

The background of the slide is a light gray technical drawing or patent illustration. It features various mechanical components, lines, and hatching, with several numerical callouts such as 80, 26, 68, 30, 86, 34, 32, 52, 50, 84, 82, and 86. The drawing is oriented horizontally and spans the width of the slide.

IPO Webinar:

Gender diversity in innovation

Andrew A. Toole, PhD

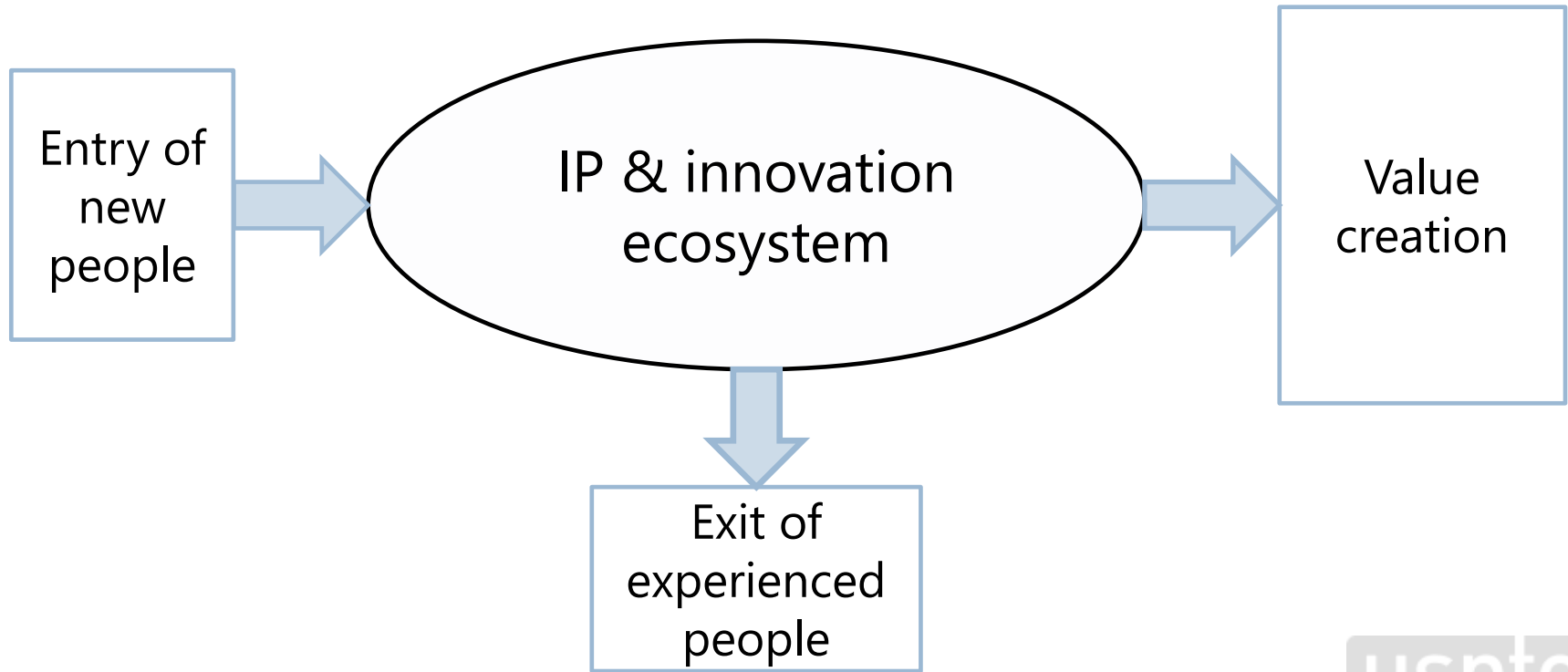
Chief Economist

United States Patent and Trademark Office

UNITED STATES
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Value-creation through innovation



OFFICE OF THE CHIEF ECONOMIST
IP DATA HIGHLIGHTS

Number 2, February 2019

Progress and Potential

A profile of women inventors
on U.S. patents

Available at:

<https://www.uspto.gov/ip-policy/economic-research/publications/reports>

What did we do in the P&P report?

