

SHOULD ANESTHESIOLOGY INNOVATORS
WORK UNDER THE UNIVERSITY UMBRELLA
OR
START THEIR OWN COMPANY?
LOGISTICS FOR TAKING THE RIGHT
APPROACH

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CASE STUDY: ANNOVATION
BIOPHARMA

- Startup Company I founded in late 2009
- Singular focus: Developing new IV sedative-hypnotic agents
- Based on technology developed in my laboratory and funded by NIH grants (P01 and R01)
- Subsequent commercial funding provided by institutional and external VCs, angel investors, and a strategic partner
- Acquired by the strategic investor in early 2015

ANNOVATION

WHY FOUND A STARTUP
COMPANY?

- Existing companies wont license it
 - Too risky
 - Unproven market
 - Need to "derisk" the project
- Maintain control of the development process
- Financial upside
- Great learning experience
- Meet new people
- It's really fun!

WHY NOT?

- Time commitment
- Potential financial commitment
- Employ staff (e.g. CEO, project manager, consultants)
- Negotiate for a license agreement with the institution (the existing company will do that)
- Hire attorneys to incorporate the company and distribute company stock
- Raise capital for technology development
- High risk as the large majority of startups fail

PARTNERS HEALTHCARE
ANNUAL PIPELINE

Exit = An acquisition or IPO

WHY DO BIOMEDICAL
TECHNOLOGY STARTUPS
FAIL?

- Weak team, poor leadership
- Inability to raise capital ("failure to launch")
- Poor use of capital
- No exit strategy
- Technology failure

STARTUP 101: HIRING A CEO

- This was the first step because I had a day job and no business experience
- Nick Barker Ph.D.: serial entrepreneur who had previously run a company based on MGH technology
- No upfront salary (future salary contingent on raising capital)
- Stock in the company that would vest over 4 years

STARTUP 101: NEGOTIATING THE LICENSE AGREEMENT WITH MGH

- Although I invented the technology, MGH owns it
- Annovation BioPharma needed to sign a license agreement with MGH to develop and commercialize the technology
- MGH wanted
 - Upfront cash payment
 - Reimbursement for patent costs
 - Equity in the startup
 - Milestone and royalty payments
- Compromise: 1 year option at no cost

STARTUP 101: HIRING A LAW FIRM

- Cooley LLP
 - Headquartered in Palo Alto
 - 12 offices (including Boston)
 - 900 attorneys
 - Annual revenue ~ \$1B (but not in 2009!!)
- Agreed to work on a contingency basis



STARTUP 101: RAISING CAPITAL

- **Angel Investors**
 - Individuals or groups of individuals
 - Invest their own money
 - Relatively small investments (typically < \$100k/angel)
- **Venture Capital Firms**
 - Companies
 - Raise funds from investors
 - Earn a management fee (plus a share of profits)
 - Larger investments (\$1M -> 10M)
- **Strategic Partners**
 - Mid-size to large companies
 - Invest with company funds
 - Potential buyer of the start-up



STARTUP 101: RAISING CAPITAL

- **Seed Round: \$750,000**
- **Angel Investors**
 - 9 Angel Investors (Mass Medical Angels)
 - \$10 - 35k in seed round
- **Venture Capital Firms**
 - Partners Innovation Fund
 - Established in 2008 with \$35M from MGH and BWH
 - Currently funded with
 - \$100M from MGH and BWH
 - \$65M from pharma and other strategic investors
 - Focus: Funding startups based on Partners Healthcare technology
 - Atlas Venture
 - Boston-based VC firm with a focus on biomedical technology

STARTUP 101: RAISING CAPITAL

- UCLA VC fund (UCLA)
- NYU Innovation Venture Fund (NYU)
- BVR -BR Venture Fund (Cornell Univ)
- Simon School Venture Capital Fund (Univ of Rochester)
- Triton Technology Fund (UC, San Diego)
- The Garber Venture Capital Center (Penn State Univ)
- CSU Ventures (Colorado State Univ)
- OSU Venture Fund (Oregon State Univ)
- Innovate Indiana Fund (University of Indiana)
- The Engine (MIT)
- UVA Seed Fund (Univ of VA)

UNIVERSITY VENTURE CAPITAL FUNDS

- Invest in startups based on university technologies
- Provide guidance wrt company formation
- Connect with external venture capital firms
- Demonstrate institutional support for the startup
- Interface with the licensing group
- Answer questions and provide "reality checks" as the process advances

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STARTUP 101: RAISING CAPITAL

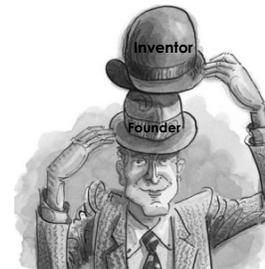
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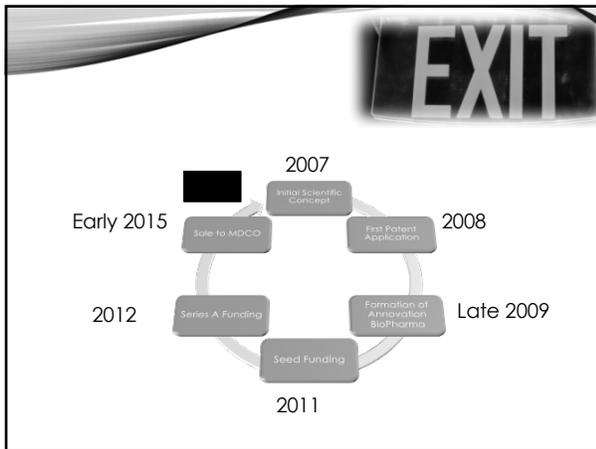
STARTUP 101: RAISING CAPITAL

- **Series A Round: \$10,000,000**
- **Angel Investors**
 - 9 Angel Investors
- **Venture Capital Firms**
 - Partners Innovation Fund
 - Atlas Venture
- **Strategic Partner:**
 - The Medicines Company
 - Option to acquire Annovation BioPharma
 - Upfront payment
 - Milestone payments
 - Royalties

TWO HATS

- Inventor and Company Founder
- Stockholder
- Potential conflicts of interest
 - Partners Healthcare
 - Harvard
 - NIH
- Consultant
- Disclosed my conflicts





WHAT DO I TELL PEOPLE?

- You should start a company (under the University umbrella)!
 - Learn a lot
 - Meet new people
 - Have fun
 - Have more control of the development process
 - Opportunity to make more money
 - Even if you fail, it'll make a good story
- There are a few negatives
 - You'll spend more time (hiring staff, raising capital)
 - Conflicts of interest