

The Innovator's Journey

Tuesday, May 7, 2024

bu.edu/research/events



Agenda

- Welcome Remarks
- Presentations
 - Paul Bierden
 - David Freedman
 - Ed Damiano
 - Anand Krishnamurthy
- Q&A
- Innovator of the Year Award Presentation
- Closing Remarks

The Innovator's Journey

*Lightning talks from BU innovators and presentation of the
2023 award for BU Innovator of the Year*

Paul Bierden

President/CEO



About Me

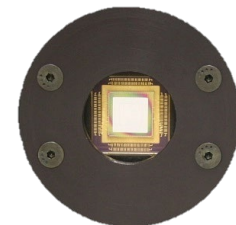
- BSME 1992, MSME 1994



Sacrifices You Make When Starting Business (hair)



- Founded in May 1999
- Started with NASA STTR with BU
- Develop and manufacture advanced adaptive optics and deformable mirror technologies



Top 3 challenges

1. What you think is important isn't necessarily what your customer does
2. Time lines – No “No Cost Extensions”
3. Hire the right people, not people like me



Helpful BU Resources

- Grant/Contract Opportunities
 - First two major contracts (NASA STTR, DARPA) were joint with BU
 - Gave credibility to a small company
- Facilities
 - Access to labs/tooling/equipment (from those contracts)

PEOPLE



Steven Cornelissen
VP Engineering
BU MS Mech Eng 2002



Michael Feinberg
VP Marketing and Sales
BU MS Mech Eng 1999



Jason Stewart
Senior Research Engineer
BU PhD Electrical Eng 2008

Dozen interns and co-ops

Valuable Resources for Early Stage



Key Advice



From Lab to Acquisition: An Entrepreneur's Journey at BU

David Freedman

BU Alumni and Founder of NanoView Biosciences and Everest Biolabs

2010 PhD Electrical and Computer Engineering, Boston University

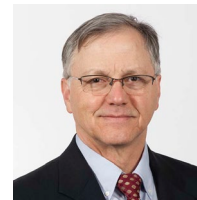
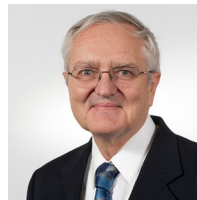


David Scott Freedman

2005

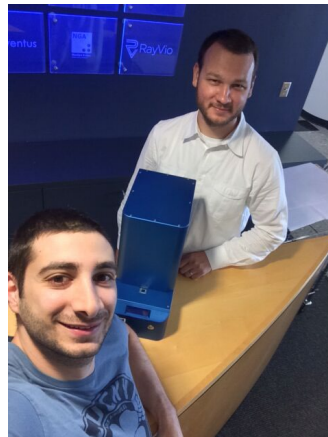
2015

2022



Founder,
CEO/COO,
President

2014-2022

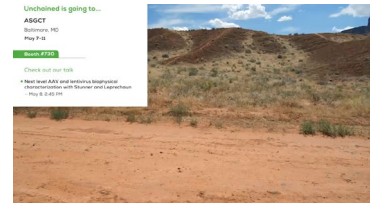


- Raised over \$20M+ (Series A, Series B, Series B+)
- Launched 4 instruments (R100, R200, CW100, Leprechaun) and 8 kits
- Placed 150+ instruments
- Hired and managed 40+ team
- Acquired by Unchained Labs in 2022



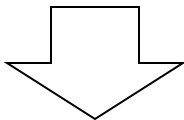
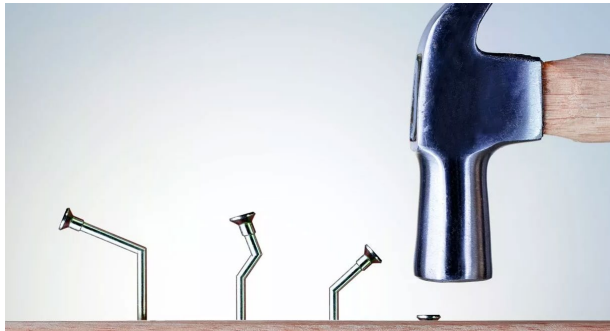
UNCHAINED
LABS

Unchained is going to...
ASCT
Baltimore, MD
May 14th
\$20M (\$10M)
Check out our 10th
+ Meet local ASCT and industry leaders!
+ Networking with Unchained Labs' executives
+ May 14 @ 2:00 PM



