Entrepreneurship in Materials Science and Engineering at MIT

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Department Head
Department of Materials Science and Engineering
Massachusetts Institute of Technology
MIT Departments, Labs, and Centers

With Blood in Their Eyes
Thomas Cobb
University of Arizona Press
I&E Student Groups

- MIT Water Club
- iCLUB MIT Sloan
- MIT Food and Agribusiness Innovation Prize
- MIT Hacking Medicine
- techX
- SEID Sloan Entrepreneurs for International Development
- MIT Fintech
- Global Startup
- Bitcoin Club
- MIT Chief
- MIT Clean Energy Prize
- HackMIT
- MIT Design for America
- VCPE Club
- StartLabs
- MIT Sloan Water Innovation Prize
- MIT Energy Club
- MITFAC
- $100K MIT Entrepreneurship Competition
30,000 currently active companies founded by MIT alumni

4.6 million employees + $1.9 trillion in annual revenue = the GDP of the 10th largest economy in the world
Our goal in DMSE is to promote strategic entrepreneurship.

**It is NOT**

- An end unto itself
- A quick grab at low-hanging value
- Out of line with academic interests

**It IS**

- A search for the best path for a technology to reach the market
- A technology development path you commit yourself to for a potentially long time
- A manner of strategic thinking that connects engineers to social sciences

(a great program will kill off many incipient startups before they are invested)

(teach how true innovations build value for decades to come)
Our goal is to promote *strategic* entrepreneurship

We have entrepreneurship at all levels across the department:

- Undergraduate students
- Graduate students
- Postdocs
- Junior faculty
- Senior faculty

Materials-based startups are difficult:

- Difficult to meet VC standards
- Long development cycles
- High capital intensity

- **Infuses a go-long attitude**
- DMSE is recognized Institute-wide as a leader here: help set the strategic tone
Undergraduate Minor in Entrepreneurship & Innovation

Jointly offered by the School of Engineering and Sloan School of Management with an advisory board across all five schools.

Director: Michael Cima from DMSE
3.207 Innovation and Commercialization

(Subject meets with 3.086)
Prereq: None
Units: 4-0-8

Explores in depth projects on a particular materials-based technology. Investigates the science and technology of materials advances and their strategic value, explore potential applications for fundamental advances, and determine intellectual property related to the materials technology and applications. Students map progress with presentations, and are expected to create an end-of-term document enveloping technology, intellectual property, applications, and potential commercialization. Lectures cover aspects of technology, innovation, entrepreneurship, intellectual property, and commercialization of fundamental technologies.

E. Fitzgerald

New course in Entrepreneurship and Innovation Minor

Moving Ideas to Impact

The MIT Innovation Initiative strengthens and evolves the pathways for the MIT community and its partners to develop ideas into solutions addressing today's most pressing challenges.
Stages of E&I Support on Campus

Stage 1: Inspiration/Invention/Idea Generation
Stage 2: Technology Development/Idea Refinement
Stage 3: Commercialization Planning
Stage 4: Development of Business Plan
Stage 5: Real Company/Project Formation
Stage 6: Early-Stage Growth
Stage 7: High Growth

Materials-based prototyping competition
Aims at products in energy, sustainability
Industry sponsored, industry and entrepreneurial mentoring
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DMSE Lemelson-Vest endowed fund
$10k grants to student projects to move ‘one step closer to product viability’ (off scope of a funded project)
### Stages of E&I Support on Campus

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**Postdoc entrepreneur bootcamp program**

**Kavanaugh Fellows:**
Fully supported postdocs, liberated from funding concerns to mature their technology and develop a commercialization plan
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The Engine:
An MIT-founded, independent capital fund aimed at “go-long” value building through hard tech investing
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