IP & Venture Creation at the University of Maryland

IP Workshop
Warsaw University of Technology
Oct 16, 2009

The IP Problem

- 20% of all patents in DC/MD/VA region are from universities
- Half a billion dollars in annual sponsored research at UMD
- BUT, only a few million dollars in annual licensing revenue

- **Why?**

The IP Problem & Solution

- **Problem:**
  University technology licensing offices are inherently limited
  - Not inventors of technology
  - Industry interested in licensing tangible technology, not interested a piece of paper from the USPTO
- **Solution:**
  Real and significant value results from starting companies around IP
  - Immersion example illustrates Mtech mission

Mtech's Ventures Programs

- Continuum of Programs
- Entrepreneur Office Hours (EOH)
- Faculty Venture Fairs
- VentureAccelerator (VA)
- TAP Incubator
- TERP Startup Lab (TERPS Lab)
- DNR $750k Venture Fund & SAIC $40k Venture Grant

Mtech's Continuum of Programs Spurs Innovation

Ideas
Concepts
Technologies

Entrepreneurship Education ⟵ ⟶ **Venture Creation**

Innovative Companies

- **Students**
- **Faculty**
- **Researchers**
- **External Entrepreneurs**
- **External Angels, VCs, Mentors, Service Providers**

Entrepreneurship Dorm/Incubator

Tech Startup Boot Camp

Seed Funds

Labs and Centers

Entrepreneurship Courses

Entrepreneur Office Hours

Product Development Grants

Business Plan Competition

Tech Transfer Committee

Venture Funds

Venture Accelerator

Faculty Venture Fairs

Business Incubator

U-Md. Technology Startup Boot Camp

- Intensive, one-day workshop and networking event about launching entrepreneurial ventures
  - Speakers & panels on marketing, business plans, intellectual property, raising capital, legal formation, etc.
- Targeted at both U-Md. faculty, students, and researchers as well as regional entrepreneurs and venture community
- Critical to establishing U-Md. as central player in venture ecosystem in Washington-Baltimore region
- Held each fall at Stamp Student Union
- Record 451 attendees in 2008

Boot Camp Tracks

- **Developing a Great Business Plan** – Don't have a concept yet? Or have an idea but not sure what to do next?
- **Biotech Ventures** – You've got encouraging early research findings for a therapeutic or a medical device. Now what?
- **High Tech Ventures** – You've got your $100 million business plan and prototype work is just underway. Now what?

	I	II	III	IV	V	VI
Business Plan	University Startups: Resources and Success Stories	Spurring Creativity & Innovation	Keynote: Brian Hinman, founder, Polycom and 2Wire	Market Research Tools and Techniques	Company Formation, Stock Plans, Operating & Employment Agreements	The Art of Elevator Pitches
Biotech		Bio Fundraising: Stimulus to VCs		Navigating the FDA Process	OR	Launching and Growing Bio Ventures
High Tech		Tech Fundraising: Stimulus to VCs		Marketing High Technology	Intellectual Property: Keeping Competition at Bay	Launching and Growing Tech Ventures

University of Maryland
$75K Business Plan Competition

- Annual competition with live investor presentations to venture capitalists and experienced entrepreneurs
- $75,000 in cash awards

Business Plan Competition Timeline

- **Friday, Nov. 13, 2008**
  Market Research Workshop
- **Friday, Dec 11**
  Dollars & Sense: Will Your Idea Make Money?
- **Friday, Feb 5**
  Writing the Executive Summary: How to Stand Out From the Crowd
- **Sunday, Mar 7**
  Executive Summaries Due
- **Sunday, Apr 18**
  Business Plans Due
- **Friday, Apr 23**
  Announcement of Finalists
- **Friday, May 7**
  Finals: Oral Presentations to Judges, Awards Ceremony

University of Maryland
$75K Business Plan Competition

- Since 2001, U-Md. BPC has been a springboard for the commercial success of many local technology companies
- Hinman CEOs teams consistently win top awards

AFFILIATE CLASSROOM

squarespace

AnthroTronix

Chesapeake PERL

ALERTUS
LOCALIZED EMERGENCY NOTIFICATION

RIOREY
THE DDOS SPECIALIST

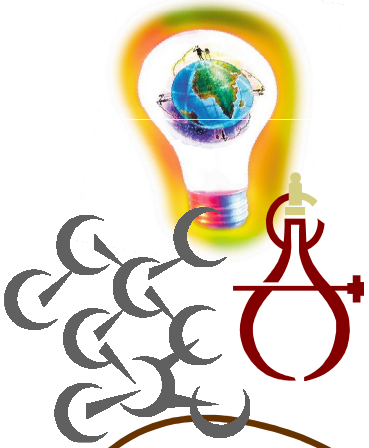
Entrepreneur Office Hours

- Monthly mentoring free sessions open to UMD faculty, staff, and students and regional entrepreneurs
- Help and advice with how to:
  - build and finance a startup company
  - develop and protect intellectual property
  - navigate the technology transfer process
  - refine your business strategy for rapid growth
  - tap into other entrepreneurial resources
- Second Tuesday of every month
- ~15-20 appointments/walk-ins each month
  - 50% from campus, 50% from region
  - Lead generation for various Mtech venture creation programs

