Entrepreneurial Engineering Education at the University of Maryland

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Vision

A robust culture in which technical students and faculty learn to be leaders in transforming knowledge and technology into commercial enterprises
Outline

• Technology Entrepreneurship
  Culture Building

• Resources for Tech Entrepreneurs

• Hands-On Venture Formation
Technology Entrepreneurship
Culture Building

- Technical Entrepreneurship course in Engineering school
- Tech Ventures Club
- Hinman CEOs Program
- Tech Startup Boot Camp
Course: Fundamentals of Technology
Startup Ventures

- 30 technical graduate students
- Boardroom setting
- Study basic processes of tech company formation and operation
- Form into teams
- Teams develop business plans during semester
- Teams present plans to “judges”
- Course co-taught by engineering professor and venture capitalist
Tech Ventures Club

- Dynamic forum for technical graduate students to network and explore commercializing an idea and forming a venture
- 75 active members
- Monthly meetings include start-up workshops, speakers, and social mixers
- Members have opportunity to network with local VCs, service providers, business students and entrepreneurs
Hinman CEOs Program

- 100 undergrads, one-half majoring in technical disciplines
- **Community**
- Technology
- Seminars and Workshops
- Product Development Projects; Internships
- Business School Entrepreneurship Courses
- Start companies
Tech Startup Boot Camp

- Kicks off the academic year
- 200+ students and faculty
- Regional sponsors
- Basic startup processes
  - Evaluating tech ideas
  - IP basics and licensing
  - Legal fundamentals
  - Building a team
  - Obtaining financing
  - Entrepreneur experiences
- Presented by experienced VCs, service providers, and tech executives
- Networking
Resources for Tech Entrepreneurs

- Business Plan Competition
- Web Resources
- Mentoring
Business Plan Competition

• Culmination of academic year
• $50,000 in prizes raised from sponsors
• 60+ entries
• Select top 16 based on executive summaries
• Judging panel selects top six for full plans and presentations
• Usually three awards
• Networking and mentoring sessions between six finalists and judges/sponsors during the Spring semester
Web Resources

- Technical entrepreneurship web portal under development:
  - Forecasting template
  - Business plan preparation guidance
  - IP rules
  - Information on funding sources
  - Testimonials and case studies
Mentoring

- Business plan reviews, questions about funding, advice about IP common inquiries to mentors
- Available to students in Hinman CEOs program, ENES course, and Tech Ventures Club
- University staff involved in technical entrepreneurship provide “level one” mentoring
- Extensive database of entrepreneurs, consultants, retired execs, VCs, and service providers offer “level two” mentoring
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<td>• VentureAccelerator</td>
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<td>• Seed-Stage Funding</td>
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<td>• Full-Service Tech Incubator</td>
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VentureAccelerator

- Substantial Hands-on consultation and advice to selected entrepreneurs and young firms:
  - Introductions to funding sources
  - Preparation of presentations and business-plans
  - Strategic planning
  - Executive recruitment
- Play same roles as active Advisory Board members
- Former VC Partner manages Accelerator
Seed Stage Funding

• Product and prototype development projects for startup companies
• Matching funds up to $80K/yr
  – 90% of the funding with 2% royalty payback
  – 100% funding with 2% royalty and 2% equity
• Conducted jointly by faculty/graduate students and startup companies
Full-Service Incubator

- 21,500 NASF building for tech startups
- Outstanding on-campus technology and business environment
- 17 year track record
  - 45 companies graduated
- Up to four years of nurturing
- Populates the region with tech companies
- Provides internships to technical students
- Incubator companies can access VentureAccelerator services
Implementing an engineering approach to technical entrepreneurship education

- Systematic
- Comprehensive
- Experiential
- www.mtech.umd.edu