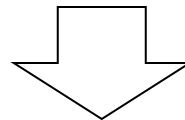
Early challenges for academic startups

Product/Market Fit



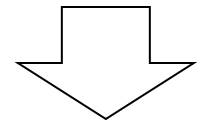
- Viral Diagnostics
- Protein Detection
- Exosome Dx/Characterization

Team and Communication



- Culture
- Hiring (Good/Bad)

Money



- Contracts
- Grants
- Venture and Angels

Photonics Center anchors BU ENG innovation

Photonics Center



NEIDL / BU Med School



SMG – Business School



**SIF – Science
Instrumentation Facility**



Photonics Center anchors BU ENG innovation

Photonics Center



NEIDL / BU Med School



SMG – Business School



**SIF – Science
Instrumentation Facility**



Tech Transfer



Entrepreneur Edu.



Grants and Collaboration



OPF



SIF



Photonics Center/BIC



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Tech Transfer



Entrepreneur Edu.



Grants and Collaboration



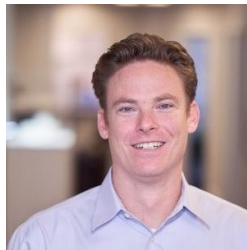
Photonics Center/BIC



Mentor



Advisor



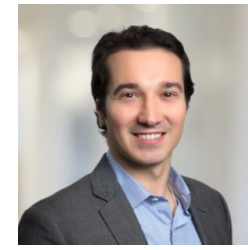
CEO



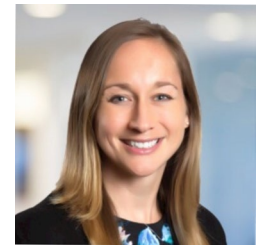
Director



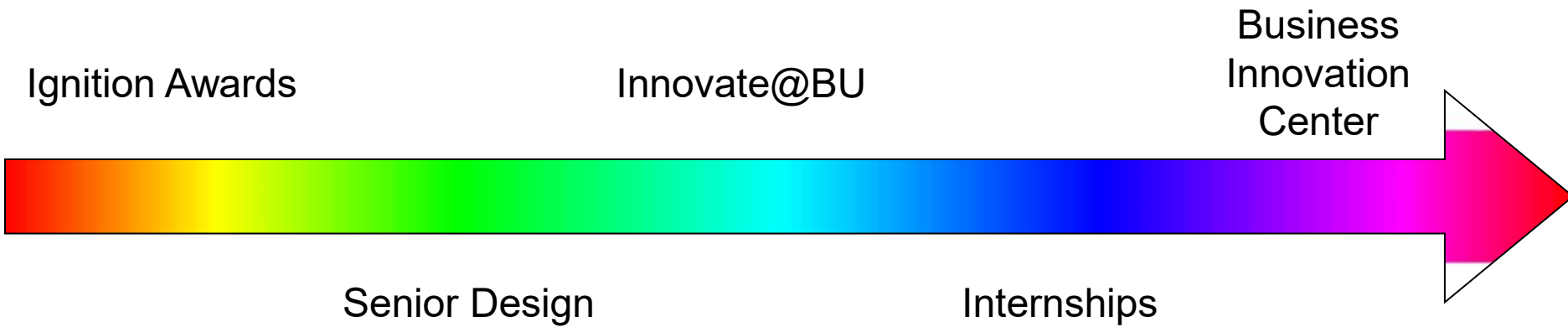
IP Attorney



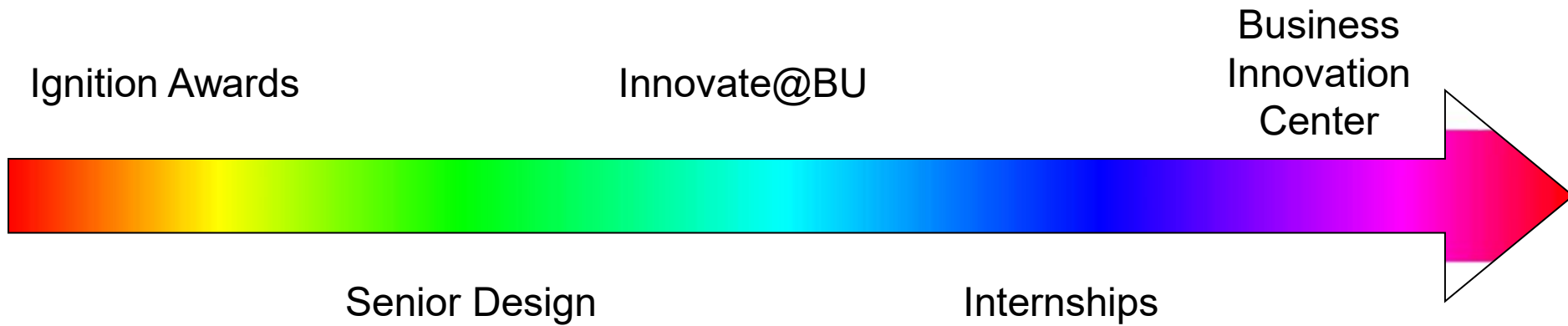
IP Attorney



BU has a spectrum of innovation resources

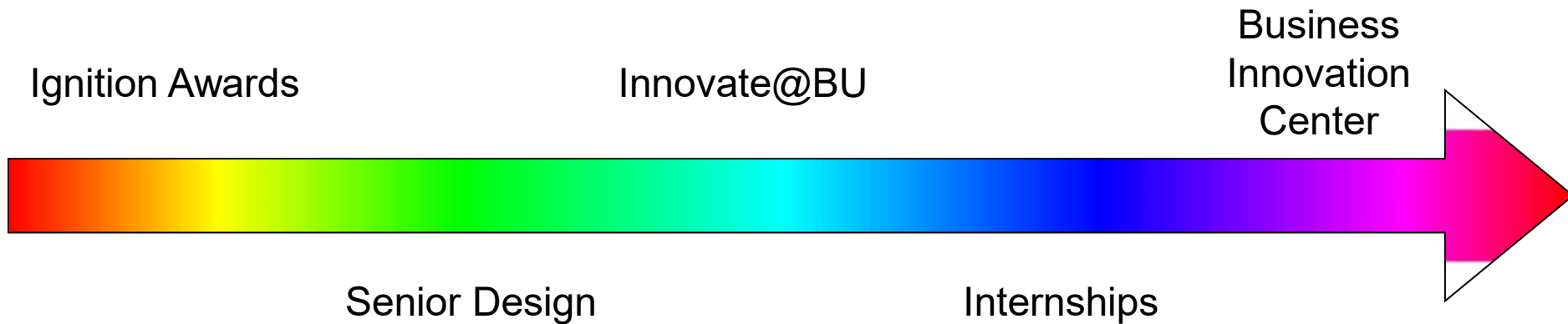


BU has a spectrum of innovation resources



What else can BU do to support innovation?

BU has a spectrum of innovation resources

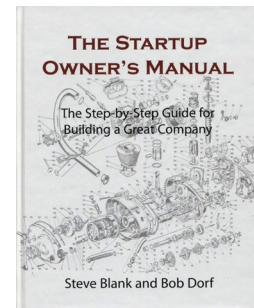
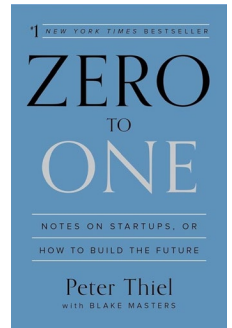
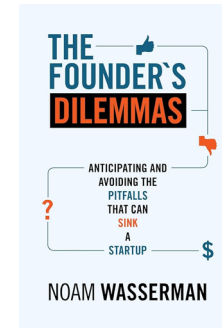


What else can BU do to support innovation?

- Guide / Mentor / Entrepreneur in Residence (EIR)
- Coworking space, easily accessible for graduates and alumni
- 10 year strategic vision with additional resources

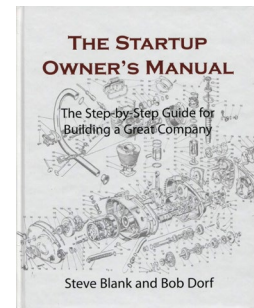
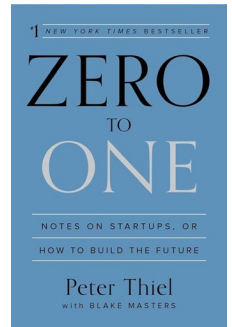
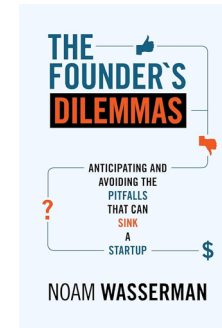
One piece of advice