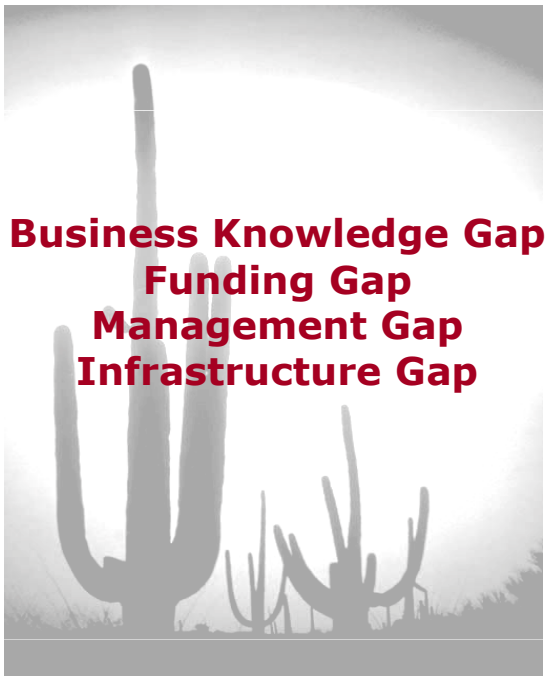
Faculty Venture Fairs

- Bi-annual showcase of the Top 10 most promising science and technology innovations and potential startups at UMD
- Faculty pitch inventions to panel of regional VCs and entrepreneurs
- All three winners have formed startup companies
- Fall: Life Sciences focus, Spring: IT focus

VentureAccelerator



Research & Innovations



Business Knowledge Gap
Funding Gap
Management Gap
Infrastructure Gap

Successful New Ventures

VentureAccelerator

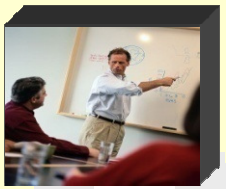
- Campus wide participation – faculty and students
- Selects technologies and launches companies
- Rigorous selection process
- Inventor participation can vary from active to consultative
- Brings company-building to the source of innovation
- UM receives equity and deferred fees
- Simplified, single contract acceptable to investors/partners

The VentureAccelerator Process

Scalable Early Stage Company

Execution

- CEO recruiting; team build-out
- Advisors and experts
- Angel & grant fundraising
- Product launch; alphas and betas
- Prepare to disengage



Planning

- Product planning
- Customer research
- Competitive analyses
- Organizational chart
- Significant hurdles & risks mitigated
- Financial model & funding requirements
- Completed business plan and presentation

Selection

- Unique IP
- Scalable market opportunity
- Feasible to assemble human and financial resources
- Extensive due diligence

Idea & Invention

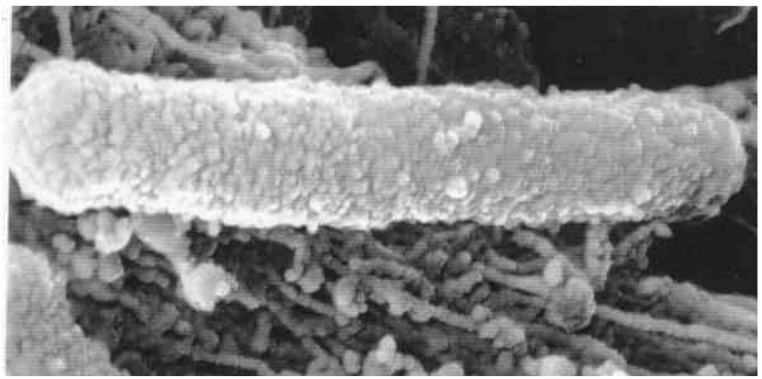
6-24 months

VentureAccelerator Portfolio

Company	Product Description	Milestones	Start Date	Graduation Date
Video Semantics	Video Search, Retrieval & Summary	N/A	8/09	Pending
Remedium TECHNOLOGIES	Modified Chitosan Hemostatic Agent	N/A	5/09	Pending
FLEXEL	Thin Film Rechargeable Batteries	~$200K Equity Raised	2/09	8/09
RESENSYS	Wireless Structural Health Monitoring Systems for Critical Infrastructure	~$400K Grants	8/08	7/09
Traffax Inc.	Vehicle Traffic Monitoring and Management Systems	~$250K Equity Raised	7/08	11/08
Zymetis	Cellulosic Ethanol and Bio-Refining	>$2M Equity Raised	10/06	12/07
lUrn where u come first!	Online Affiliate Marketing Training	~$10M '09 Sales	12/05	4/07
AMA LLC	Mobile Visual Solutions	9 Employees	9/05	10/06

