The professional context for the future engineer is changing. Engineering graduates can no longer expect a career with a single employer and they must be prepared to meet the needs of diverse organizations. Companies are looking for engineers who can identify unmet needs, problem solve under time constraints, and adapt to technological change. In response to changing career needs, higher education institutions are reforming how they train engineers. Most recently, this reform has led to the incorporation of entrepreneurship into engineering undergraduate curriculum.

As more programs rush to launch engineering entrepreneurship programs, it is critical that we better understand the outcomes of entrepreneurship education (EE) and how programs engage diverse populations.

### Goals

These projects investigates how EE is bridging the gap between traditional education and the career needs of the 21st century engineer by:

1. Establishing the fundamental concepts engineering students can gain from entrepreneurship education;
2. Generating outcome measures aligned with the goals of EE for engineers;
3. Conducting pilot evaluation of how we are teaching engineering students 21st century skills through the emerging LL entrepreneurship curriculum;
4. Developing assessment material that can be used by engineering faculty, staff and administrators launching engineering entrepreneurship programs.
5. Developing a conceptual model for student participation in EE based on entrepreneurship and participation theory.

### Engineering Entrepreneurship Assessment

**Entrepreneurial Self-Efficacy**

McGee’s entrepreneurial self-efficacy (ESE) measure has been validated for use with engineering students and measure self efficacy with respect to:
- Searching
- Planning
- Marshaling
- Implementing Finances & People

Students’ ESE pertaining to searching, marshaling, and implementing-finance were significantly higher at the end of a EE semester when compared to pre responses.


**Entrepreneurial Knowledge**

Developing a knowledge inventory for customer discovery

**Entrepreneurial Behavior**

Developing an engineering entrepreneurial behavioral inventory

### Recent Publications

- Shekhar, P., et al., Cummings, R., Tafurt, Assessment of Student Learning in an Entrepreneurship Practicum Course. *ASEE 124th Annual Conference, Columbus, OH, 2017*

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