Opportunity Lost?
The Academic Career Pathways of Underrepresented Groups in STEM

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Why Does a Lack of Diversity in STEM Academia Matter?

- Perpetuates differential access, encouragement, and opportunity
- Hinders new approaches to research, new perspectives, and innovation
- Limits availability of role models and mentors
- Sends cultural signals that constrain choices
- Challenges STEM identity development

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Women are Stalled Early in Their Careers

- Men are more likely than women to secure a position upon earning a STEM Ph.D.
  - 70% compared with 65%
- Minority women and mothers are even less likely to have secured a position
  - 59% of racial/ethnic minority women
  - 59% of mothers of young children

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Women Start Down Academic Pathways

Among new STEM Ph.D. recipients with secured positions…

- 71% total find an academic position
- The rate among women is higher
  - 79% of women compared with 67% of men
- The rate among mothers is highest
  - 80% of mothers compared with 63% of fathers

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Early Academic Career Pathways Among STEM Ph.D.s: 2009-2010

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Women’s and Men’s Pathways are not Equal

Among new STEM Ph.D.’s with secured academic positions…

- 76% of women and 81% of men secured positions at research institutions
- Just 70% of mothers secured such positions compared with 75% of fathers

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Low Visibility of Female STEM Leavers in R&D...

STEM Ph.D.’s in Nonacademic Careers Working in Research and Development (R&D)

46% FEMALE

61% MALE

American Institutes for Research | www.air.org
...and in Management

**STEM Ph.D. Holders in Non-STEM Careers**

**Men are More Likely than Women to Hold Management Positions**

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>42%</td>
<td>34%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>61%</td>
<td>25%</td>
</tr>
<tr>
<td>Asian</td>
<td>56%</td>
<td>26%</td>
</tr>
<tr>
<td>White</td>
<td>51%</td>
<td>28%</td>
</tr>
</tbody>
</table>

*Source: American Institutes for Research | www.air.org*
Women and Blacks Most Likely to Leave STEM Careers

- Women more likely than men to leave STEM
  - 19% versus 16%
- Blacks more likely than other races and ethnic groups
  - 21% compared with 17% of whites and 14% of Asians and Hispanics
- Black women most likely of all groups to leave
  - 22%

Who leaves STEM?

- 1 in 6 STEM Ph.D. holders leaves STEM
- 1 in 5 Female STEM Ph.D. holders leaves STEM
- 1 in 5 Black STEM Ph.D. holders leaves STEM

Source: American Institutes for Research | www.air.org
For Blacks and Hispanics, a STEM doctorate costs more

- Blacks are twice as likely to have more than $30K in debt
- An HBCU Ph.D. is most common for black women and first gen college students
  - 72% of those with an HBCU doctorate were also HBCU undergraduates
  - 1/3 graduate with more than $30K in debt, compared with 1/5 of their peers at predominately white institutions

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**Paying for a STEM Ph.D.**

**Debt Disparities:** Among those who earned a Ph.D. in a STEM (science, technology, engineering and mathematics) field, African Americans and Hispanics were more likely to graduate with debt than their white and Asian peers.

**Student Debt for Ph.D. STEM Graduates by Race/Ethnicity**

- **African American:**
  - Over $30,000: 24%
  - $1,000 to $30,000: 22%
  - Zero: 51%

- **Hispanic:**
  - Over $30,000: 14%
  - $1,000 to $30,000: 22%
  - Zero: 64%

- **White and Asian:**
  - Over $30,000: 10%
  - $1,000 to $30,000: 17%
  - Zero: 73%

Source: The Price of a Science Ph.D: Variations in Student Debt Levels Across Disciplines and Race/Ethnicity, Center for STEM Education & Innovation at American Institutes for Research | air.org
References


References


