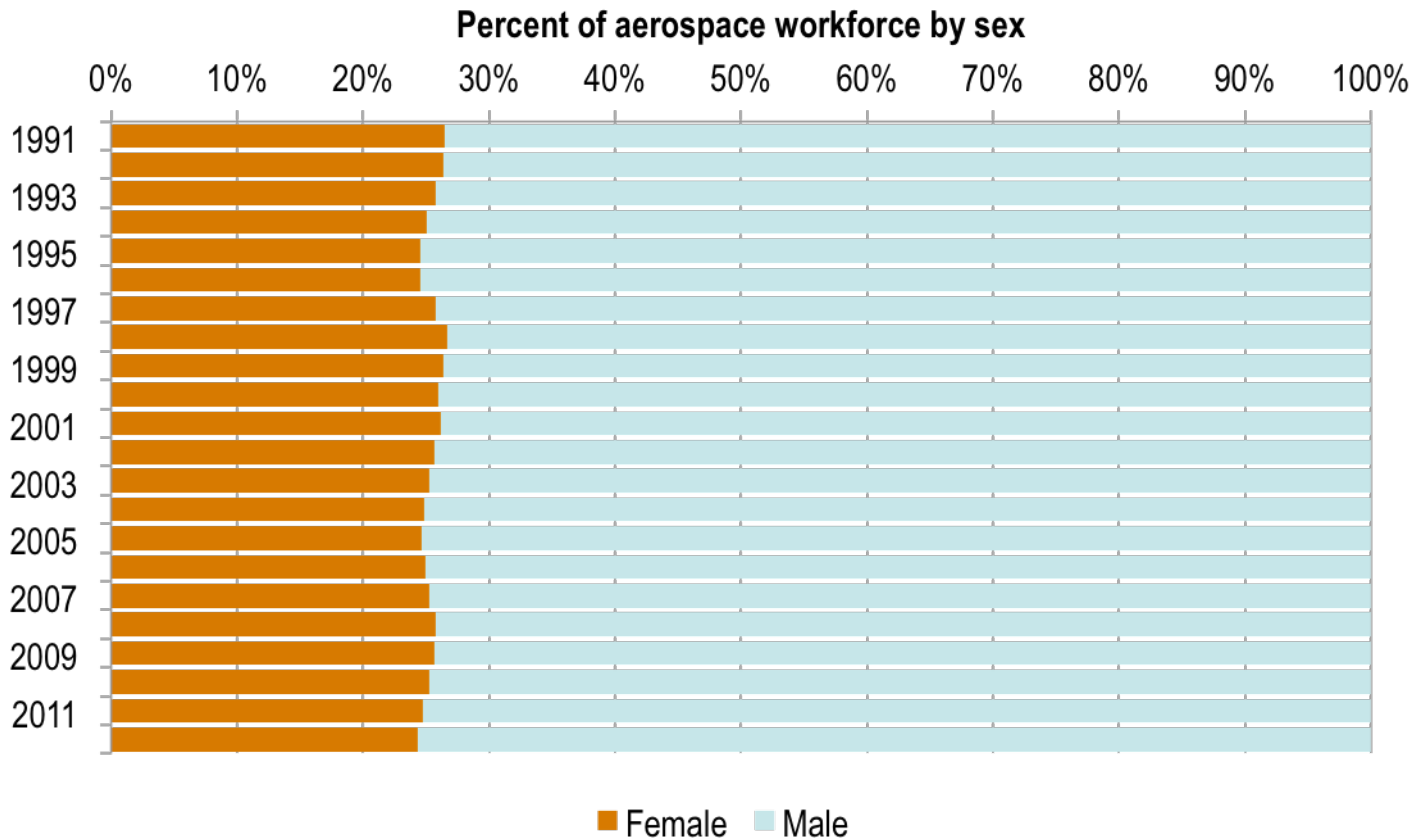
# Top Aerospace Employers by State

State	Employment <a href="#">(1)</a>	Employment per thousand jobs	Location quotient <a href="#">(9)</a>	Hourly mean wage	Annual mean wage <a href="#">(2)</a>
<a href="#">California</a>	15,140	1.00	1.96	\$54.24	\$112,810
<a href="#">Washington</a>	8,540	2.95	5.76	\$52.33	\$108,850
<a href="#">Texas</a>	6,990	0.62	1.22	\$52.49	\$109,170
<a href="#">Ohio</a>	4,640	0.89	1.74	\$48.26	\$100,380
<a href="#">Alabama</a>	3,550	1.91	3.74	\$51.08	\$106,240

