Tough Talk: *Women Giving Colloquia*

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Abstract: Attending and giving talks are essential parts of career development for astronomers. Invitations to speak at conferences and give colloquia are important career milestones. Colloquia in particular continue to be an important means of exposure for early career scientists providing an opportunity to increase the visibility of one's research and to make oneself known to the broader astronomical community.

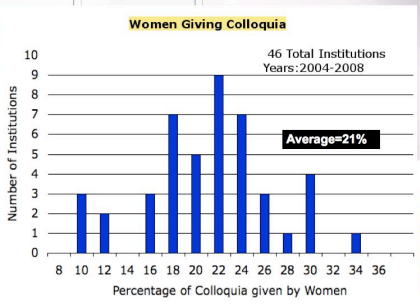


Figure 1: The histogram shows the percentage of colloquia given by women for the 46 institutions surveyed. The percentage is averaged over multiple years. For most Institutions we were able to include the full 5 year span.

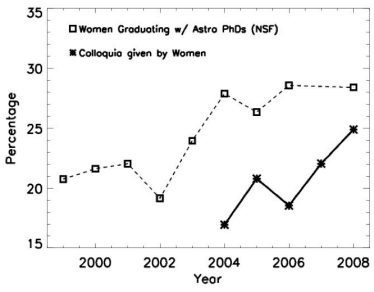
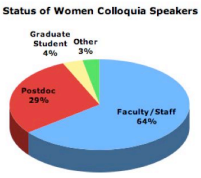


Figure 2: As the number of women receiving PhDs in astronomy and astrophysics (squares) grows, so does the percentage of colloquia being given by women (stars). For the most recent 2 years (2008, 2007) of our survey the faction of colloquia given by women tracks well the percentage of women graduating with PhDs in astronomy & astrophysics 5 years earlier (2002,2001). We compare to these years because after 5 years these women have had the time to become faculty or more senior postdocs who make up the vast majority of women speakers (see pie chart in Fig 3 below.).



Summary and conclusions:

- On average, women give less than a quarter of the colloquia (Fig 1) .This compares to the 17% (AIP, 2007) overall percentage of women astronomy faculty (of any rank) in 2006, the mid-range year surveyed, and 20.8% (NSF, 2007), the percentage of women awarded PhDs in astronomy and astrophysics in 1999, 5 years prior to 2004.
- The percentage of colloquia given by women is growing. (Fig 2)
- The majority of colloquia given by women is given by faculty/staff members. (Fig 3)
- There is no correlation of the percentage of colloquia given by women in an institution with the percentage of 'ladder' female faculty in the institution. (Fig 4)
- From 2004 to 2008, half of the colloquia given by women were given by about 20% of the women giving talks.
- The percentage of colloquia given each year given by women who give more than one is **increasing** while the percentage of women who give multiple talks is **flat or decreasing**. Thus representation of women in colloquia series is becoming more restricted to a "core" group of women. (Fig 6)
- This suggests that although the number of women giving colloquia is increasing, colloquia are not necessarily becoming more representative of the Astronomy and Astrophysics workforce pool.

46 Institutions Surveyed:

Univ of Arizona/NOAO
Arizona State U
UC, Berkeley
Boston U.
Caltech
Carnegie
Univ of Chicago
Columbia U.
U. Colorado, Bolder
Cornell
UC Davis
Univ of Denver
Univ of Florida
Harvard/CfA
Univ of Hawaii
Univ of Illinois, Indiana Univ
UC, Irvine
UC, Los Angeles
Univ of Maryland
Univ of Massachusetts
MIT
Univ of Michigan
Michigan State
Univ of Minnesota
Univ of North Carolina, Chapel Hill
Univ of Pennsylvania
Penn State Univ
Princeton U
Rutgers U.
UC, San Diego
UC, Santa Cruz
Stanford
Univ of Texas, Austin
Texas A&M
Univ of Washington
Univ of Wisconsin
Yale

U British Columbia
Montreal
U Toronto
U Victoria

CTIO/Gemini
Dept Terr. Magnetism
Lowell
STScI
Spitzer Sci Center

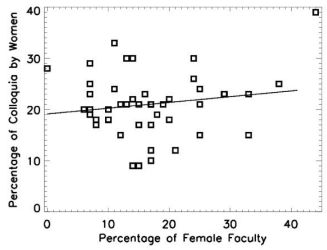


Figure 4: We find that there is little or no correlation between the percentage of women giving colloquia with the "ladder" female makeup of the faculty at an institution. We take "ladder" faculty/staff to be those with tenure track or long term contract equivalent positions at their institutions who are not 'soft money' researchers or emeritus.

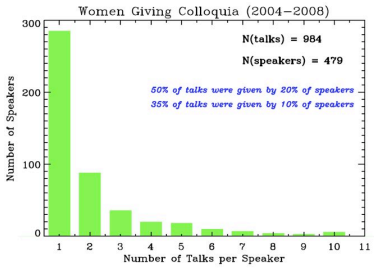


Figure 5: Presented is the distribution of the number of talks per speaker overthe 5-year period considered in this study (2004-2008). Roughly half (505/984) of the speakers gave more than one talk during this time. Note that one speaker gave 17 colloquia. Although this point is notshown on this figure, it has been included in the relevant calculations.

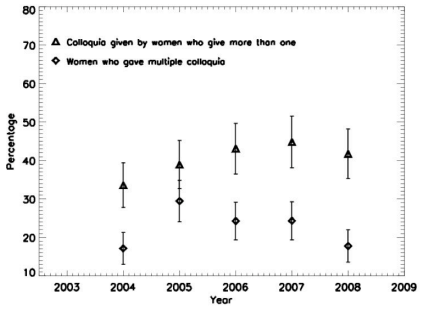


Figure 6: We compare the percentage of colloquia given by "multi-speaking" women in each year (triangles), to the percentage of women who gave those colloquia (diamonds). The errors are Poisson. We find that while the percentage of colloquia is trending upwards, the percentage of women giving those talks is trending downwards. This means that fewer unique women are giving colloquia talks in any given year.