

## Research Brief

### *Gendered Facets of Faculty Careers and Challenges to Engineering Education as an Inclusive Profession*

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Paper presented at the 2012 AAEE Annual Conference, Melbourne, Australia

#### **Background**

Women faculty members remain underrepresented in many science, technology, engineering, and mathematics (STEM) fields in both Australia and the United States. Given the current interest in developing engineering education as a profession in its own right, it is necessary for engineering educators to examine and understand the experiences and working conditions of engineering faculty members. Otherwise, professionalization efforts risk ignoring and perpetuating gendered facets of faculty careers. Furthermore, those gendered facets of faculty careers stand as potential barriers to the successful promotion of engineering educator identities. Better understandings of the experiences of female faculty are necessary because gender biases of faculty careers often go unnoticed or unvoiced and therefore remain unproblematic as neutral features of academia.

#### **Purpose**

The purpose of this study was to identify factors contributing to the low numbers of female faculty members in engineering (and related) fields, identify gendered facets of faculty careers, and highlight bodies of literature that are pertinent (based on our data) to engineering education.

#### **Methods**

Forty-four semi-structured interviews averaging 90 minutes in length were conducted with female and male faculty members in science, technology, engineering, and mathematics (STEM) departments at a large public research university in the United States. Participants were asked about many different facets of their experiences as STEM faculty members. Transcript data were analysed using a grounded theory approach to identify gender-related themes that shape faculty careers.

#### **Results**

Three themes emerged as gendered influences on faculty careers. They were: socialization, gender roles and unconscious bias, and work-family balance. Each theme reveals ways in which academic institutional (and broader social) norms generally work to the advantage of male faculty and the disadvantage of female faculty.

#### **Conclusions**

There are a variety of ways in which engineering faculty careers are gendered, and literature from relevant fields such as higher education and social psychology should be brought to bear on our understandings of those gendered facets. Gender inequalities, such as those we identify, should be understood as challenges for the engineering education community to address as it aspires to become a more equitable profession, and we also offer these themes as important research horizons for engineering education researchers.

#### **Implications for Practice**

- There are already large bodies of literature that make recommendations to address the challenges faced by faculty at Purdue. Before developing recommendations, it could be useful to explore what has already been written, and perhaps more importantly, what interventions have been tested and evaluated.
- Policies designed to address work-family balance have not eliminated that challenge for female faculty and further work should be done to improve existing policies.
- Socialization is often overlooked because so much of it is informal, but given the significant role it plays in career development, faculty training specifically on gendered socialization practices could be beneficial.

#### **Citation**

Beddoes, Kacey, Alice L. Pawley & Dina Banerjee. (2012) "Gendered Facets of Faculty Careers and Challenges to Engineering Education as an Inclusive Profession." Paper presented at the Australasian Association for Engineering Education Conference, Melbourne, Australia, December 3-5.

#### **Link**

<http://feministengineering.org/wp-content/uploads/2012/11/Beddoes-aaee2012.pdf>