# Top Aerospace Concentrations

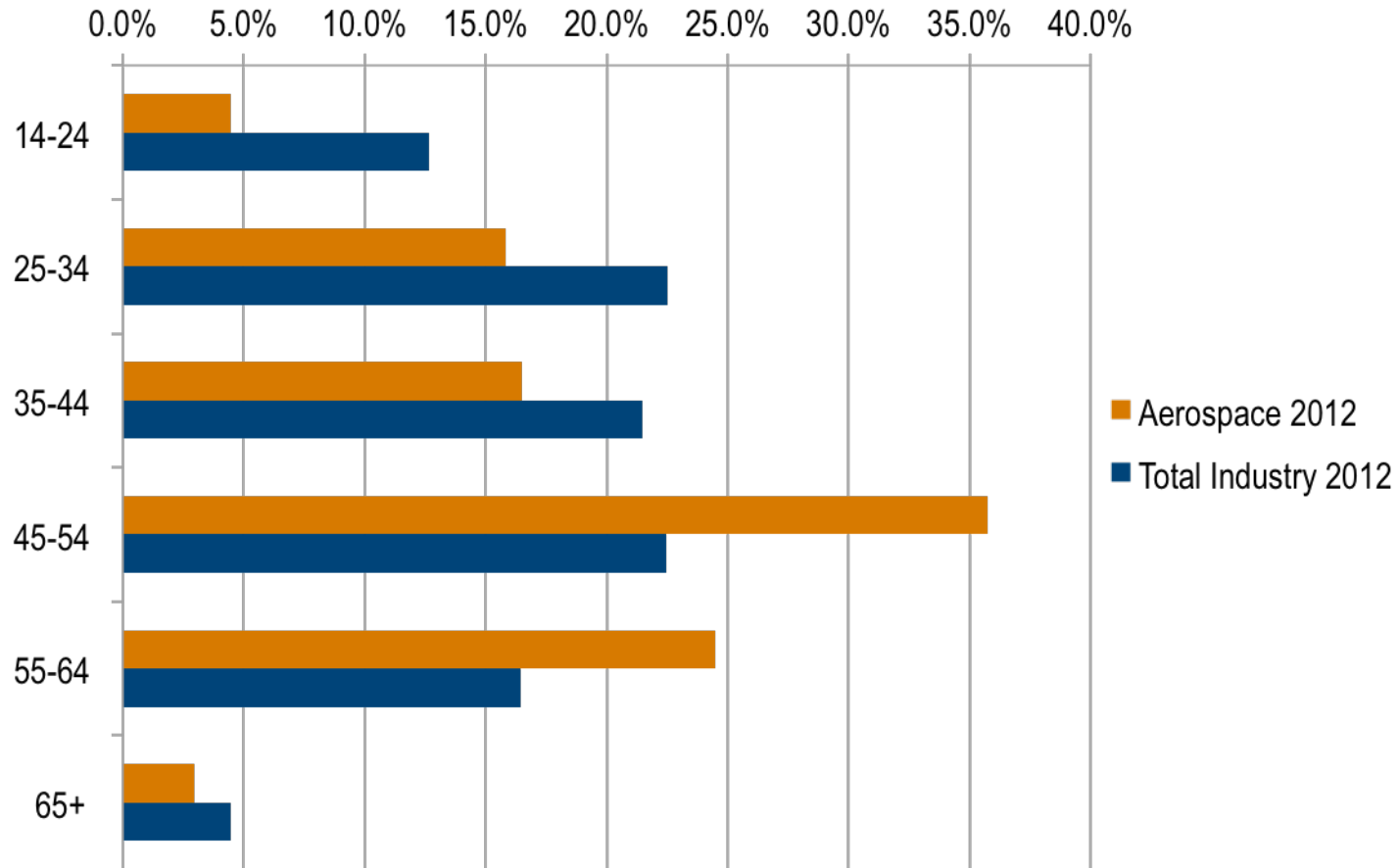
State	Employment (1)	Employment per thousand jobs	Location quotient (9)	Hourly mean wage	Annual mean wage (2)
<a href="#">Washington</a>	8,540	2.95	5.76	\$52.33	\$108,850
<a href="#">Kansas</a>	2,930	2.16	4.22	\$47.73	\$99,280
<a href="#">Alabama</a>	3,550	1.91	3.74	\$51.08	\$106,240
<a href="#">Maryland</a>	2,800	1.09	2.14	\$57.92	\$120,460
<a href="#">Colorado</a>	2,360	1.00	1.95	\$59.14	\$123,010