- USPTO collects certain limited information on patent inventors.
- To study women's participation in patenting, it is necessary to classify inventors as men or women based on their names.
- Our report models similar prior studies, but offers two novel contributions:
 - Leverage the origin of an inventor's last name to classify the inventor's gender using his/her first name
 - Focus on the percentage of inventors that are women ("women inventor rate") rather than the share of patents with a female inventor

Two metrics: patents vs. inventors

- Share of patents with a female inventor: The percentage of patents granted in a given year with at least one female on the inventor team.
- Women inventor rate: The percentage of all unique inventors granted a patent in a given year that are women.



50% of patents
with at least one
female inventor



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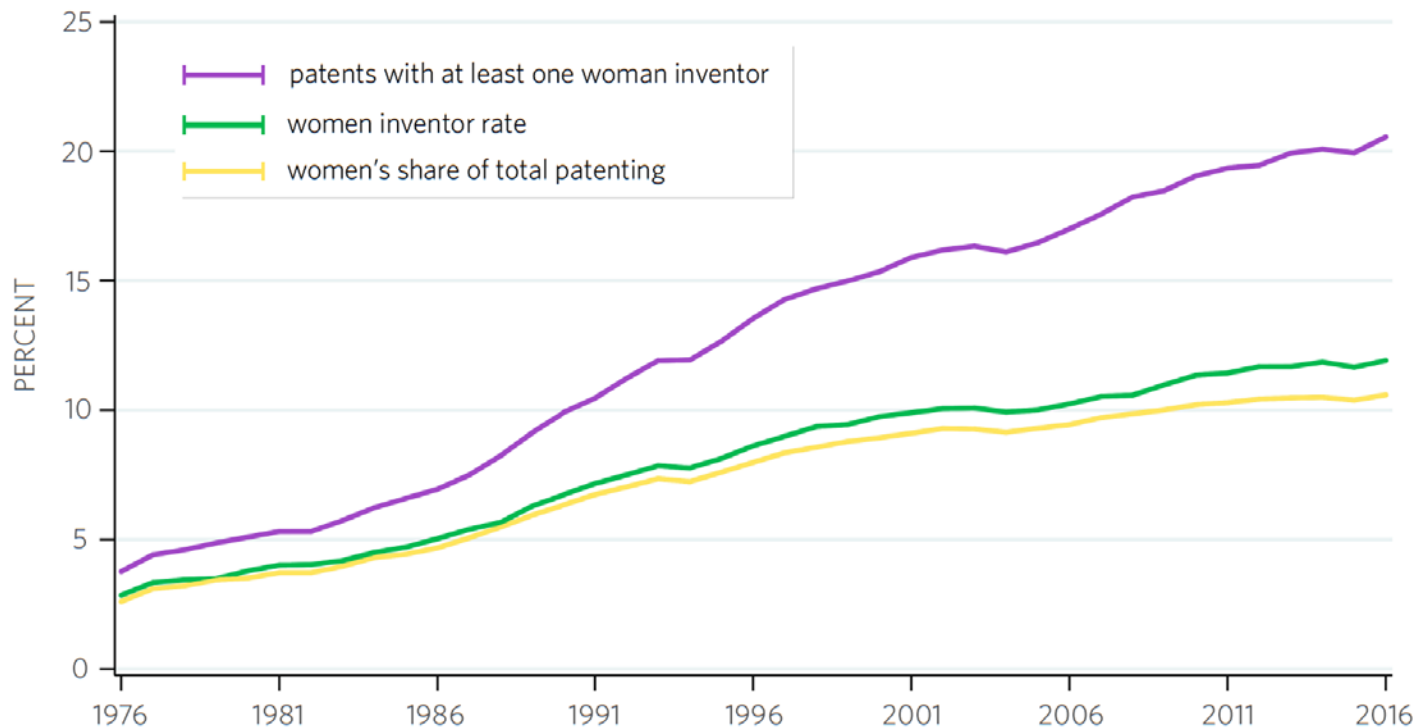


