

# Closing the Gender Gap in Innovation: The Biopharmaceutical Industry Leads the Way

Leaders across the innovative biopharmaceutical industry recognize that the research and development (R&D) enterprise is most productive when a diverse range of perspectives is considered. Research shows that gender diversity fuels innovation and more robust decision-making. With a more diverse innovation workforce, we are also seeing increases in the number of patents with women listed as inventors, particularly for the biopharmaceutical industry compared to other industries.<sup>1</sup>

Percentage of Women in the Overall Workforce and STEM Workforce over 50 Years

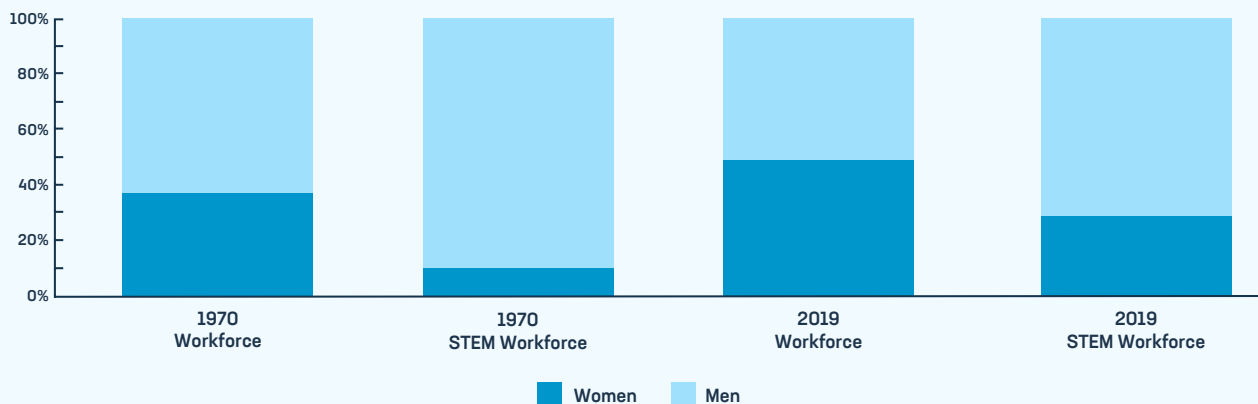


Figure 1: “Women Making Gains in STEM Occupations but Still Underrepresented.” Census Report Jan 26, 2021. <https://www.census.gov/library/stories/2021/01/women-making-gains-in-stem-occupations-but-still-underrepresented.html>

## CONTINUED RISE OF WOMEN IN STEM IN THE U.S.

In 1970, women made up 38% of all U.S. workers and only 8% of STEM workers. By 2019, the **proportion of STEM workers who were women had increased to 27%, and women comprised 48% of all U.S. workers.**<sup>2</sup>

Not only have we seen progress in the proportion of women in STEM occupations, but also we’ve seen growth in the types of STEM jobs women are pursuing. The representation of women increased **from 19% of STEM occupations in 1970 to 64% in 2019.**<sup>3</sup>

According to the Diversity 100, a listing compiled for IAM of the entities with the greatest proportion of female inventors named on U.S. patent grants maintained between January 2010 and January 2022, pharmaceutical companies led the way in attracting more women inventors.<sup>4</sup>

Increase in the Percentage of Life Sciences Patents held by Women in the Last Three Decades