# Proportion of Women in Aerospace: Consistently Low



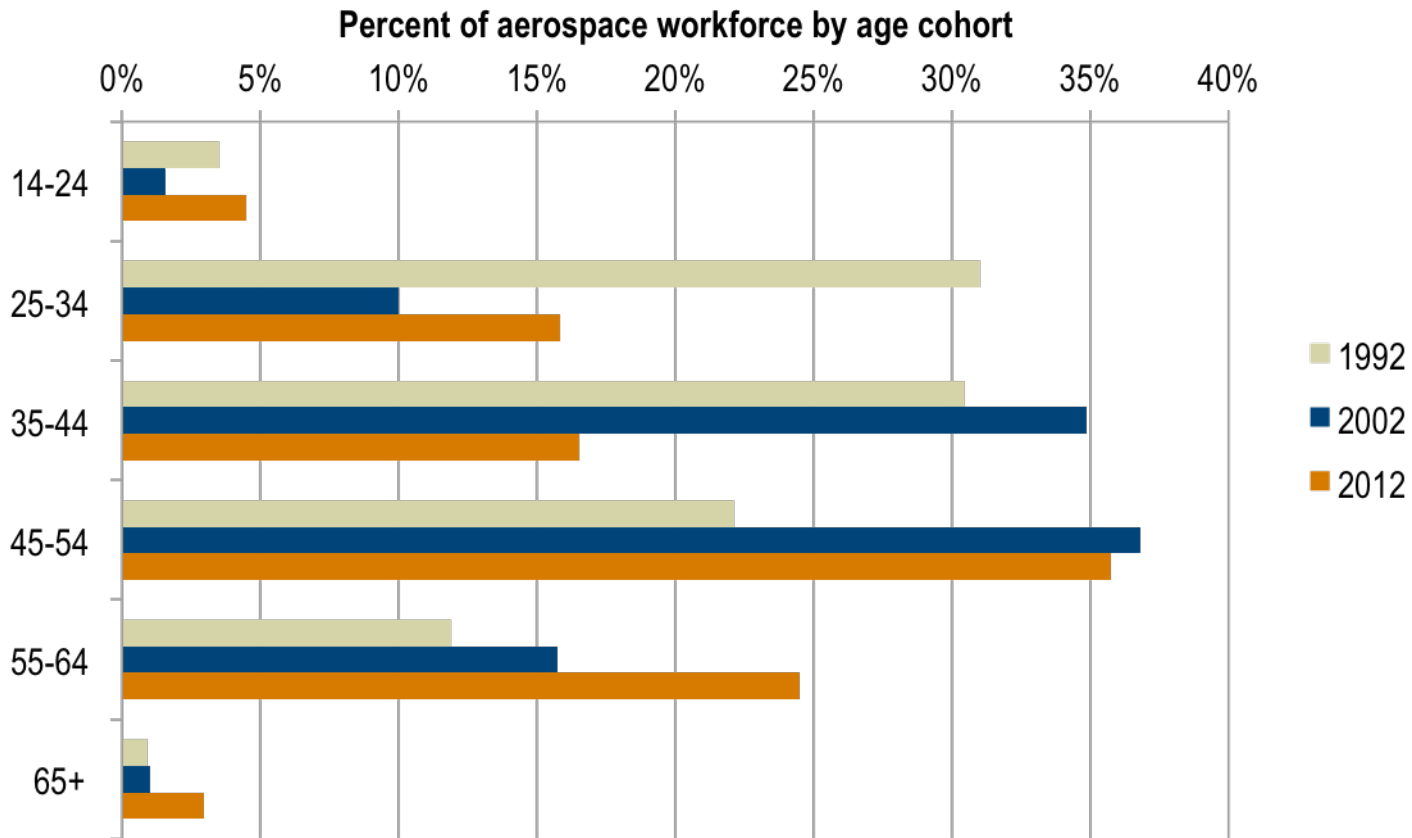
Source: U.S. Census Bureau, LEHD  
Anneliese Vance-Sherman, Ph.D.