Maryland Technology Enterprise Institute • A. James Clark School of Engineering • University of Maryland

VentureAccelerator Graduate Example
Zymetis



Steve Hutcheson, founder Zymetis, Professor CLS

- "The University of Maryland's incubator program and State grants were not only helpful, they were an essential part of our success."
- "To be honest, had I not been admitted into the VentureAccelerator program, I most likely would have dropped my dream of building a company."

Technology Advancement Program (TAP) Incubator

- State's first technology business incubator, est. 1985
- Staff of seasoned veterans of startups and VC firms who provide:
  - business advice and support
  - market intelligence
  - introductions
  - access to funding
  - other critical assistance that can accelerate the growth of your technology venture.

- Multitude of other benefits and services associated with being situated right on the campus of one of the nation's top research universities.

TAP Incubator: Program Details

- Houses between 8 and 12 University-affiliated companies as well as "*Spin-Ins*" from throughout the DC/Baltimore region
- Companies typically stay for 2-4 years
- 24,000 sq ft of furnished offices, flex lab space, common areas
- Selection process
  - Executive summary
  - Technical due diligence
  - Business/financial due diligence
  - Business review panel
- UM receives equity, fees, and deferred compensation

TAP Success Stories

MARTEK life enriched.™

IPO (NASDAQ: MATK)
$1+ billion market cap

DIGENE

Acquired for $1.6 billion by
QIAGEN (NASDAQ: QGEN)

NOVASCREEN Biosciences Corporation

Acquired for $30 million

HOOVERS™ A D&B COMPANY

Powerize.com acquired for
$17 million by Hoovers

MARYLAND INCUBATOR COMPANY OF THE YEAR 2008

3 winning TAP companies
2008 Maryland ICOY Awards

TAP Spotlight: TRX Systems

TRX Facts

- Winner of 2008 $500,000 Global Security Challenge, world's largest security business plan competition
- Winner of 2008 Maryland Incubator Company of the Year – Homeland Security
- 14 of 17 employees are U-Md. Alumni, mostly Clark
- Awarded $2M in grants

MARYLAND INCUBATOR COMPANY OF THE YEAR 2008

A. JAMES CLARK SCHOOL OF ENGINEERING

Gil Blankenship, founder TRX Systems, Professor & Associate Chair ECE

- "During the past two years, [TAP] has worked closely with TRX, advising us on how the company should grow, what direction it should take, and what it should do. They have put us in touch with investors and given us sound advice on how to run a startup."
- "TAP helped us turn our idea into a legitimate business."

VentureAccelerator vs. TAP: Key Differences

	VA	TAP
Eligibility	Current UMD-affiliation required	UMD and regional entrepreneurs
Mtech role	Active role: part-time, interim CEO	Advisory role: mentor, sounding board
Location	Anywhere	TAP building
Term	6-18 months	24-48 months
Terms	1-3% equity/quarter Deferred service fees	1% equity/year Below market office/lab rates

TERP Startup Lab

Tech Entrepreneur Research & Prototyping Startup Lab

- Who: UMD entrepreneurs not ready for VA or TAP
  - Biz Plan Competition, Faculty Venture Fair winners, Hinman CEOs and Hillman students, and others
- What: A new technology incubation program
  - A place where they can quickly develop their technology prototypes and get some help to start their companies
- Why:
  - Strengthens entrepreneurial community and shared networking/learning among TAP, VA, and TERP Startup Lab participants
  - Provides additional opportunities for UMD students to gain internships and employment opportunities at UMD startups

TERP Startup Lab Program Details

- Shared, furnished 700 sq ft space in TAP Building with other TERPS Lab participants
- Mailbox, company listing, shared conference rooms (priority given to TAP and VA companies)
- Free access to basic hardware and software development tools, including Microsoft BizSpark, a complete suite of all Microsoft development tools and productivity software
- Roughly 6-9 companies, 1-3 people per company
  - $50/month per workspace for U-Md. faculty or student
- Additional, at-cost charges for copier, phone, internet
- Limited access to TAP business advisory staff through appointments at monthly Entrepreneur Office Hours

