Kern Entrepreneurship Education Network (KEEN) at Union College: Instilling the Entrepreneurial Mindset into Engineering Undergraduates

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INTRODUCTION
The entrepreneurial mindset is embedded in Union College’s history and mission. Union educates students to become engaged, innovative, and ethical contributors to an increasingly diverse, global, and technologically complex society. Throughout all phases of a Union education, students develop capacities for innovation and creativity by taking courses and practica in visual and performing arts, design and entrepreneurship courses, modules and projects. With ABET-accredited engineering programs and an institutional commitment to both entrepreneurship and integrative liberal education, Union is positioned to become a valuable member of the KEEN Network. As a member, Union will systematically foster the entrepreneurial mindset in all of its engineering students so that they can become positive contributors to business and society.

Union’s KEEN project involves PIs working with external Kern Fellows to recruit and prepare faculty to infuse the entrepreneurial mindset among engineering students throughout their Union experience with curricular (from introducing mindset in intro engineering course, to modules in creativity and business fundamentals in sophomore and junior years, to product concepts for commercialization in senior capstone courses), co-curricular (a fund for student exploration and creativity), and extra curricular (competitions and experiential learning) opportunities. Union will give all engineering students the chance to listen to the customer, identify needs and opportunities, design solutions, evaluate solutions and implement a sustainable plan that will succeed and persist. Students will become comfortable with failure and recognize that failure is an opportunity to learn. It is our hope there will be widespread support of our approaches and that others will adopt these pedagogies.1

APPROACH
Engineering Fundamentals
Creativity and Innovation
Customer Awareness
Communication Skills
Social Responsibility
International Programs
Internships
Double Majors/Minors

The Liberal Arts

The Entrepreneurial Engineering Mindset
At Union College

CONCLUSIONS
The proposed faculty workshops, speaker series, and retreats are critical to getting faculty buy-in for integrating the entrepreneurial mindset into courses permanently. Having the support of the business and creativity SWAT teams will make faculty more comfortable in adopting changes in their courses that are outside their expertise. Faculty buy-in is critical to creating the entrepreneurial mindset at Union.

Having Union recognized as a college that embraces entrepreneurial thinking and innovation will result from the Union community getting the message out. This includes student participation in competitions, workshops, and presenting their work at professional meetings. Faculty will need to share their experiences with colleagues at other schools and promote the initiative. Administrators will have to be champions of the initiative to their colleagues and alumni.

Being recognized as a leader in innovation and the entrepreneurial mindset will require dissemination of the advances and techniques used to promote these ideas at professional meetings. This will also include integrating sessions in the Union College annual conference on Engineering and the Liberal Arts that specifically deal with the role that innovation and the entrepreneurial mindset plays in the education of students. Social entrepreneurship resonates with many of Union’s constituents and therefore plays a significant role to gain recognition as a leader in innovation and the entrepreneurial mindset. Union College Minerva Fellows that are working in developing countries will coordinate with engineering students in identifying problems at the community level, propose and vet solutions, and implement the solution.

REFERENCES
1. KEEN Theory of Change

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1. Engineering at Union College
2. OCNIA Grants
3. NYSTAR
4. K.F. Kern Family Foundation

Values: Education, Innovative.