# Aerospace Workforce is More Mature



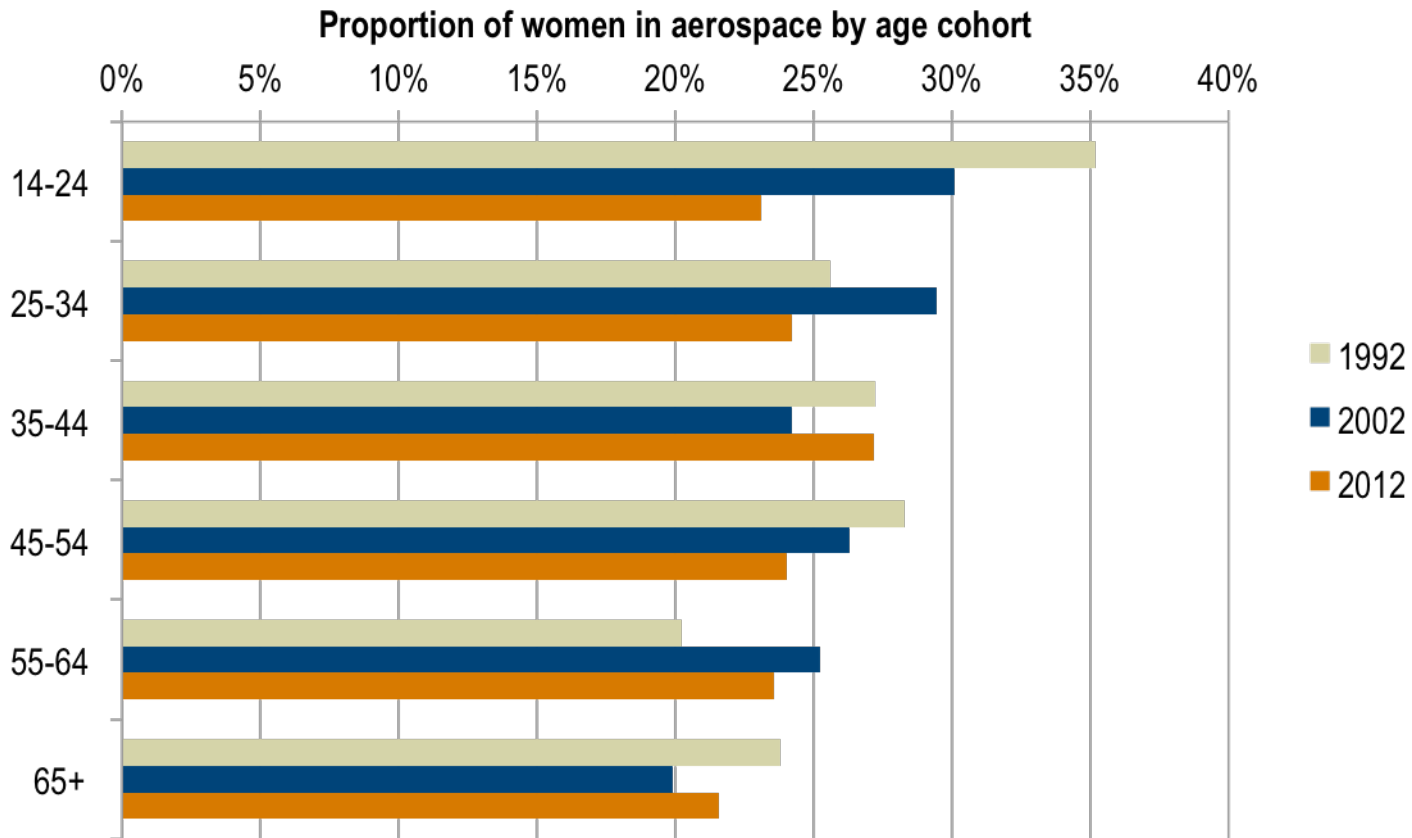
Source: U.S. Census Bureau, LEHD  
Anneliese Vance-Sherman, Ph.D.