50% women
inventor rate

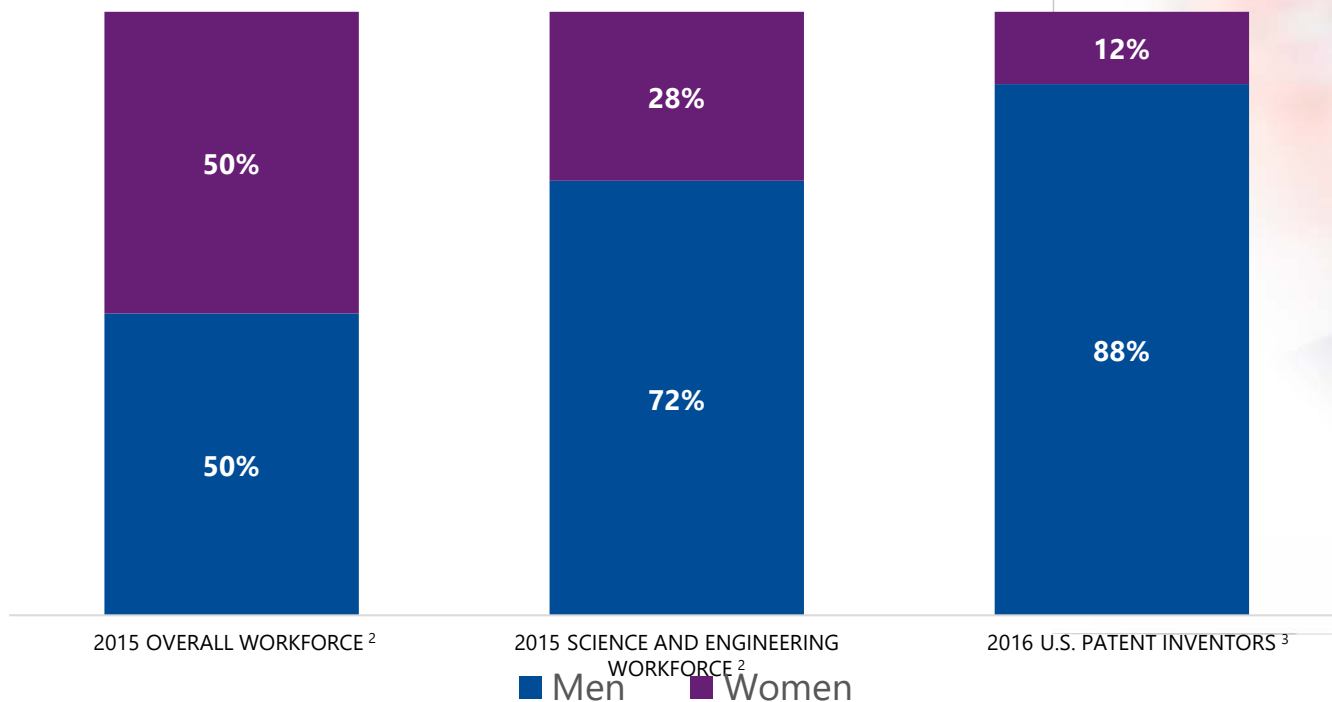


10% women
inventor rate

Women patent and invent more over time

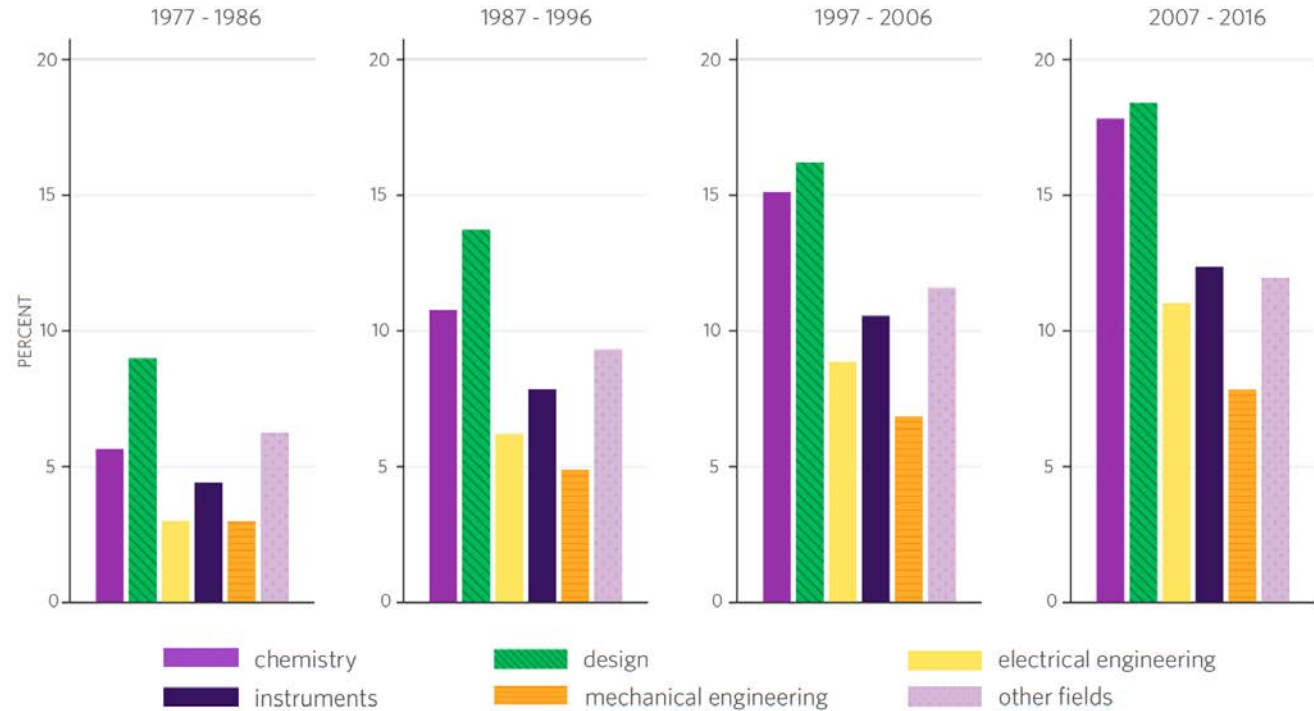


