

Student Group Tasks for Women in Physics

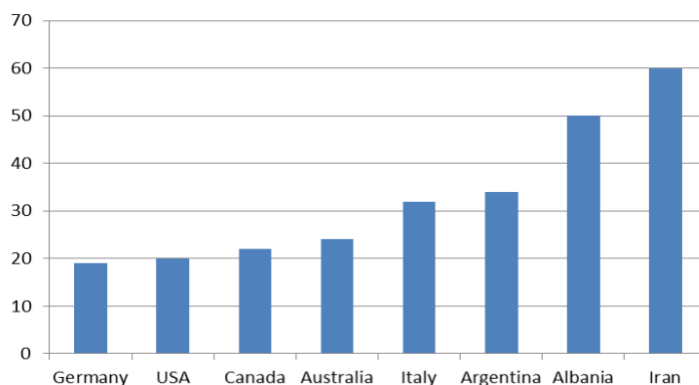
Choose one of these six options and see below for further details:

1. [Data on international women in physics](#)
2. [Gendered Professions](#)
3. [Data on undergraduate women in STEM fields in the U.S.](#)
4. [Examples of gender inequalities \(Academic Achievement\)](#)
5. [Defining Unconscious Bias](#)
6. [Intersection of Race/ethnicity with Gender](#)

1. DATA ON INTERNATIONAL WOMEN IN PHYSICS

Read [Appendix 4 – Background Info on Women in Physics Internationally](#). Examine this chart:

Percentage of Undergraduate Degrees in Physics Earned by Women, by Country



Answer these prompts:

- a. Based on this reading, explain why Italy and Albania have a higher percentage of undergraduate degrees for women compared to Germany and the United States.
- b. What does the information about women in physics internationally suggest about the causes of women's underrepresentation in physics in the United States?

2. GENDERED PROFESSIONS

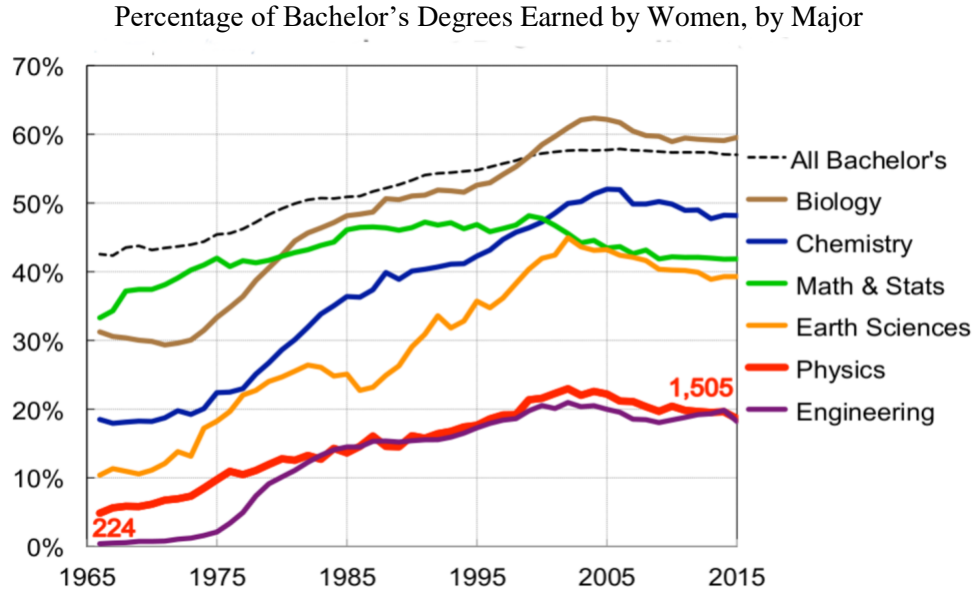
Reflect on the pre-assignment you did (Google Search and reading on Famous Female Physicists).

Answer these prompts:

- a. What gender are your doctors and nurses?
- b. What about people you know in other technical professions (e.g., engineering)?
- c. What gender are your teachers in various subjects?
- d. What patterns have you noticed in who pursues different careers?
- e. Why do you think these differences arise?
- f. Why do you think women appear in particular science fields more than others?

3. DATA ON UNDERGRADUATE WOMEN IN STEM FIELDS IN THE U.S.

Examine this chart:



Answer these prompts:

- Are you surprised by these data?
- What major are you considering?
- What are your reasons for choosing this major?
- How do you explain these results?