# ... And Aging



Source: U.S. Census Bureau, LEHD  
Anneliese Vance-Sherman, Ph.D.

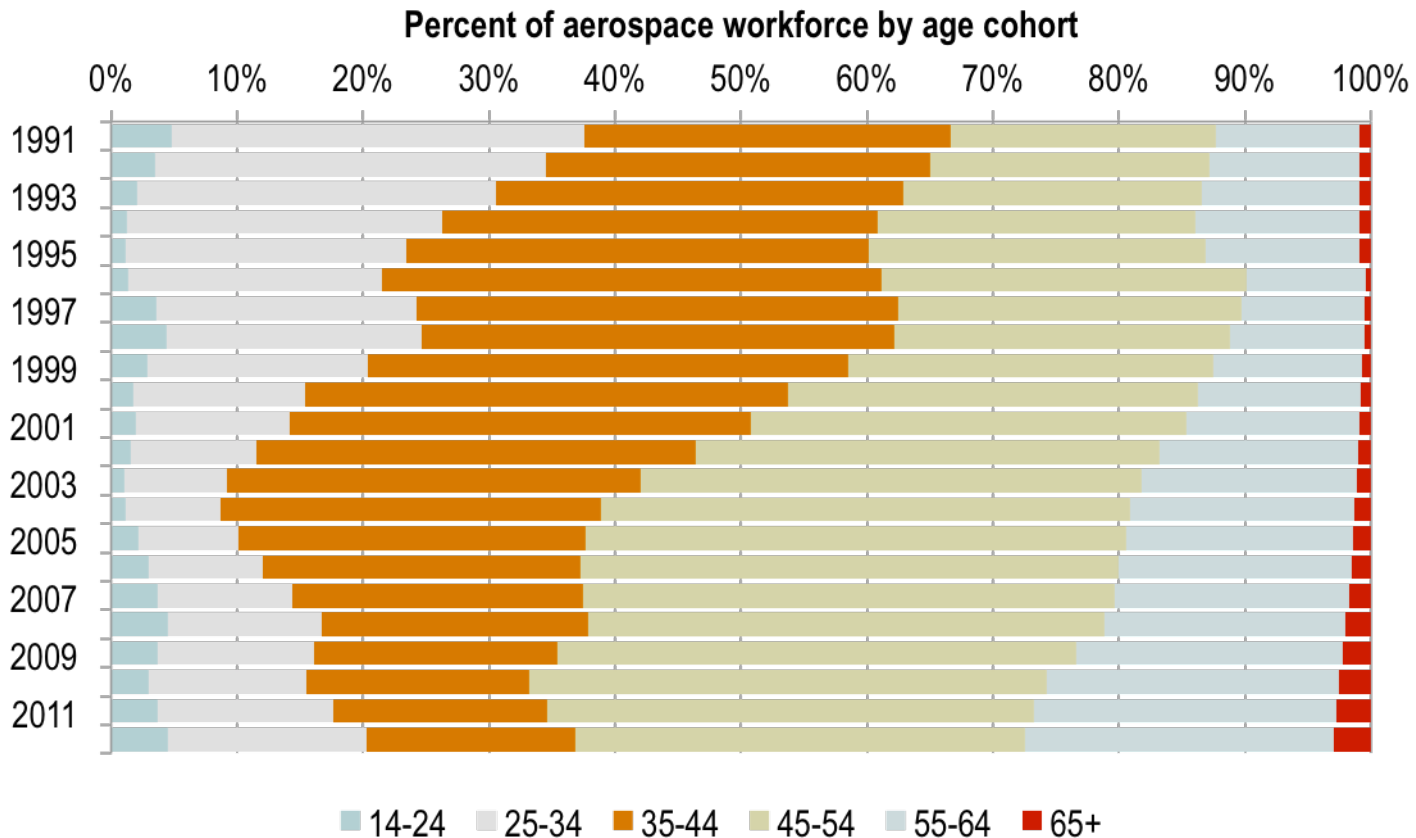
# Largest % of Women by Age Cohort is 35-44 Year Olds



