Analysis of Research Through a Gender Lens

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Global Strategic Networks | Elsevier
On behalf of the report team

October 3, 2019 | Gender Summit 17, Amsterdam
A Strong Foundation

Elsevier Women’s Network

Special Collection on Gender (In)Equality

Knowledge Is Your Strength

#WGS

Gender in the Global Research Landscape
Elsevier Gender Working Group

- **Gender diversity** for journal editorial boards, speakers/panelists at Elsevier conferences, and award selection committees

- Address issues of **implicit bias in peer review**

- Enhanced editorial policies and guidance to authors on **reporting about sex & gender in research**

- **Promote studies** on i) sex & gender in research and ii) diversity in STEM

- Apply **data & analytics to gender issues**
Answering the Call for Data

National Institutes of Health addresses the science of diversity

Hannah A. Valantine* and Francis S. Collins

*Chief Officer for Scientific Workforce Diversity, US National Institutes of Health, Bethesda, MD 20892

Edited by Israel M. Verma, The Salk Institute for Biological Studies, La Jolla, CA, and approved August 26, 2015 (received for review May 14, 2015)

The US biomedical research workforce does not currently mirror the nation’s population demographically, despite numerous attempts to increase diversity. This imbalance is limiting the promise of biomedical enterprise for building knowledge and improving the nation’s health. Beyond ensuring fairness in scientific workforce representation, recruiting and retaining a diverse set of minds and approaches is vital to harnessing the complete intellectual capital of the nation. The complexity inherent in diversifying the research workforce underscores the need for a rigorous scientific approach, consistent with the ways we address the challenges of science discovery and translation to human health. Hence, we identify four cross-cutting diversity challenges ripe for scientific exploration and opportunity: research evidence for diversity’s impact on the quality and outputs of science, evidence-based approaches to identifying and reducing individual and institutional barriers to workforce diversity, and a national strategy for eliminating barriers to career transition, with scientifically based approaches for scaling and dissemination. Evidence-based data for each of these challenges should provide an interpretation, stepwise approach to programs that enhance diversity rapidly within the biomedical research workforce.


“NSF will continue to advance equity through data-driven decision-making.”


Gender in the Global Research Landscape
Information Analytics Expertise
The mission of the ICSR is to cultivate the thoughtful use of metrics and indicators in research evaluation and to promote evaluation best practices.

The ICSR is tasked with developing, characterising and validating new and existing research metrics, indicators and research assessment practices; it also supports independent, external studies on topics within this scope. www.icsr.net
Gender Disambiguation of Authors & Inventors

Scopus®

+ 

NamSor

LexisNexis TotalPatent One®

PATSTAT
Global Perspective

• Focus on countries/regions with high research output
• Each with at least one comparable comparator
• Applicability of our gender disambiguation methodology
• At least two countries from each major region
# Proportion and Number of Researchers by Gender

<table>
<thead>
<tr>
<th>Country</th>
<th>Period</th>
<th>Women</th>
<th>Men</th>
<th>Total</th>
<th>Women %</th>
<th>Men %</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU28</td>
<td>1996-2000</td>
<td>343,946</td>
<td>732,359</td>
<td>1,076,305</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td></td>
<td>2011-2015</td>
<td>965,025</td>
<td>1,389,772</td>
<td>2,354,807</td>
<td>41%</td>
<td>59%</td>
</tr>
<tr>
<td>United States</td>
<td>1996-2000</td>
<td>310,666</td>
<td>696,947</td>
<td>1,007,613</td>
<td>31%</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>2011-2015</td>
<td>705,579</td>
<td>1,071,606</td>
<td>1,777,185</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1996-2000</td>
<td>68,912</td>
<td>154,175</td>
<td>223,087</td>
<td>31%</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>2011-2015</td>
<td>166,481</td>
<td>253,257</td>
<td>419,738</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Canada</td>
<td>1996-2000</td>
<td>36,539</td>
<td>77,569</td>
<td>114,108</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td></td>
<td>2011-2015</td>
<td>99,055</td>
<td>137,259</td>
<td>236,314</td>
<td>42%</td>
<td>58%</td>
</tr>
<tr>
<td>Australia</td>
<td>1996-2000</td>
<td>22,632</td>
<td>45,665</td>
<td>68,297</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td></td>
<td>2011-2015</td>
<td>75,600</td>
<td>97,908</td>
<td>173,508</td>
<td>44%</td>
<td>56%</td>
</tr>
<tr>
<td>France</td>
<td>1996-2000</td>
<td>58,396</td>
<td>114,205</td>
<td>172,601</td>
<td>34%</td>
<td>66%</td>
</tr>
<tr>
<td></td>
<td>2011-2015</td>
<td>121,948</td>
<td>185,350</td>
<td>307,308</td>
<td>40%</td>
<td>60%</td>
</tr>
</tbody>
</table>

- **Purple** represents "women" and **green** "men"
- Researchers = Authors who have published **articles, reviews, and conference proceedings** indexed in Scopus

Sources: Scopus, Genderize, NameSer, and Wikipedia.
Proportion and Number of EU28 Researchers by gender and subject area

- Lower proportion of women among researchers for most comparators:
  - Energy
  - Engineering
  - Mathematics
  - Physics & Astronomy

- Majority of researchers are women in:
  - Nursing
  - Psychology

- Fields in which women comprise nearly half of researchers:
  - Social Sciences
  - Veterinary Sciences
  - Medicine
  - Health Professions
  - Arts & Humanities

Sources: Scopus, Genderize, Name.see, and Wikipedia
Coming Soon: Global Gender Report 2020

- Research participation and output
  - Across multiple stages & output/impact indicators
  - Across (sub)disciplines, geographic regions
  - Authors/Article; Inventors/Patents; Grantees/Grants
- Process of science
  - Citation & authorship patterns
  - Mobility
  - Networks/collaborations
- Career progression
  - Cohorts
  - Pipeline
- Perceptions of gender equity in research

Kumsal Bayazit, CEO of Elsevier, presents at the Harvard Data Science Initiative on ‘Data-driven approaches to Diversity & Inclusion’
Ratio of Women to Men: NLD v. EU28

Sneak peek—preliminary data
Gender Ratios by Career Cohorts

Ratio of women to men among active authors in the period 2014-2018, disaggregated by author publication history

<table>
<thead>
<tr>
<th>Country</th>
<th>Physical Sciences</th>
<th>Broad Category / Name</th>
<th>Health Sciences</th>
<th>Social Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU28</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>1.000</td>
<td></td>
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<td></td>
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<tr>
<td>nld</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Sneak peek- preliminary data
Report and Related Materials

- 2017 Report & Infographic
  - [https://www.elsevier.com/research-intelligence/campaigns/gender-17](https://www.elsevier.com/research-intelligence/campaigns/gender-17) – Infographics

- Report References

- Gender & Research Resource Center

- Sign up for information about the 2020 Report
Thank you!

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