Leaky pipeline increases inventor gender gap

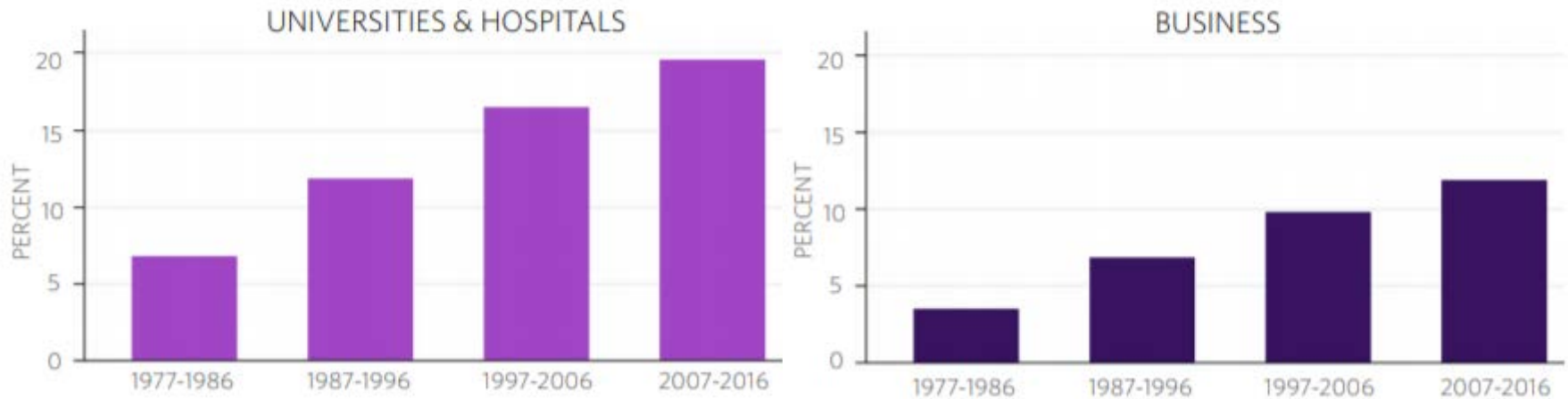


Gender disparities across technologies

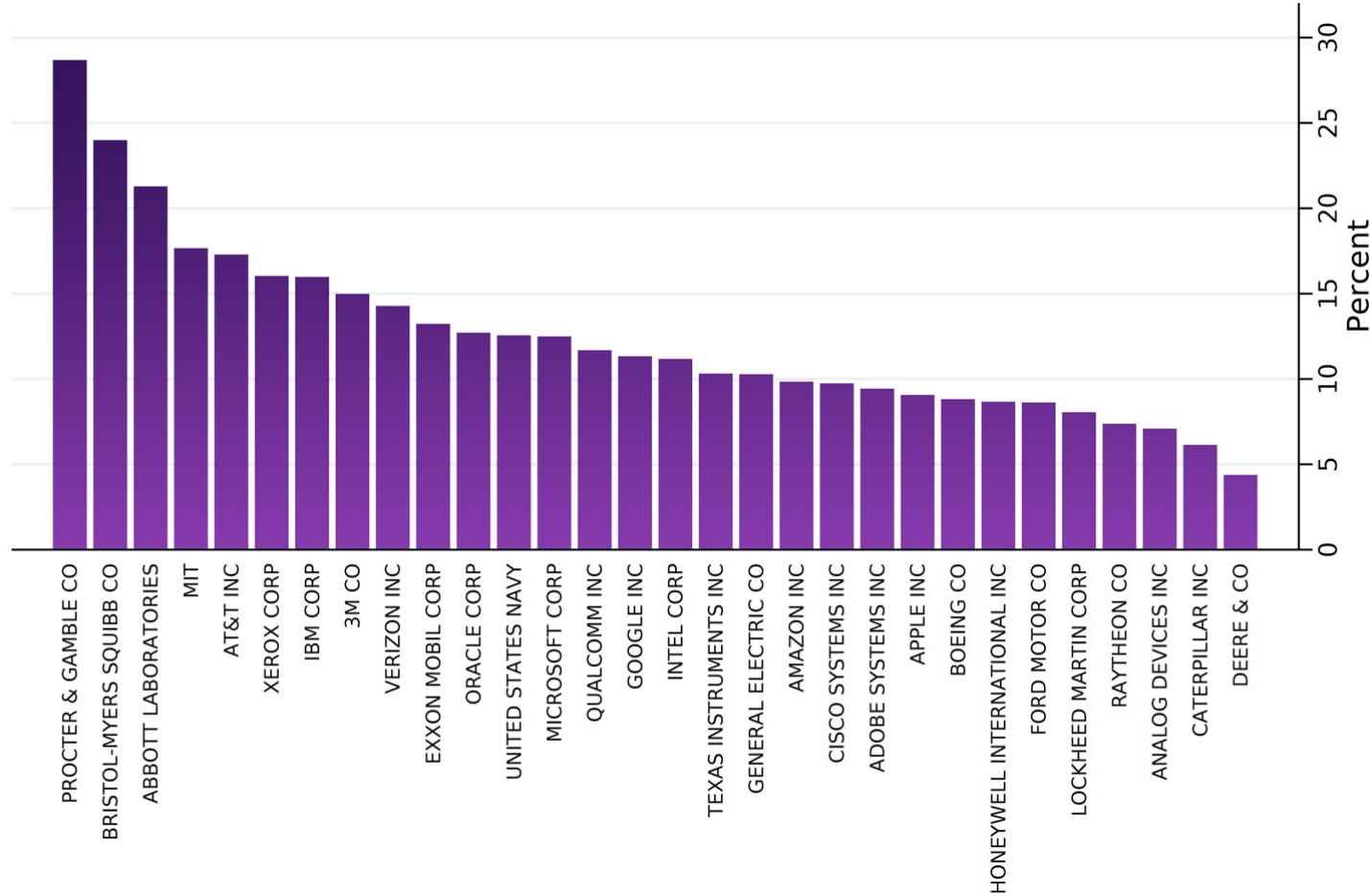
Women are specializing in technology fields and sectors where female predecessors have patented rather than entering male-dominated fields or firms.