Source: U.S. Census Bureau, LEHD  
Anneliese Vance-Sherman, Ph.D.



# Nearly 30% of Aerospace Workforce is Age 55+



Source: U.S. Census Bureau, LEHD  
Anneliese Vance-Sherman, Ph.D.

# What's Going On?

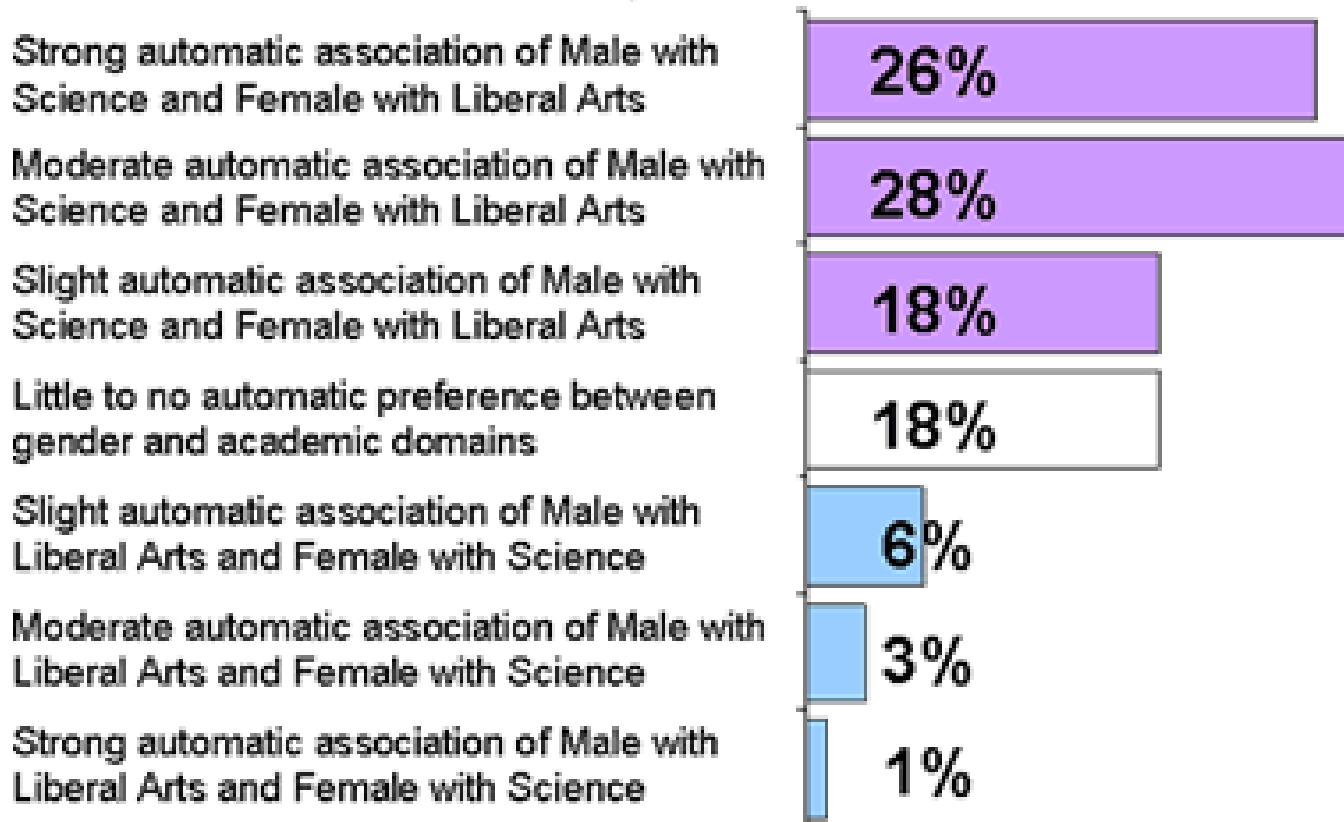
## Let's Cut to the Chase

- Women aren't broken.
- Men aren't the enemy.
- The culprit is societal bias (shared by both women and men) that manifests itself in technical cultures.
- We know what to do and should do it.