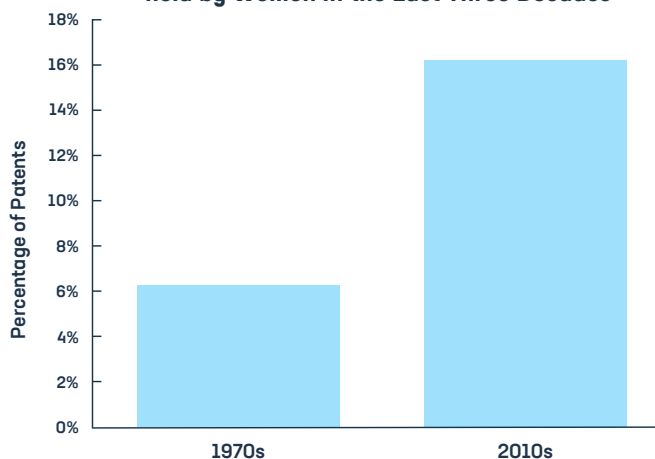


Figure 2: “Women Making Gains in STEM Occupations but Still Underrepresented.” Census Report Jan 26, 2021. <https://www.census.gov/library/stories/2021/01/women-making-gains-in-stem-occupations-but-still-underrepresented.html>

## GROWING WOMEN INVENTORS IN STEM

- A new United States Patent and Trademark Office (USPTO) report shows that as the number of women in the STEM workforce grows, so does the number of women with patents. More women are entering and staying active in the U.S. patent system than ever before.<sup>5</sup>
- The “Women Inventor Rate”—the share of U.S. inventors listed on patents across sectors who are women—**increased from 12.1% in 2016 to 12.8% in 2019.**<sup>6</sup>
- Specifically, biopharmaceutical companies are “dominating the race to attract more women inventors.”<sup>7</sup> The number of life sciences patents held by women **has risen by nearly 10 percentage points, from 6.3% to 16.2%, in the last three decades.**<sup>8</sup>
- The growth in women patentees in the life sciences is outpacing other industries, such as electrical and mechanical engineering, where patents held by women only increased from 3% to 7% over the past decade.<sup>9</sup> This may be due to lingering gender gaps in those fields of education and high attrition rates in these workforces.
- Growth in women in STEM and women life science inventors may be a testament to the worthwhile efforts of the biopharmaceutical ecosystem to build a diverse workforce and create opportunities for women to thrive in their STEM jobs. **There is reason to suggest that these efforts positively impact women’s ability to participate in life sciences patenting.**<sup>10,11</sup>

## ATTRACTING GIRLS AND WOMEN TO STEM FIELDS AND DEVELOPING LEADERS

While progress has been made, **women in life sciences patent at about 40% the rate of men.**<sup>12</sup> The leaders of America’s biopharmaceutical companies embrace their responsibility to help improve gender parity in innovation by addressing the upstream effects, such as gender gaps in education and leadership positions.

### BOLSTERING THE STEM PIPELINE

From a 2020 survey of the biopharmaceutical industry, PhRMA members supported over 70 specific STEM-related programs or activities across the nation. Just over half of the programs were intentionally designed to engage population groups that continue to be underrepresented in STEM fields, **including nearly 15 programs specifically for women or girls.**<sup>13</sup> Collectively, these programs reached 7.4 million students and 25,000 teachers.

### ILLUSTRATIVE EXAMPLES OF INDUSTRY’S STEM EDUCATION PROGRAMS TARGETED TOWARD WOMEN AND GIRLS<sup>14</sup>

One company supports an all-girl after-school science program that reaches more than 500 girls in grades 3-8 in the Chicago region.

One company engages with STEM teachers to offer support for STEM education for girls.

One company provides support for girls and women of all ages to pursue STEM studies and careers no matter where they are located, working with organizations like the Girl Scouts and others to reach over 6 million girls since its inception.

## DEVELOPING LEADERS

From a 2020 survey of the biopharmaceutical industry, nearly all of PhRMA's member companies offer **professional development and networking opportunities**, and 78% have in place a cross-functional **diversity council or leadership team** to support and grow more inclusive workplaces.<sup>15</sup>

### ILLUSTRATIVE EXAMPLES OF INDUSTRY'S SUPPORT FOR WOMEN IN STEM<sup>16</sup>

Companies offer employee resource groups (ERGs) specifically to support women's career development and provide mentorship.

Companies provide leadership training and professional development programs to women.

