

Thayer School of Engineering

PhD Innovation Program

Training PhD-level Engineering Entrepreneurs

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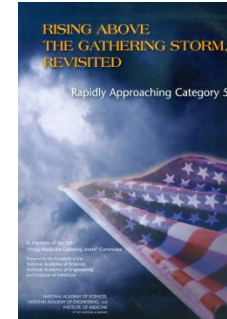
*Dean, Thayer School of Engineering, Dartmouth
College*

*ASEE EDI Annual Meeting
Scottsdale, AZ April 2014*

background – STEM challenge

CHALLENGE

- National need for STEM-education for global competitiveness



- Reports issued 2004-2006 cite need for STEM funding, lead to COMPETES
- Less noticed, also cite need for better translation of invention out of laboratories
- “Entrepreneurship” programs developed by engineering schools –UNDERGRADUATE
- PhD programs remain focused on producing faculty as model; little attention to incorporating entrepreneurial focus explicitly into PhD



Dartmouth “Engineering PhD Innovation Program” - 2008

Designed to be **SMALL, SELECTIVE, FOCUSED**

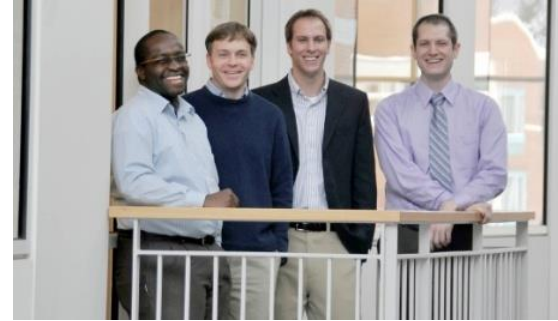
Goal: **LIMIT** to 5 new students per year

Separate criteria beyond PhD - extra **COURSEWORK**, write and present **BUSINESS PLAN**, conduct late-stage 6 mo. **INTERNSHIP**

REVERSE FELLOWSHIPS - funded yrs 3-5 of PhD

PROJECT SEED FUNDING also provided

Luce Foundation grant 12/08



PhD Innovation Program – Fall 2013, 5 year status update

Complements ugrad and MEM offerings, enabling representation of full “**Dartmouth Engineering E’ship Program**” (<http://engineering.dartmouth.edu/about/dartmouth-difference/DEEP/>)

SUPPORT – NSF Partners for Innovation funding; endowment

LEADERSHIP – hired faculty entrepreneur to oversee program
(Columbia professor / JPL / entrepreneur / NAI / NAE)

Broad **FACULTY PARTICIPATION**

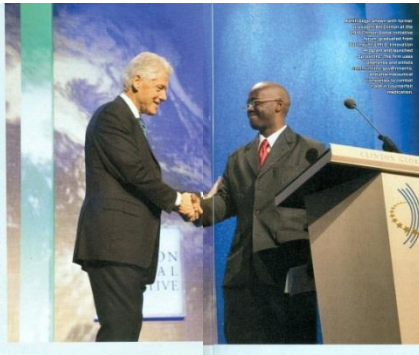
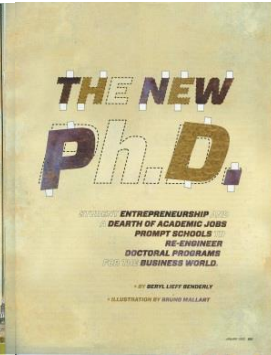
RECOGNITION for company spun out of university

OUTCOMES substantially different over past 3 years (Jan 2014)

- 50% of students filing for IP protection (v. 15% baseline)
- PhD entrepreneurs: 0% (regular) v. 25% (innovation)
- PhDs to startup: 4% (regular) v. **75%** (innovation)
- PhDs to post-doc: 38% (regular) v. 13% (innovation)
- Baseline (regular PhD, ‘79-’04): 26% to academic positions v. 0 to date



program recognition



NAE Gordon Award, May 2014

GOAL – was to change range of outcomes for our PhD students. Initial trend promising.

<http://engineering.dartmouth.edu/academics/graduate/innovation/>