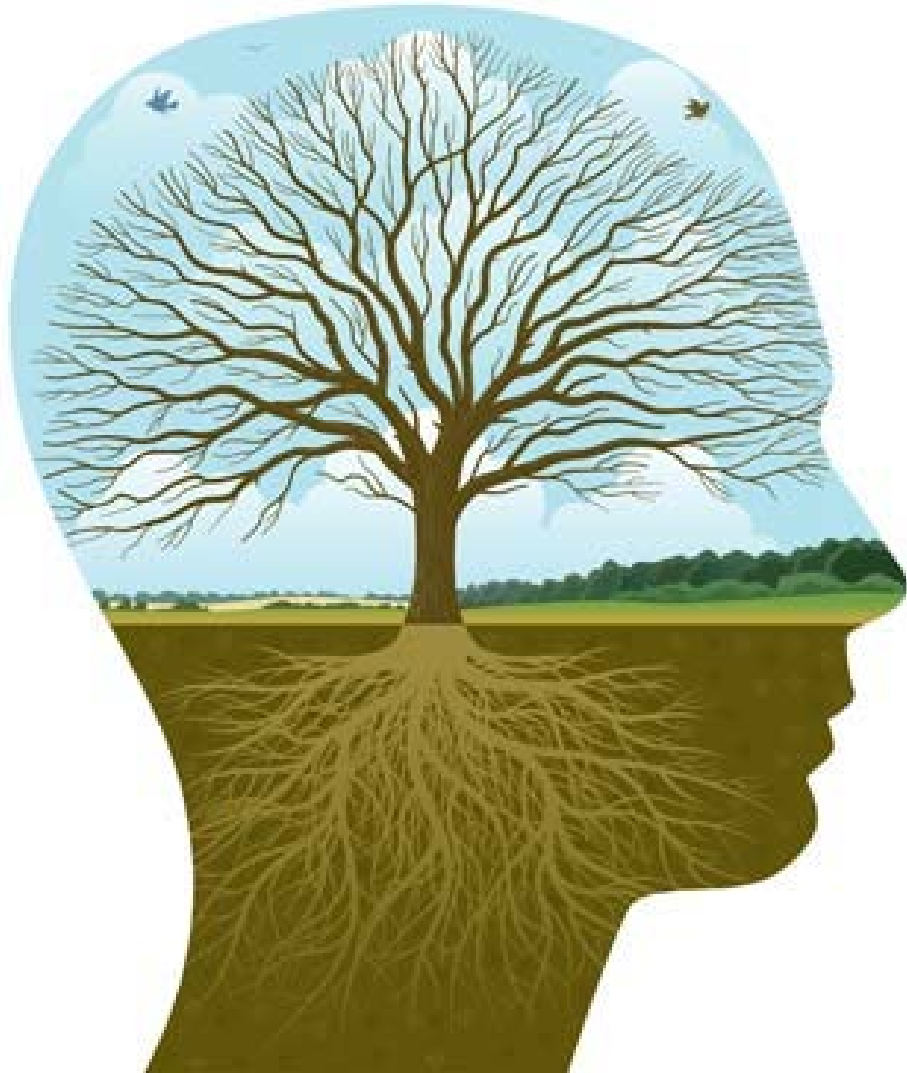
# I Am Biased and Most Likely, You Are Too