- The golden rule
- Time is money
- Patience, it's going to take some time



One piece of advice

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CORPSTM
NSF Innovation Corps

Tom Bifano – Innovator of the Year



*In Boston town, where minds ignite,
Stands a beacon of innovation, burning bright.
At BU's Photonics Center, they say,
Lives a leader blazing trails each day.*

*A visionary with a boundless spark,
Guiding discoveries through the dark.
From lasers to fibers, ideas take flight,
Under this leader's visionary light.*

*At BU's Photonics, a leader thrives,
Pushing boundaries to new highs.
In the heart of science, their name resounds,
A pioneer where brilliance abounds.*



Boston University Innovator of the Year Event

May 7, 2024

Ed Damiano, PhD

Founder and Executive Chairman, Beta Bionics, Inc.

Department of Biomedical Engineering, Boston University

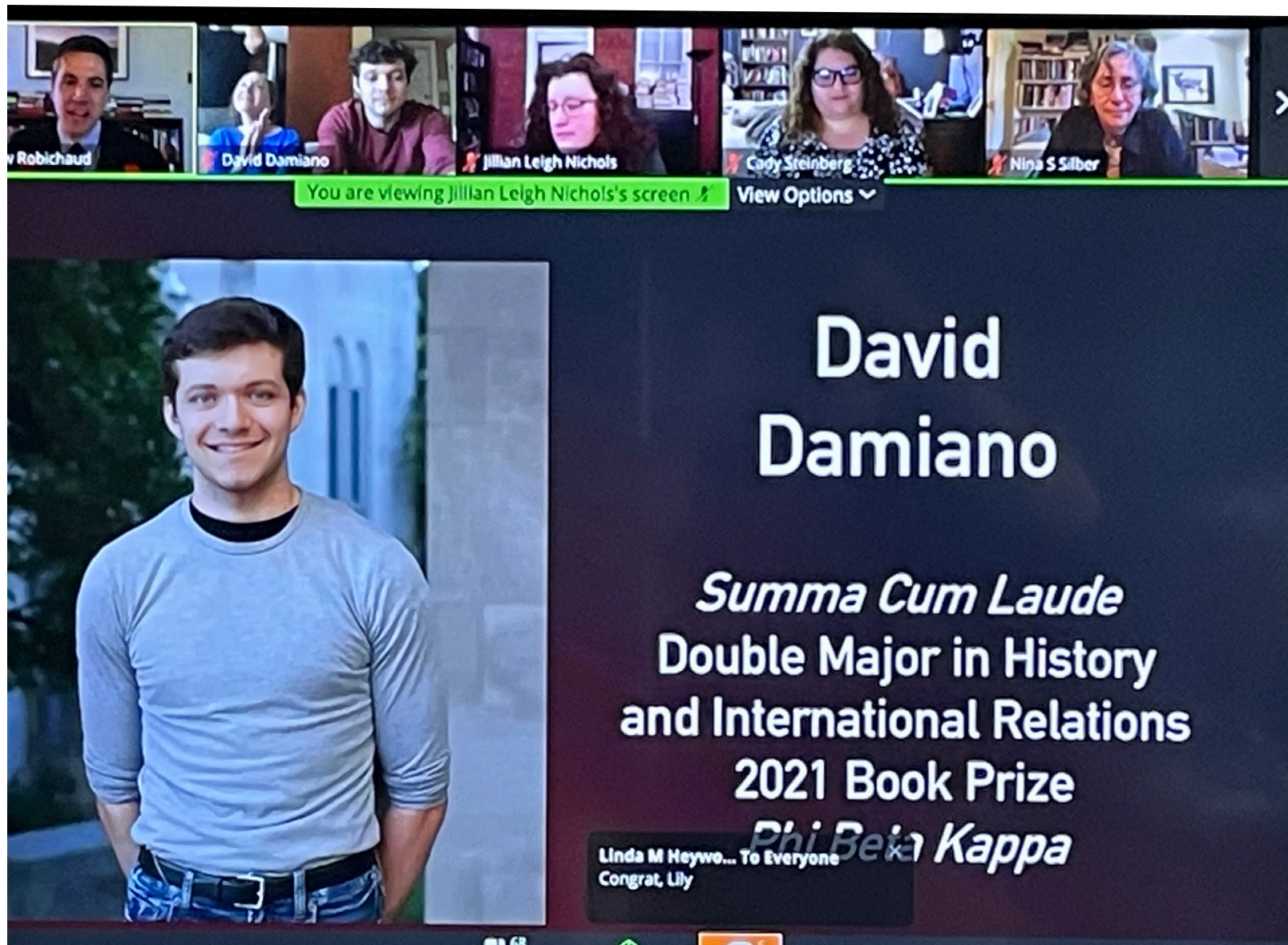


Pending 510(k) clearance. Not available for sale.

