



## **Achieving Scale of Educational Innovations: A Panel Session of Start-Up/Entrepreneurial Approaches**

### **Dr. Ann F. McKenna, Arizona State University, Polytechnic campus**

Ann F. McKenna is a Professor and Director of the Polytechnic School in the Ira A. Fulton Schools of Engineering at Arizona State University. Prior to joining ASU she served as a program director at the National Science Foundation in the Division of Undergraduate Education, and was on the faculty in the Department of Mechanical Engineering and Segal Design Institute at Northwestern University. Dr. McKenna received her B.S. and M.S. degrees in Mechanical Engineering from Drexel University and Ph.D. from the University of California at Berkeley. Dr. McKenna is also a Senior Associate Editor for the Journal of Engineering Education.

### **Dr. Karl A Smith, University of Minnesota Twin Cities**

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### **Dr. Chris Swan, Tufts University**

Chris Swan is the Associate Dean of Undergraduate Curriculum Development in the School of Engineering and an associate professor in the Civil and Environmental Engineering department at Tufts University. He has additional appointments in the Department of Education, Jonathan M. Tisch College of Citizenship and Public Service and Center for Engineering Education and Outreach at Tufts. His current engineering education research interests focus on learning through service-based projects and using an entrepreneurial mindset to further engineering education innovations. He also researches the development of reuse strategies for waste materials.

### **Rocio C Chavela Guerra, American Society for Engineering Education**

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Governmental, corporate and non-profit organizations have been calling for transformational change in science, technology, engineering and mathematics (STEM) education in the U.S. for many years. As a result, a number of Federal agencies as well as corporate foundations have invested significant resources in an effort to improve teaching and learning in STEM disciplines. However, those efforts that may have the potential for transformative change often do not scale or extend far beyond their local settings; furthermore, they are difficult to sustain without continued external funding.

This panel brings together several groups who are focused on fostering an entrepreneurial mindset to advance the scaling and sustaining of educational innovations. The panelists will offer approaches and strategies for achieving scale by examining the educational ecosystem, and offering entrepreneurship-focused models to embed this goal at the outset. The panel will consist of four representatives.

**1. Epicenter** offers entrepreneurship and innovation programs for engineering faculty and students; partners with leaders in academia and government to build a national entrepreneurship agenda in engineering; conducts research on higher education models; hosts online classes and resources; and forms communities around entrepreneurship in engineering education. (<http://epicenter.stanford.edu/page/about>)

**2. I-Corps™ L** is designed specifically for STEM educators with innovative teaching strategies, technologies, or set of curriculum materials. The principal goal of the program is to foster an entrepreneurial mindset within the education community and to impact the way innovations are designed and implemented. It provides real world, hands-on training and a model approach to assess the potential for sustainable scalability of education innovations. The I-Corps™ L program uses a lean startup approach to scaling teaching and learning innovations into broad practice by using established strategies for start-ups. (<http://www.asee.org/i-corps-l/about>)

**3. The National Science Foundation** established the Innovation Corps (I-Corps™) with the primary goal to foster entrepreneurship that will lead to the commercialization of technology that has been supported previously by NSF-funded research. Combining experience and guidance from established entrepreneurs with a targeted curriculum, I-Corps is a public-private partnership program that teaches grantees to identify valuable

product opportunities that can emerge from academic research, and offers entrepreneurship training to student participants. ([http://www.nsf.gov/news/special\\_reports/i-corps/](http://www.nsf.gov/news/special_reports/i-corps/))

4. **VentureWell** (originally called the National Collegiate Inventors and Innovators Alliance, or NCIIA) offers grants to faculty to start programs in technology entrepreneurship, particularly ones that focused on the development of E-Teams—groups of students, faculty and advisors working to commercialize a novel idea. VentureWell also funds the best E-Teams coming out of those courses and programs, helping them bring their inventions to market. The goal is to stimulate science and technology invention, innovation and entrepreneurship on university and college campuses, and move the strongest ideas rapidly forward to commercialization. (<http://venturewell.org>)

Each of these group's representative will provide unique insights, and practical and proven approaches on how to make headway for scaling and sustainability of educational innovations. The panel session will be designed to be interactive. The working schedule is given below but can be modified to adjust to the conference schedule.

Short introduction of panelists (5 min)

Panel Q & A with 5-7 key questions (55 min)

Wrap-up with questions from the audience (10 min)