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Women’s Achievements and Continued Challenges in Attaining Equality in Academic Ecology

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QUESTIONS

- **Leadership by women**
  - Has the frequency of female leaders changed over time?
  - Are women as qualified as their male counterparts?
  - Has the frequency of female first authored papers increased through time?

- **Participation by women**
  - Has the frequency of female participants changed over time?
  - Have women increased their participation in publishing?

- **Recognition of women’s contributions**
  - Has the recognition of women’s contributions changed through time?
1996: frequency of female PIs was significantly less than the national frequency of female faculty ($\chi^2 = 25.64$, $P<0.001$).

2007: the frequency of female PIs was not different than the national frequency of female faculty ($\chi^2 = 0.0008$, $P>0.05$).

* According to NSF figures for 1997 and 2006
WOMEN’S QUALIFICATIONS TO LEAD

- 1997: Women PIs had ~ half the impact on ecological literature as men.
- 2006: Women PIs had the same impact on ecological literature as men.

Gender: $F_{1,1} = 4.025$, $P = 0.047$
Gender x Time: $F_{1,123} = 4.22$, $P = 0.042$
LEADERSHIP BY WOMEN IN PUBLICATIONS

After accounting for the frequency of female participants and female PIs in a working group, the frequency of female first authored products has declined over time ($\beta = -0.238$, $F=8.132$, $P=0.005$).
PARTICIPATION BY WOMEN

- 1996: frequency of female participants was significantly less than the national frequency of female faculty ($\chi^2=123.48$, $P<0.001$).

- 2007: the frequency of female participants was significantly less than the national frequency of female faculty ($\chi^2=35.02$, $P<0.001$).

* According to NSF figures for 1997 and 2006
WOMEN’S PARTICIPATION IN PUBLISHING

After accounting for the proportion of female participants and female PIs, women’s participation in the production of papers produced by their working group has increased through time ($\beta = 0.188$, $F_{1,123} = 4.848$, $P = 0.029$).
Women are participating less as authors than you would expect given their presence in working groups ($R^2=0.258$, $\beta = 0.79$, $F_{2,152}=26.358$, $P<0.001$).
RECOGNITION OF WOMEN'S CONTRIBUTIONS

Women's authorship ranking is lower than men's but it improves as more women participate as authors ($\beta = 0.791$, $F_{2,152} = 128.53$, $P<0.001$).

Relative ranking of women's authorship is not improving with time ($t = 1.47$, $P=0.142$).
SUMMARY

- Women continue to be under-represented as participants and authors, and their contribution to papers is undervalued relative to their male counterparts.
- However, the frequency of female PIs has reached parity at the same time as these women have become as qualified as male PIs.
- Further, women tend to publish in more prestigious journals, despite their tendency to produce fewer articles.
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