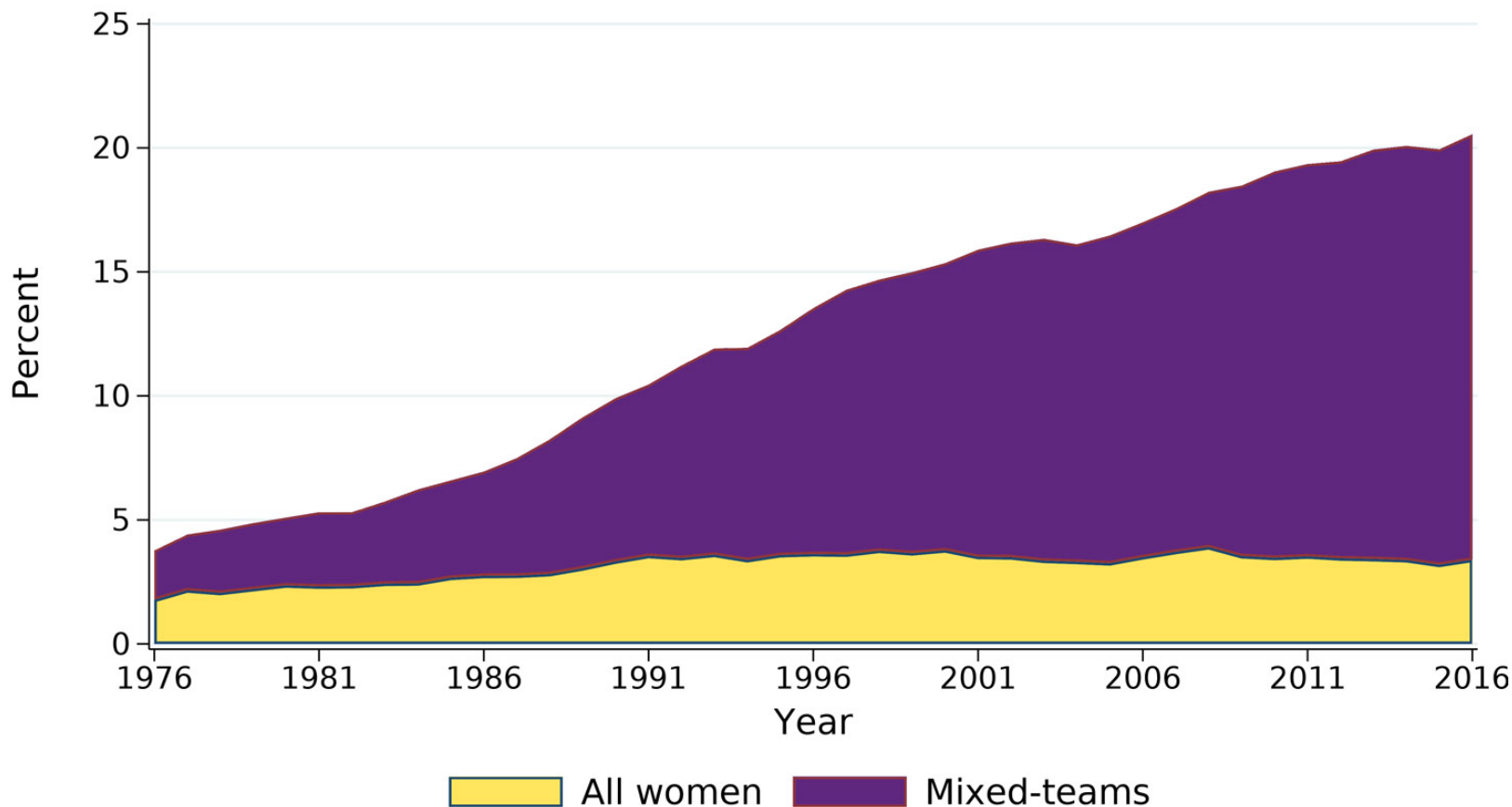
More women inventor-patentees in universities & hospitals