Mtech/Maryland Department of Natural Resources (DNR) $750k Venture Fund

- Seed capital for Maryland-based startups with innovative technology addressing Chesapeake Bay Non-point Source (NPS) pollution *(water pollution conveyed to waterways through natural processes, such as rainfall, storm runoff, or groundwater seepage)*
- Funded by DNR, awarded by Mtech
- $250k/year over 3 years evergreen venture capital fund
  - $750k minimum (DNR aims to increase annual contribution to $500k)
  - 7.5% of fund paid upfront to Mtech to defray expenses
  - 20% of upside on investments to Mtech
- First 2 potential investments approved by DNR, both U-Md./Mtech companies
  - Traffax: Vehicle Traffic Monitoring, in VentureAccelerator, $50K
  - Zymetis: Enzymes for Cellulosic Ethanol, in TAP, $100K

Mtech/SAIC $50k Venture Grant

- Seed capital for VentureAccelerator (VA) companies with innovative technology addressing:
  - alternative energy
  - threat detection
  - other areas of interests to SAIC
- Funded by SAIC, awarded by Mtech
- $50K grant
  - Potentially renewable on an annual basis
- Candidate pool narrowed down to 2 U-Md. companies
  - Flexel: flexible batteries, applying to VA
  - Resensys: structural monitoring of bridges & airframes, in VA

Ventures Track Record

- Over 80 graduates from TAP
  - 65% maintain material operations 5 years later
  - 80% remain in Maryland
- Close to $300 million in VC funding
- ~ 2,000 jobs; mostly technology-oriented
- 2 IPOs, each over $1 billion
- Multiple M&A's

Entrepreneurship Education Reach in 2008

Course	Enrollment
Discovering New Ventures	95
Entrepreneurial Opportunity Analysis and Decision-Making in 21st Century Technology Ventures	60
Fundamentals of Technology Start-Up Ventures	130
Advanced Engineering Startup Ventures	25
Special Topics in Entrepreneurship	250
Petroleum Institute	24
Certificate in Innovation Management Program	244
Total	**828**

Program	Participants
2008 UM Technology Startup Boot Camp	451
2008 UM $50K Business Plan Competition	125
Faculty Venture Fairs	60
Hillman Entrepreneurs	76
Hinman CEOs	90
Total	**802**

Funding Acquired by TAP Companies (1987-2008)

Venture Investments	$283 million
Federal Awards	$74.4 million
Public Stock Offerings	$368.3 million
MIPS Project Awards	$4.6 million
State Awards	$3.1 million
Total	**$733.4 million**

- TAP portfolio companies have raised $22 million in financing since 2004.
- Sales of TAP companies total $1.67 billion; including $1.6 billion from the acquisition of Digene Corp. by Qiagen NV, as well as sales of other TAP graduates combined for $67.1 million
- **The total combined impact for TAP is $2.4 billion.**

Companies Served by Mtech Programs in 2008

MIPS	40	companies engaged in research projects with university faculty to develop commercial products through two rounds of projects in 2008
MTES	145	companies assisted (2008)
BREP	48	companies and laboratories served through fermentations, training, tours, and on-site assistance
Entrepreneur Office Hours	150	current or aspiring entrepreneurs served by office hours (2008)
TAP and VA	13	companies in the incubator and VentureAccelerator programs
Total	**396**	**companies served by Mtech programs in 2008**

Performance of Products Benefitting from MIPS

Company	MIPS-Related Product	Revenues/Sales
MedImmune	Synagis® drug to treat a serious respiratory disease in infants	$7.8 billion
Martek Biosciences	DHA and ARA supplements to infant formula and other nutritional products	$1.7 billion
Hughes Network Systems	HughesNet, the leading Internet over satellite product for consumers	$7.4 billion
Total		**$16.9 billion**

Mtech Cumulative, Quantitative Impact

TAP	$2.4 billion	venture investment; federal, state, and MIPS awards; public stock offerings; and private sales of TAP companies (1984-2007)
Hinman CEOs	$1.5 million	combined revenue of companies operated by Hinman CEOs (2008)
MIPS	$159.5 million	total combined MIPS and company funding for product-oriented research projects at USM institutions (1987-2008)
MIPS	$16.9 billion	combined revenues/sales of products MIPS research contributed to (1987-2008)
MTES	$291.8 million	increased and retained sales, costs saved, investments saved, unnecessary investments avoided, increased investment, and plants or equipment by Maryland manufacturers (2000-2008)
ASPIRE	$468.6 thousand	funding for joint research projects between faculty and undergraduate students (1998-present)
Total	**$19.7 billion**	

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