

## **Sponsorship: Engineering's Tacit Gatekeeper**

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Recent educational research has emphasized the centrality of identity to learning and development. In engineering education research and in STEM fields more broadly, formation of a professional identity is increasingly viewed as fundamental to learning, retention, and persistence, in particular with regard to historically underrepresented groups. This paper explores the relationship between students' interests and their decisions to persist in or withdraw from their majors.

### **Implications of Findings**

We argue that students' intrinsic interests develop into discipline relevant intrinsic interests only through the processes of sponsorship. Thus, "intrinsic interest in engineering" is always mutually constructed by the student and sponsors within the discipline. These processes of sponsorship, furthermore, are neither natural nor neutral, but contingent and contestable, and thus a major task of a social theory of identity is to explore how particular kinds of persons are produced as belonging to disciplines, while other types of persons are produced as not belonging.

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### **Method and Background**

This study is part of the Academic Pathways Study (APS), a multi-year, longitudinal study of learning and development in undergraduate engineering students. A component of the APS is an ethnographic study of 16 students at each participating campus. The ethnographic teams use a variety of ethnographic methods. In this paper, results are based on two analytic case studies of students at one campus (University of West State) during the first two years of the APS.

### **What We Found**

The following two case studies are based on interviews conducted during the students' first two years as part of the CAEE Academic Pathways Study (APS) at one of the CAEE partner universities.

**Case Study—Adam:** Adam, a white male, accepted into the mechanical engineering department after his first year, presented several "themes" with regard to his abilities and perceptions of engineering: 1) Adam's view of math as "black and white" (right/wrong); 2) his identification of math with engineering; and 3) his use of his academic ability to separate himself from, and elevate himself above, his peers. Adam's view of engineering shifted during his second year at

the university to acknowledge that engineering is not based on black or white, or right or wrong answers to problems, and that engineering was not the same as math.

Case Study—Bryn: Bryn, a woman of Mexican descent, speaks of herself as a "people person" and sees the ability to interact meaningfully with people as essential to her college experience and eventual career; she also expects her college experience to broaden her perspective to better equip her to do the socially oriented work she wants to do. She presented the following "themes" with regard to her abilities and perspectives on engineering: 1) her view of knowledge as not simply right or wrong, black or white; 2) her view of the importance of introducing diversity into engineering education, specifically with respect to women and minorities; and 3) her dissatisfaction with what she sees as the competitive, individualistic nature of the engineering curriculum. These views remained consistent through her first two years and resulted in her choice to major in technical communication and not pursue a career in engineering.

Both of these students are engaged in ongoing attempts to fit their own identity development with their increasing understanding of the discipline of engineering. However, only Adam is doing so from a position within the discipline of mechanical engineering. In our analysis, Adam's interests have been recognized by powerful agents within the disciplinary structure, while Bryn's have not. We argue that this is not because Adam has more "intrinsic interest" in engineering than does Bryn. Instead, both Adam's interest in school math as well as his preference for individual competition hold prestige within the discipline and are sponsored in the routine practices of engineering education. Bryn's interests, on the other hand, are more problematically related to routinized ways of evaluating students.

We are not questioning whether people have intrinsic interests, rather, we are arguing that students' intrinsic interests develop into discipline-relevant intrinsic interests only through the processes of sponsorship. Thus, "intrinsic interest in engineering" is always mutually constructed by the student and sponsors within the discipline. These processes of sponsorship, furthermore, are neither natural nor neutral, but contingent and contestable, and thus a major task of social theory of identity is to explore how particular kinds of persons are produced as belonging to certain engineering disciplines, while other types of persons are produced as not belonging.

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