

Innovation and Entrepreneurship at the University of Pittsburgh (In 10 Minutes)

Larry J. Shuman
Senior Associate Dean for
Academic Affairs





Pathways to Innovation

“to unleash the entrepreneurial potential of undergraduate engineering students across the United States to create bold innovators with the knowledge, skills and attitudes to contribute to economic and societal prosperity.”



Stanford
University



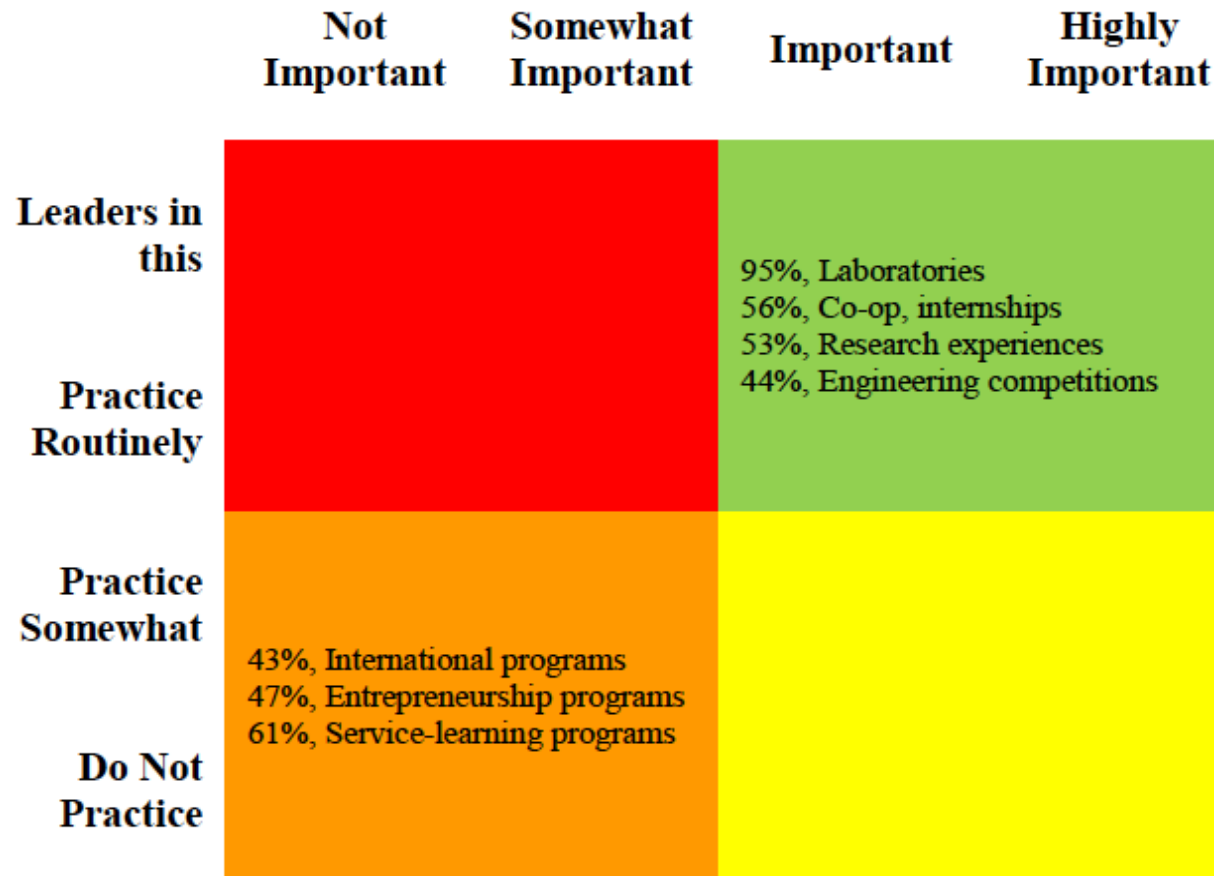
Pathways to Innovation

A 1-2 year program for embedding innovation and entrepreneurship in undergraduate engineering education

- Cohort of schools engaged in change process
- Customized approach based on a careful assessment of the school's needs, assets, and constraints
- Support: accountability, coaching, exemplary models, access to emerging research, travel stipends

FIGURE 4

Undergraduate learning environments.



Design Thinking

- Formal method for practical, innovative resolution of problems and creation of solutions.
- Solution-focused thinking – start with goal instead of solving a problem.
- The designer's sensibility and methods used to match needs with what is technologically feasible



The Maker Movement

- Informal, networked, peer-led, and shared learning motivated by fun and self-fulfillment.
- Novel applications of technologies, and the exploration of intersections between traditionally separate domains and ways of collaborating.
- Associated with the rise of hackerspaces, Fab Labs and other "maker spaces" allowing sharing ideas, tools, and skillsets.

Freshman Course: “The Art of Making”

- User-centric design
- Design thinking
- Low resolution prototyping
- Systems thinking
- Higher resolution prototyping
- Interfaces to enhance users’ abilities to operate systems efficiently
- Smart systems: automated systems that sense the world and automatically respond in useful ways.



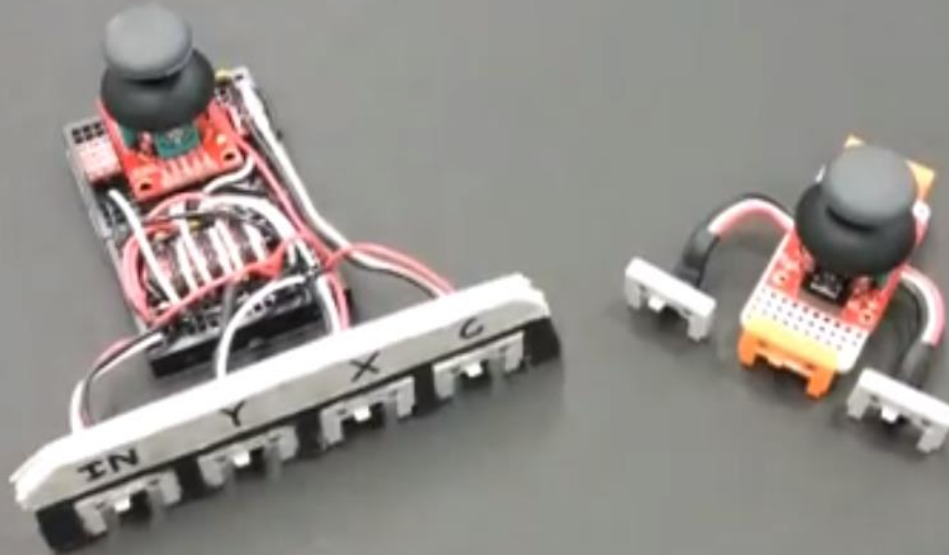
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Happy Happy Joy Bit

Happy Happy Joy Bit



<http://littlebits.cc/bitlab/bits/happy-happy-joy-bit>



Working Prototype

Concept

Design Expo



Art of Making: Outreach



The “Art of Making” project is increasingly engaged in outreach to local secondary schools: the Maker Faire, hosting tours/demos from local schools, the K-12 SciTech festival.

You can *tell* students how cool STEM fields are and they’ll listen politely (maybe). Or you can have them walk up to a trio of dancing robots and ask with wide eyes “How did you make this? How can I make this?”

- Joe Samosky, Instructor

@Pittengineering @makerfairepgh my daughter had such a great time at your booth! Thanks for being so kind