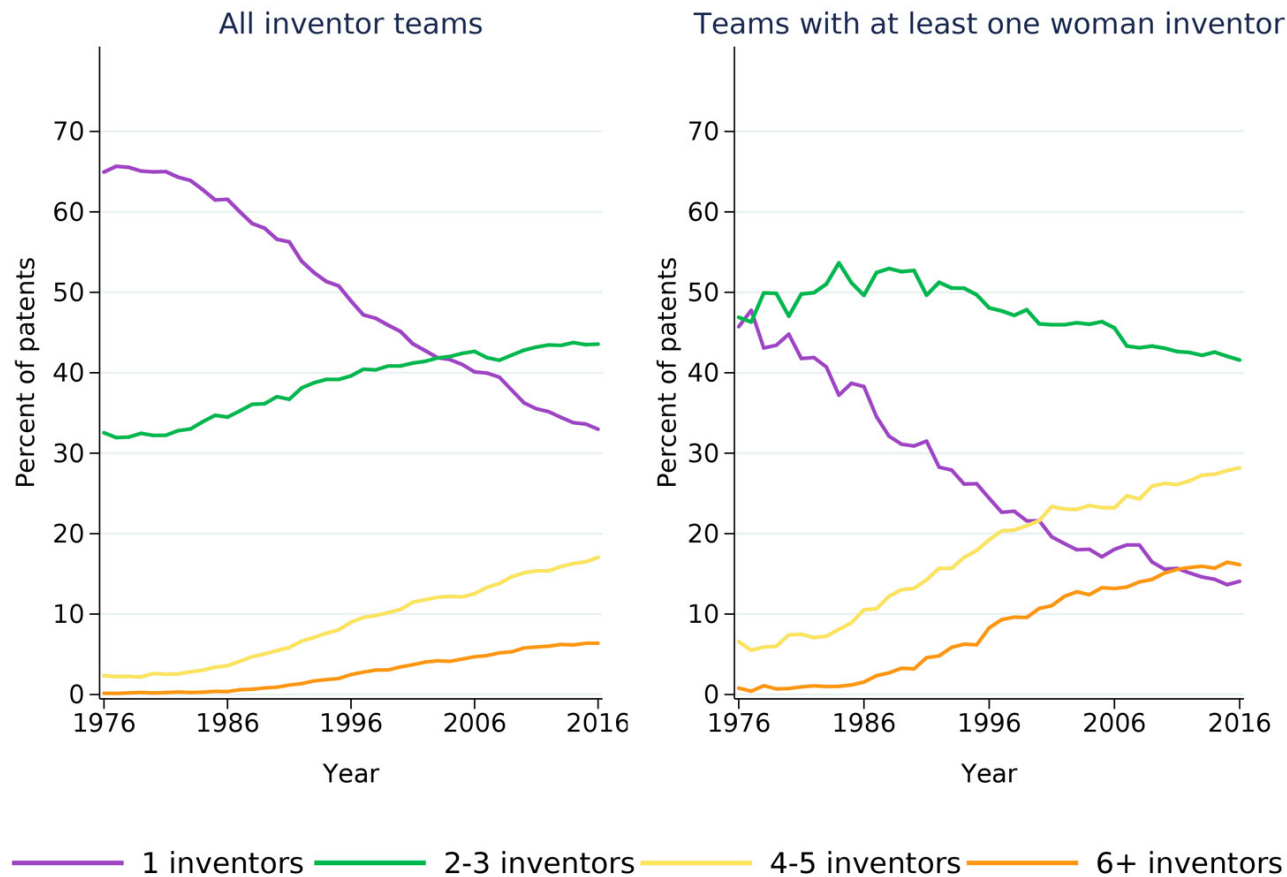
Women are better represented in biopharma

