Gender differences in the interest for scientific careers

Adriana te Kaat
Karen Vandevelde
Ronan Van Rossem

SSTNET workshop in St. Petersburg, 5-6 July, 2012
Background

- Gender balance in educational attainment?
- STEM: Science, Technology, Engineering & Mathematics
Two questions

1. Are male and female students interested in scientific careers?

2. Why are they interested?
Two questions

1. Are male and female students interested in scientific careers?
   - We need both women and men for scientific careers;
   - For this, we need more women in STEM in higher education

2. Why are they interested?
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   Source: Konrad et al., 2000 / Bradley, 2000)
Two questions

1. Are male and female students interested in scientific careers?

- We need both women and men for scientific careers;
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2. Why are they interested?

<table>
<thead>
<tr>
<th>Men:</th>
<th>Women:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary</td>
<td>Interpersonal relationships</td>
</tr>
<tr>
<td>Promotions</td>
<td>Helping others</td>
</tr>
<tr>
<td>Freedom</td>
<td>Variety</td>
</tr>
<tr>
<td>Challenge</td>
<td>Opportunities for growth</td>
</tr>
<tr>
<td>Leadership</td>
<td>Flexibility towards family concerns</td>
</tr>
<tr>
<td>Power</td>
<td></td>
</tr>
</tbody>
</table>

Source: Konrad et al., 2000 / Bradley, 2000
Method

- Centre for R&D Monitoring (ECOOM), University of Ghent, May 2008
- Response rate 30.3%
- 669 male and 1078 female Master students (N=1747) in 11 faculties
- Results are weighted by gender and faculty
Are they interested?

N=1747

Source: ECOOM-UGent, 2008

Life sciences (327)

STEM (313)

Social sciences and humanities (1107)
Are they interested? (2)

**Source:** ECOOM-UGent, 2008

N=1747, **p<0.01**

![Bar chart showing interest in different fields by gender.](chart.png)

- **Life sciences (327):**
  - Men
  - Women

- **STEM** **(313):**
  - Men
  - Women

- **Social sciences and humanities** **(1107):**
  - Men
  - Women

**Source:** ECOOM-UGent, 2008
Are STEM students interested?

N=313, **p<0.01

Source: ECOOM-UGent, 2008
## Why are they interested…?

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interesting career</td>
<td>98%</td>
<td>99%</td>
</tr>
<tr>
<td>2. Intellectual challenge</td>
<td>98%</td>
<td>99%</td>
</tr>
<tr>
<td>3. Fascination specific subject</td>
<td>97%</td>
<td>97%</td>
</tr>
<tr>
<td>4. Interested in research</td>
<td>98%</td>
<td>97%</td>
</tr>
<tr>
<td>5. Creative freedom</td>
<td>95%</td>
<td>93%</td>
</tr>
<tr>
<td>8. Salary **</td>
<td>71%</td>
<td>81%</td>
</tr>
<tr>
<td>11. Prestige **</td>
<td>56%</td>
<td>40%</td>
</tr>
</tbody>
</table>

*N=881-1001, **p<0.01*

Source: ECOOM-UGent, 2008
... and why not?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Boring, monotonous job</td>
<td>66%</td>
<td>69%</td>
</tr>
<tr>
<td>2. I’m not able to meet the requirements **</td>
<td>62%</td>
<td>72%</td>
</tr>
<tr>
<td>3. Not interested in specific subject</td>
<td>56%</td>
<td>61%</td>
</tr>
<tr>
<td>4. Unclear job content **</td>
<td>49%</td>
<td>64%</td>
</tr>
<tr>
<td>5. My grades are not good enough</td>
<td>52%</td>
<td>57%</td>
</tr>
</tbody>
</table>

N=650-678, **p<0.01

Source: ECOOM-UGent, 2008
... and why not?(2)

<table>
<thead>
<tr>
<th>Issue</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Nobody asked me *</td>
<td>46%</td>
<td>55%</td>
</tr>
<tr>
<td>7. Competitive atmosphere **</td>
<td>30%</td>
<td>53%</td>
</tr>
<tr>
<td>9. Lack of supervision **</td>
<td>33%</td>
<td>47%</td>
</tr>
<tr>
<td>12. One needs to give up the personal life **</td>
<td>23%</td>
<td>36%</td>
</tr>
<tr>
<td>13. Hard to combine with a family **</td>
<td>22%</td>
<td>37%</td>
</tr>
<tr>
<td>14. Low salary **</td>
<td>39%</td>
<td>19%</td>
</tr>
<tr>
<td>15. It’s a men’s world **</td>
<td>7%</td>
<td>20%</td>
</tr>
</tbody>
</table>