**To make the necessary gains in gender parity that the future of innovation relies on, the biopharmaceutical industry recognizes the need for continued commitment to build and maintain a diverse, equitable and inclusive culture.**

**"We need to expand innovation inclusively, reaching people where they are with the resources to participate in our innovation ecosystem. It is the key to unleashing the potential of every American, to creating jobs, and to economic prosperity."**

**Kathi Vidal**, Under Secretary of Commerce for Intellectual Property and Director of USPTO

## SOURCES

- <sup>1</sup> "Gender Differences in Patenting in the Academic Life Sciences. Science. Aug 4, 2006. <https://www.science.org/doi/full/10.1126/science.1124832>
- <sup>2</sup> "Women Making Gains in STEM Occupations but Still Underrepresented." Census Report. Jan 26, 2021. <https://www.census.gov/library/stories/2021/01/women-making-gains-in-stem-occupations-but-still-underrepresented.html>
- <sup>3</sup> "Women Making Gains in STEM Occupations but Still Underrepresented." Census Report. Jan 26, 2021. <https://www.census.gov/library/stories/2021/01/women-making-gains-in-stem-occupations-but-still-underrepresented.html>
- <sup>4</sup> <https://www.iam-media.com/article/the-lessons-big-tech-can-learn-pharma-inventor-diversity>
- <sup>5</sup> "Progress and Potential: 2020 update on U.S. women inventor-patentees." USPTO. July 2020. <https://www.uspto.gov/about-us/news-updates/uspto-releases-updated-study-participation-women-us-innovation-economy-0#:~:text=The%20E2%80%9CWomen%20Inventor%20Rate%20%9D%20%93,2016%20to%2017.3%25%20by%202019>
- <sup>6</sup> "Progress and Potential: 2020 update on U.S. women inventor-patentees." USPTO. July 2020. <https://www.uspto.gov/about-us/news-updates/uspto-releases-updated-study-participation-women-us-innovation-economy-0#:~:text=The%20E2%80%9CWomen%20Inventor%20Rate%20%9D%20%93,2016%20to%2017.3%25%20by%202019>
- <sup>7</sup> "The Lessons Big Tech can learn from pharma on inventor diversity." IAM. April 6, 2022. <https://www.iam-media.com/diversity-and-inclusion/the-lessons-big-tech-can-learn-pharma-inventor-diversity>
- <sup>8</sup> "Gender Differences in Patenting in the Academic Life Sciences. Science. Aug 4, 2006. <https://www.science.org/doi/full/10.1126/science.1124832>
- <sup>9</sup> "Gender Differences in Patenting in the Academic Life Sciences. Science. Aug 4, 2006. <https://www.science.org/doi/full/10.1126/science.1124832>
- <sup>10</sup> [PhRMA STEM report](#)
- <sup>11</sup> "Gender Differences in Patenting in the Academic Life Sciences. Science. Aug 4, 2006. <https://www.science.org/doi/full/10.1126/science.1124832>
- <sup>12</sup> "Gender Differences in Patenting in the Academic Life Sciences. Science. Aug 4, 2006. <https://www.science.org/doi/full/10.1126/science.1124832>
- <sup>13</sup> "The Biopharmaceutical Industry's Sustained Commitment to Inspiring and Advancing Tomorrow's STEM Workforce." PhRMA. October 2020. <https://phrma.org/-/media/Project/PhRMA/PhRMA-ReportFinal.pdf>
- <sup>14</sup> "The Biopharmaceutical Industry's Sustained Commitment to Inspiring and Advancing Tomorrow's STEM Workforce." PhRMA. October 2020. <https://phrma.org/-/media/Project/PhRMA/PhRMA-ReportFinal.pdf>
- <sup>15</sup> "The Biopharmaceutical Industry: Improving D&I in the Workforce." PhRMA. December 2020. <https://www.phrma.org/-/media/Project/PhRMA/PhRMA-ReportFinal.pdf>
- <sup>16</sup> "The Biopharmaceutical Industry: Improving D&I in the Workforce." PhRMA. December 2020. <https://www.phrma.org/-/media/Project/PhRMA/PhRMA-ReportFinal.pdf>