4. EXAMPLES OF GENDER INEQUALITIES (ACADEMIC ACHIEVEMENT)

Read the following abstracts (divide up the reading in your group):

- Gender Differences in the High School and Affective Experiences of Introductory College Physics Students, <https://aapt.scitation.org/doi/abs/10.1119/1.2981292>
- Gender differences in introductory university physics performance: The influence of high school physics preparation and affective factors <https://onlinelibrary.wiley.com/doi/abs/10.1002/sce.20223>
- Physics Grading Biased Against Women <https://www.aps.org/publications/apsnews/201604/grading.cfm>
- Gender stereotypes about intellectual ability emerge early and influence children's interests, <https://science.sciencemag.org/content/355/6323/389>
- Males Under-Estimate Academic Performance of Their Female Peers in Undergraduate Biology Classrooms <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0148405>

Answer these prompts:

- Do you think there are gender differences in physics in high school or college? If so, what are the cause of these differences?
- Defend your claims citing evidence from the articles your classmates shared.

5. DEFINING UNCONSCIOUS BIAS

Read these sources (divide up the reading in your group):

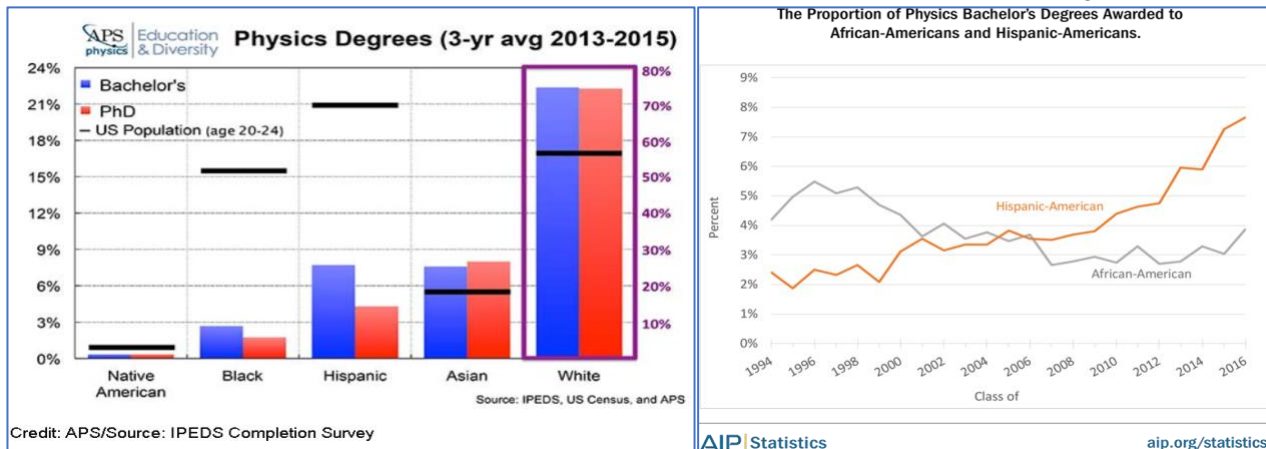
- Definition of Unconscious Bias, <https://diversity.ucsf.edu/resources/unconscious-bias>
- Expectations of Brilliance Underlie Gender Distribution Across Academic Disciplines https://www.researchgate.net/publication/270962854_Expectations_of_Brilliance_Underlie_Gender_Distributions_Across_Academic_Disciplines
- Student evaluations of teaching (mostly) do not measure teaching effectiveness <https://www.math.upenn.edu/~pemantle/active-papers/Evals/stark2016.pdf>
- Quantitative Evaluations of Gender Bias in Astronomical Publications from Citation Counts, <https://arxiv.org/abs/1610.08984>

Answer these prompts:

- Do you think natural talent or intellectual ability are the most important reasons to choose a career path?
- Are student evaluations a valid way of determining the effectiveness of a teacher?
- Do you think that the small number of female first authors is a result of conscious bias or unconscious? Support your claim with evidence and reasoning.
- Is sexism a form of unconscious bias?

6. INTERSECTION OF RACE/ETHNICITY AND GENDER (OPTIONAL)

Examine these 2 charts. (For Chart 1, note the different vertical axis scales on the left and right).



Answer these prompts:

Chart 1 (left):

- What do the black lines represent?
- For some groups, the percentage of degrees granted exceeds the percent of that group in the general population. For other groups, the percentage of degrees granted is less than the percentage of that group in the general population. Identify the groups that exceed and the groups that do not exceed the percentage of that group in the general population.
- How do you explain this disparity?

Chart 2 (right):

- What are the variables represented in this graph?
- What trends do you notice during the decade 2006–2016?
- What factors might explain these trends?