May 13, 2000: David is diagnosed with T1D at 11 months old



May 14, 2021: ... 21 Years and 1 Day Later — A COVID graduation



A screenshot of a Zoom meeting interface. At the top, a row of six video thumbnails shows participants: Robichaud, David Damiano, Jillian Leigh Nichols, Cody Steinberg, and Nina S Silber. Below the thumbnails, a green banner reads "You are viewing Jillian Leigh Nichols's screen" with a "View Options" dropdown. The main screen displays a large photo of David Damiano on the left and a list of his achievements on the right. A chat window at the bottom right shows a message from Linda M Heywo...

Robichaud

David Damiano

Jillian Leigh Nichols

Cody Steinberg

Nina S Silber

You are viewing Jillian Leigh Nichols's screen

View Options

David Damiano

Summa Cum Laude

Double Major in History and International Relations

2021 Book Prize

Phi Beta Kappa

Linda M Heywo... To Everyone
Congrat, Lily

The iLet Bionic Pancreas



Features¹

Requires only entering body-weight to initialize therapy

Determines 100% of all therapeutic insulin dosing

Does not require carbohydrate counting²

All correction insulin doses determined autonomously

All prandial insulin doses determined autonomously

Does not require programming of insulin-to-carbohydrate ratios, correction factors, or basal rates

Autonomously adapts to user's changing insulin needs over time

1. Beta Bionics, iLet Bionic Pancreas User Guide

2. User must be carb aware

Critical BU Resources

- Office of Technology Development
- Office of Sponsored Programs and BME Grants Administrator
- Support from Academic Administration (including President, Provost, Vice Provost for Research, Dean, and Department Chair)

Resource Limitations

- Networks into the business world from academia were limited
- Education for founders on typical market terms for start-ups vis-à-vis corporate structure, governance, stock classes, stock buy-back provisions, option grant pool, etc.

Top Challenges and Lessons Learned in Transitioning from Research Project to Commercialization

- Transitioning from research funding to strategic investors to institutional investors
- Choosing the right people: *To trust or not to trust, that is the question*
- Culture clash between the academic/engineering world and the business/investor world

The Innovator's Journey

Anand Krishnamurthy

Co-Founder, CEO and President, Affirmed Networks
ENG '92 '96



My career (so far)

- 1990-1996: MS/Ph.D. in multimedia communications from ECE (Prof. Tom Little)
 - Thesis: Scalable Video Delivery and Pricing Mechanisms
- 1996-2001: Cascade Communications/Ascend Communications/Lucent Technologies
 - Software Engineer -> Director of Software
- 2001-2010: Airvana
 - Director of Software ->. VP Of Engineering
- 2010-2020: Affirmed Networks
 - Founder/VP Of Engineering -> CEO/President -> Corporate VP @ Microsoft
- 2020-Present: Angel Investing/Mentoring, BOD WBUR, DLAB ECE

Challenges Transitioning From Research to Commercialization

- Pitch Tends to focus on the research, giving the impression of “a solution looking for a problem” -> makes it harder to get funding
- Tradeoffs, constraints, goals and mindset in the commercial world are very different from the academic world
- The path from an idea to monetization of the idea requires many non-technical elements like raising money, business development, go-to-market strategy, hiring the right people, building a cohesive team, convincing customers to take a chance, competitive strategy etc.

What BU resources can be leveraged?

- Filing patents
- IP licensing
- Support for grants
- Seed funding & starter space
- Networking, through industry engagement and alumni
- Business development help

What university resources can a startup use?

- Sponsored Project Opportunities
- Internship Program
- Easier Engagement – especially wrt IPR and overhead
- Access to relevant research including professors, students, equipment and space
- Anything that can speed up development (e.g. an AI based platform)

One Key Learning

Embrace risk



Thank you!