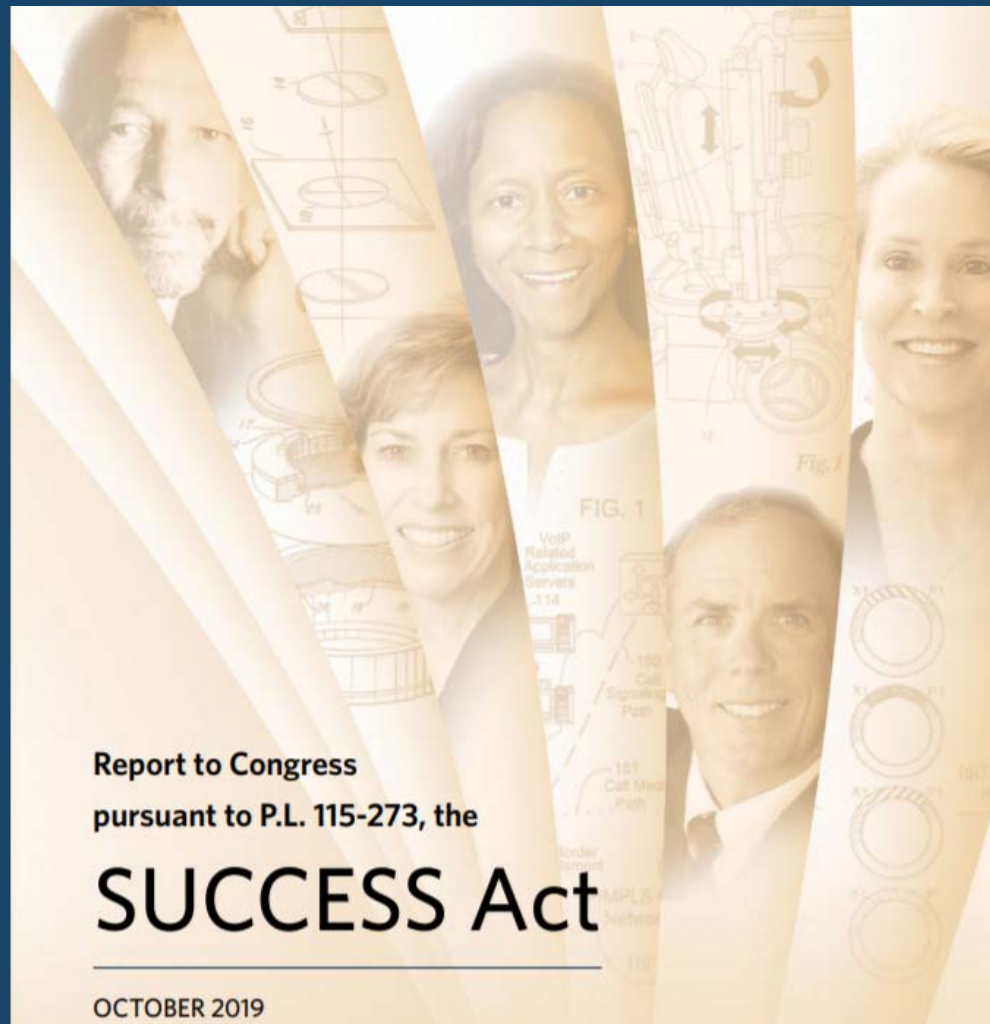


Women patent in mixed-gender teams



Women patent in larger teams





Available at:

<https://www.uspto.gov/sites/default/files/documents/USPTOSuccessAct.pdf>

What is the **SUCCESS** Act of 2018?

- **SUCCESS**: Study of Underrepresented Classes Chasing Engineering and Science Success
- Focused on patenting and entrepreneurship by women, minorities, and veterans
- Required the USPTO (with SBA collaboration) to prepare a report to Congress

SUCCESS Act report requirements

1. For women, minorities, and veterans:
 - Identify publicly available data on the number of patents applied for and obtained
 - Identify the individual and small business benefits of increasing the number of patents applied for and obtained
2. Provide legislative recommendations to:
 - Promote the participation of women, minorities, and veterans in entrepreneurship activities and
 - Increase the number of women, minorities, and veterans who apply for and obtain patents



USPTO study process

- Federal Register Notice (April 2019)
- 3 public hearings (Alexandria, San Jose, Detroit)
 - 34 oral comments and 69 Written comments
- Direct communications (e.g. Patent Alert)
- Engagement with other federal agencies
 - SBA, Treasury, Army
- Reviewed 200 studies and cited about 50 in report
 - Academic, government reports, think tanks, etc.



Key sections of the study

1. Diversity among U.S. inventor-patentees
2. Benefits from patenting
3. External factors
4. USPTO and SBA programs
5. Legislative recommendations

External factors are important

1. Social norms and education
 - Social, cultural, and educational
2. Institutional norms and practices
 - Organizational and legal
3. Resource availability and access
 - Personnel, financial, and physical capital



Major follow-on initiative

1. National Council for Expanding American Innovation
 - A 25 member group composed of CEOs and other organizational leaders.
 - Purpose: To help formulate a national strategy to maintain U.S. global leadership in innovation.



Thank you!

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