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Is the "Glass Ceiling" a Real Problem for Women Physicists in Argentina?

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Abstract. We evaluate the distribution of female physicists in the Argentinean workforce, analyzing the distribution of women at different levels of education and research using several indicators. Although important imbalances still occur, our findings are encouraging and the distribution of female physicists seems to be changing for the better.

In previous IUPAP conferences, we analyzed whether the women in physics minority in Argentine was an issue that began in elementary school. We also wondered whether physics was not a popular choice among young women. Since we did not find a conclusive answer [1], we now pose the question: What if the cause of the women in physics minority is in their future (issues of reaching a top position in their career) rather than in their past (issues of choosing to be a physicist)?

To explore the existence and magnitude of the invisible barrier—the so-called glass ceiling—that seems to block women from getting to top positions in our field, we have looked for vertical segregation. We analyzed women's mobility to top positions in the scientific hierarchical pyramid. This kind of segregation would show strong evidence of a lack of equality between genders. One consequence would be a relative lack of recognition of women scientists.

From our previous work, we know that women have not traditionally chosen physics as a profession. Nevertheless, the female population in physics in Argentina has grown considerably in recent years. It remains to be seen whether males and females are equally distributed in all levels of physics education and research. As indicators we used the proportion of women as group leaders in research and the proportion of women in different hierarchical levels of CONICET, the principal research council of Argentina.

In the last decade there has been a strong government policy to increase the number of researchers nationwide. Between 2003 and 2013, the number of researchers at CONICET grew by 114%, from 3,694 to 7,902. In the hard sciences (physics, chemistry, mathematics, and earth science), the increase was 72%, from 1,172 to 2,012 researchers. Remarkably, the increase in the number of researchers was also associated with an increase in the proportion of women in the hard sciences. In particular, physics almost doubled its population of researchers at CONICET, from 353 in 2001 to 675 in 2013.

In contrast to what happened in the hard sciences overall, the proportion of women in physics did not significantly increase, but remained around 20% (see Fig. 1). Moreover, the proportion of women is not evenly distributed along the research categories, but decreases as the research category increases. This imbalance is still very strong and the number of women is still very low (the 6% in the top category translates to two women). Although the proportion of women at the highest levels has increased in the last decade, which is very promising, the number of women in these categories is still rather low. Only 1.2% of the physics projects (just seven projects in 2013) funded yearly by CONICET have a woman as group leader.

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When we consider women's participation in decision-making committees across all scientific fields, we see very low numbers. In Fig. 2 we show the proportion of women who take part in each committee at CONICET (considering all areas of research). Even in fields traditionally chosen by women, female representation is still poor.

Where one's research takes place is also important. The more prestigious an institution, the more male competition. And since researchers at prestigious institutions generally receive more attention, male dominance in the academic world is perpetuated.

To be a group leader, a woman first needs a team with similar scientific interests, then a place to do the work, and last but not least, research funding. Only with appropriate financial support can she pursue relevant research, which is the cornerstone to obtaining more financial support—a seemingly vicious cycle. So, how to start a research group from scratch?

In spite of the slight increase of women in physics in Argentina, we still need to work harder to make the glass ceiling disappear. To the extent that we still live in a male culture with strong male networks, we need to be alert — so that a woman reaching a top position is not a token, but the norm.

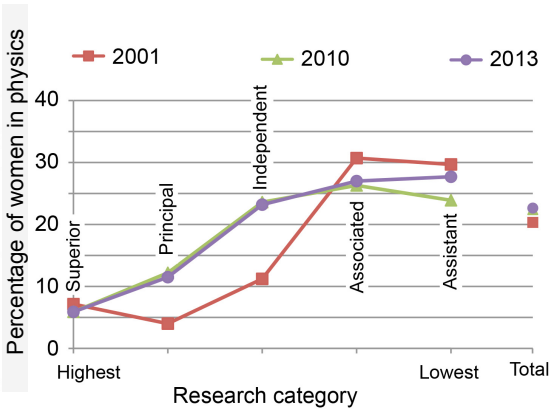

FIGURE 1. The distribution of women is not uniform among the research categories. The proportion of women in the top categories is still low.

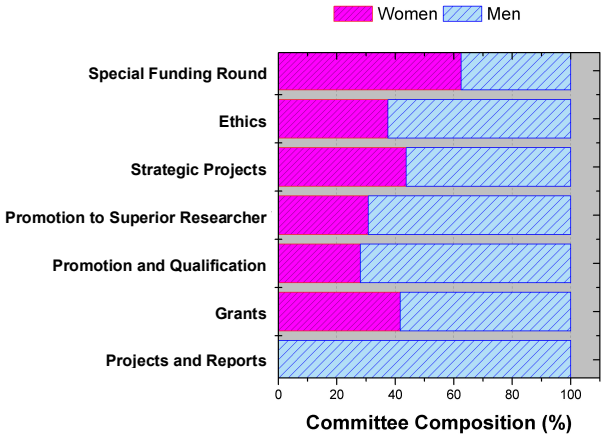

FIGURE 2. Women still need more representation on the decision-making committees of CONICET.

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