Gender and Collaboration

- A story of uneven progress for women
- Lack of available data leads to these typical approaches:
  - Nation-specific measures and sampling
  - Single discipline approaches
  - Case-based approaches with smaller sampling range
The Social Production of Science
Network mechanisms of collaboration

“In the short run, actors create relations; in the long run, relations create actors.”

Padgett and Powell 2012
Patenting Collaboration in the Life Sciences

- Data from life science directory Bioscan and USPTO on the global partnerships and patents of life science firms, 1976-2005

- Inventor Affiliations:
  - 50% Chemical and technology related firms
  - 15% Pharmaceutical firms
  - 11% Universities
  - 9% Cross-sector inventors
  - 5% Dedicated biotechnology firms
  - 5% Public research organizations
  - 3% Other firms
  - 2% Government

- N Inventors: 215,639, N Patents: 396,194

- 24% Female
Inventor Collaborations in the Life Sciences
1976-2005, Global Population

Characteristics of women inventors:

- Comprise 24% of sample
- Are assigned 38% fewer patents than men
- Proportion of women inventors is growing over time.
- More likely to be one time inventors; are over-represented in lower patenting counts
Collaboration Network Mechanics

Networks analysis can assess:

- Closeness to other inventors (direct and indirect collaborators)
- Strategic locations (ties to those not otherwise connected; short paths to highly central actors)
- Measures of reachability predict productivity benefits
Women have comparable network reach and numbers of ties

Women in fewer strategic positions; their collaborations are more status-asymmetrical.

Tendency towards gender homophily

Network ties are contingent on gender; women see less of a return to their productivity from strategic ties than men
Continuing the conversation….some implications and next steps

- Best practices will stem from addressing underlying mechanisms. Data analytics are only as useful as the explanations that stem from their use.

- Collaboration encompasses multiple dimensions of intersecting activity (publishing, patenting, involvement in epistemic communities, etc.)

- Who is missing from these analyses? How can consideration of multiple identities shed light on marginalization processes?
Thank you!