Percent of web respondents with each score



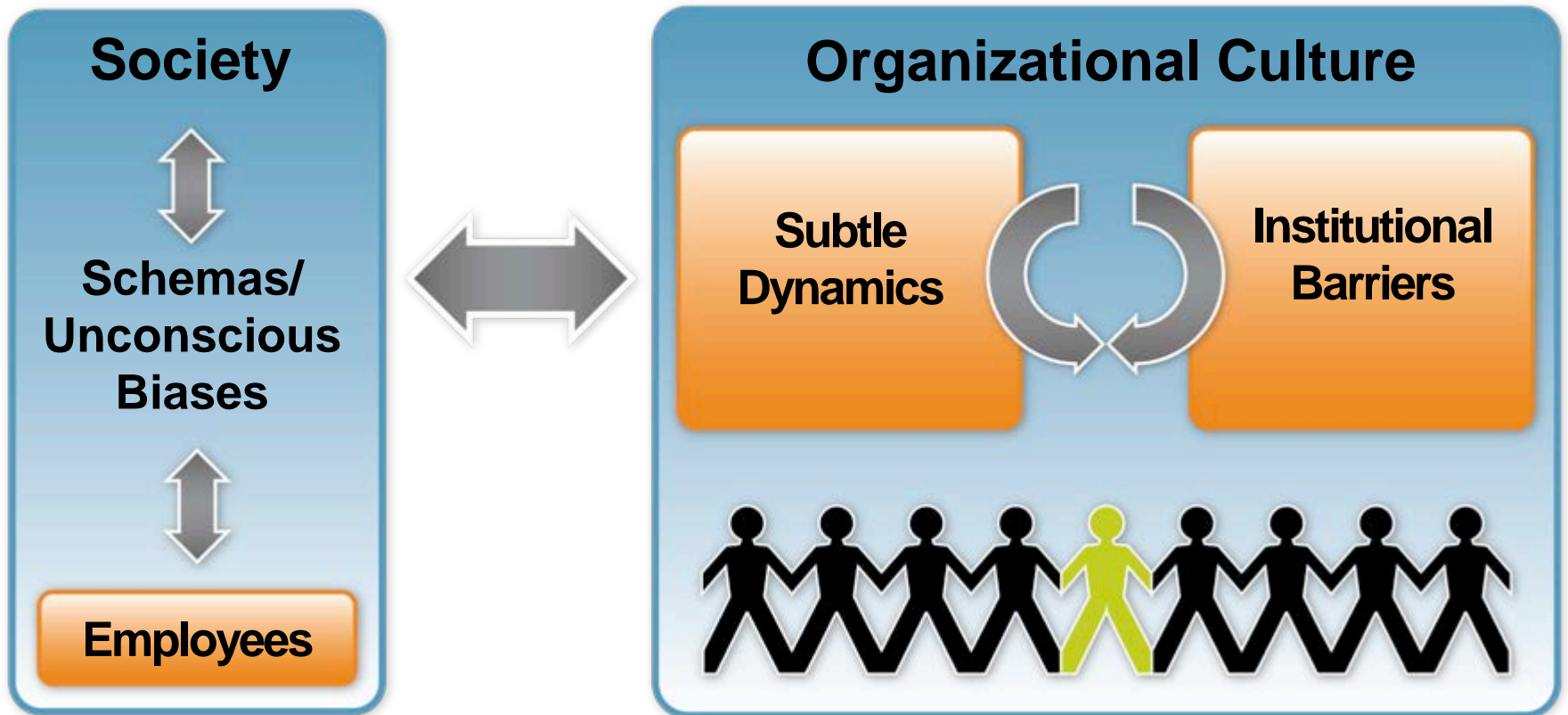
[Click for detailed summary](#)

# What Causes Societal Bias?



We all have shortcuts, “schemas” that help us make sense of the world. But our shortcuts sometimes make us misinterpret or miss things. That’s **unconscious bias.**

# We All Bring Unconscious Bias to Work



# Unconscious Bias Permeates: Recruiting – Retaining -- Advancing

## Hiring

Selecting people “like me”

## Interpersonal Effects

Microinequities, stereotype threat, tokenism, “blindness”

## Task Assignment

Women find themselves in “low status” jobs

## Performance Appraisal

Men appraised for effort, skill; women for collaboration, luck

## Promotion

Criteria modeled implicitly on existing senior male leaders



# What Am I Supposed To Do?

