STEREOTYPIC ROLES AND MICROAGGRESSIONS IN ENGINEERING STUDENT GROUP PROJECT TEAMS

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Supported by NSF-REAL Grant 1420168, and NSF-GSE Grant 1137031, D. Sekaquaptewa (PI) and L. Meadows
Gender stereotypic role adoption in student group project teams

- Student group projects are common in engineering and other fields.
- Small groups develop a project and present it using Powerpoint at the end of the term.
- Students value presentation experience, but they may be vulnerable to stereotyping processes.
Analysis of Videotaped Footage

- Engineering 100: Introduction to Engineering
  (FALL 2008 - WINTER 2011)
- Group project presentations are routinely videotaped for archives
Prototype Functionality

- Faraday’s Law of Induction: “If a flux passes through a turn of a coil of wire, a voltage will be induced in the turn of wire that is directly proportional to the rate of change in the flux with respect to time”

- Generated energy is stored in a rechargeable battery

- Mini USB port in belt with separate cord connect to phone port

Final Product Recommendations

- Faux Leather exterior
- Multiple styles and sizes
  - Men, Women, Children
- Streamline Belt
- Increase Energy Output via more Inductors
- Waterproofing
Technical vs. Non-Technical Slide Ratio by Student Gender

2-way interaction, $F(1, 719) = 20.27, p < .001$
Speaking Time Ratio by Student Gender

Main effect of gender, $F(1, 720) = 5.88, p = .02$
## Microaggressions coding and survey

<table>
<thead>
<tr>
<th>Theme (D. W. Sue, 2010)</th>
<th>Example in engineering team context</th>
<th>Implicit Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumption of Inferiority</td>
<td>Discrediting/devaluing of woman’s ideas</td>
<td>Women’s ideas are not as good as men’s</td>
</tr>
<tr>
<td>Traditional Gender-Role Stereotyping</td>
<td>Surprise that women know technical information</td>
<td>It is unusual for women to be technically competent</td>
</tr>
<tr>
<td>Sexist Language</td>
<td>Exclusive use of male pronouns to describe engineers</td>
<td>Women are not engineers</td>
</tr>
<tr>
<td>Sexual Objectification</td>
<td>Comment on attractiveness of female teammates</td>
<td>Women’s appearance is for men’s enjoyment or pleasure</td>
</tr>
<tr>
<td>Second-Class Citizen</td>
<td>Assignment of less important (secretarial) tasks</td>
<td>Women occupy only supportive roles on teams</td>
</tr>
<tr>
<td>Benevolent sexism (passive/aggressive paternalism)</td>
<td>Adoption of sexist social convention (e.g. “ladies first”)</td>
<td>Passively expressing sexism under the guise of social convention</td>
</tr>
</tbody>
</table>
Summary: Stereotyping in engineering student group project teams

- Men take on more active roles than women in ENGR student group project presentations.
- Gender stereotypes play a role.
- Implications for learning, as students gain mastery through active participation.
- Identifying strategies to reduce these patterns can improve outcomes for men as well as women.