N=650-678, **p<0.01, *p<0.05

Source: ECOOM-UGent, 2008
Conclusions
Conclusions

• Over all disciplines, men are somewhat more interested in scientific careers;
• But also many female students are potentially interested!
  • In Bioscience Engineering even more than men.
Conclusions

• Over all disciplines, men are somewhat more interested in scientific careers;
• But also many female students are potentially interested!
  • In Bioscience Engineering even more than men.
• The main problem: underrepresentation of women in STEM in higher education
What can we do?

• Combat gender inequalities in secondary and higher education?
What can we do?

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• Make scientific career ‘women friendly’
What can we do?

• Combat gender inequalities in secondary education?
• Make scientific career ‘women friendly’
• Promoters may have to recruit women more actively
  – Self-confidence
  – Discrimination?
  – Women have a disadvantaged position
  – Family
Questions and discussion

Contact:
Adriana.teKaat@UGent.be
www.ECOOM.be/DoctoralCareers
Volledige tabellen
<table>
<thead>
<tr>
<th>Wetenschappen:</th>
<th>Engineering en architectuur</th>
<th>Bioscience engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vakgroep Wiskunde</td>
<td>Vakgroep Architectuur en Stedenbouw</td>
<td>Vakgroep Landbouweconomie</td>
</tr>
<tr>
<td>Vakgroep Toegepaste Wiskunde en Informatica</td>
<td>Vakgroep Mechanica van Stroming, Warmte en Verbranding</td>
<td>Vakgroep Plantaardige Productie</td>
</tr>
<tr>
<td>Vakgroep Vaste-Stofwetenschappen</td>
<td>Vakgroep Mechanische Constructie en Productie</td>
<td>Vakgroep Gewasbescherming</td>
</tr>
<tr>
<td>Vakgroep Fysica en Sterrenkunde</td>
<td>Vakgroep Informatietechnologie</td>
<td>Vakgroep Bos- en Waterbeheer</td>
</tr>
<tr>
<td>Vakgroep Anorganische en Fysische Chemie</td>
<td>Vakgroep Elektronica en Informatiesystemen</td>
<td>Vakgroep Biosysteemtechniek</td>
</tr>
<tr>
<td>Vakgroep Organische Chemie</td>
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<td>Vakgroep Biochemische en Microbiële Technologie</td>
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<td>Vakgroep Analytische Chemie</td>
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<tr>
<td>Vakgroep Plantenbiotechnologie en Bio-inFORMATICA</td>
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<tr>
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<td>Vakgroep Textielkunde</td>
<td>Vakgroep Toegepaste Ecologie en Milieubiologie</td>
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<tr>
<td>Vakgroep Biologie</td>
<td>Vakgroep Chemische Proceskunde en Technische Chemie</td>
<td>Vakgroep Wiskundige Modellering, Statistiek en Bio-inFORMATICA</td>
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<tr>
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<td>Vakgroep Biomedische Moleculaire Biologie</td>
<td>Vakgroep Wiskundige Analyse</td>
<td>Vakgroep Dierlijke Productie</td>
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<td>Vakgroep Moleculaire Biotechnologie</td>
</tr>
<tr>
<td></td>
<td>Vakgroep Technische Bedrijfsvoering</td>
<td></td>
</tr>
</tbody>
</table>
Enrollment in faculties

Source: ECOOM-UGent, 2008
Background

• Gender balance in educational attainment?
• Why is this important?
Are they interested?

N=1747

- Medicine and Health Sciences (216)
- Pharmaceutical Sciences (39)
- Veterinary Medicine (72)
- Bioscience Engineering (100)
- Engineering and Architecture (147)
- Natural Sciences (66)
- Economics and Business (136)
- Political and Social Sciences (225)
- Psychology and Educational (214)
- Law (237)
- Arts and Philosophy (295)

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