

**THE WHARTON SCHOOL**  
**University of Pennsylvania**  
**HEALTHCARE ENTREPRENEURSHIP**  
**HCMG 867**  
**SPRING 2018**  
**Tuesdays 4:30-6:30 PM – JMHH Room 240**  
**Syllabus Date: 1/12/2018**

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**OVERVIEW**

The goal of the course is to give students the hands-on experience of establishing and operating an early-stage healthcare or life sciences business by, among other things, working as part of a mentored group to craft and defend a business plan based on an actual technology or service in the space (defined as therapeutics, diagnostics, medical devices, or digital health services). Students, ideally working in groups of 4-6, will select a technology and present a proposed project description to the course instructors prior to the second class meeting.

During the course of the semester, students will be expected to prepare certain group-specific deliverables, craft a business plan and pitch presentation, and read “Magic Box Paradigm: A Framework for Startup Acquisitions” by Ezra Roizen (available through Amazon). Class discussions, led by course instructors as well as individuals drawn from entrepreneurs, operators, customers, and investors in healthcare, will present relevant insights impacting strategic, execution, and financing risks for early stage healthcare ventures.

Non-Wharton Penn students or post-docs are welcome to take the class for credit or audit with permission from the instructors. If for credit, then students will need to make arrangements with their primary departments. Other Penn affiliates (e.g., MD, DVM, PhD candidates and faculty) or those not affiliated with Penn may also audit the course with permission from the instructors, and will be expected to fulfill all of the responsibilities of students taking the course for credit.

**BUSINESS PLAN AND PRESENTATION**

The primary deliverables are a pitch to a panel of investors (to include a PowerPoint presentation) and a written business plan highlighting the essential features of the business, market, competition, operating plan and financial projections, etc. and a separate executive Summary of the business plan. **The Business Plan and the Investor PowerPoint presentation are due on April 27, 2017.** Teams will be required to provide certain deliverables with respect to their interim progress in the form of written work or presentations.

### **PROJECT SELECTION – PRELIMINARY WORK**

Teams are required to prepare and hand in a Problem and Unmet Need Overview and Product Description, which is due by the third class (January 31). Course instructors, TAs, staff and mentors will assist student in selecting their projects. As in past years, some students will bring projects to class and will be looking for others to join a group. Otherwise, where needed, through relationships with Penn, Penn Medicine and other technology transfer offices, as well as through other support organizations and start-up and early stage companies.

### **TEAMS**

Teams will ideally include 4-6 students at least one of who will have a relevant technical background. With the prior approval of the instructors, non-Wharton technical members of the team will be permitted to participate in the class. The course instructors will assist each team in identifying an appropriate mentor to provide focus and to help identify appropriate resources within the life science community.

### **LECTURES AND “LUNCH & LEARNS”**

Lectures will be held once each week and will deal with specific topics covered in a typical business plan or of significance to a life sciences or digital health venture. Lectures will include presentations by the instructors and experts on specific topics, with discussion facilitated by the instructors. **Since we are inviting experts from the outside, attendance at the lectures will be mandatory and monitored.**

In addition, we are planning to provide background on some core areas such as intellectual property, compliance, etc. through “lunch and learn” programs that will be recorded and then made available to students through Canvas for subsequent viewing. To be respectful to the speakers, we are asking that students attend at least one of these lunch and learns.

### **GRADING**

Students will be evaluated on a combination of the final business plan, investor presentation and class participation, including the interim progress updates on the business plan in the following proportion: Business plan: 40%; Investor presentation: 30%; Class and team participation and interim deliverables: 30%. *Notes: (1) Students will also evaluate their own team members, with input factored into the participation grade. (2) The interim deliverables will count toward the participation grade and will be reviewed and returned with comments, but will not be evaluated on a graded scale.* Grading on a pass-fail basis is discouraged and will only be permitted with the consent of the professors.

### **ENROLLMENT:**

Enrollment will be by application.

### **Class Schedule**

#### **Class 1– January 16, 2018– Industry Interrupted: Why Healthcare is Ripe for Disruption**

Based on the ~\$3 trillion that the U.S. spends on health care, the U.S. health care system would rank as the 6 largest economy in the world. Uncontrolled growth is not sustainable, and neither spending nor cost-cutting will help us find our way out of this predicament. We need to find

practical, as well as innovative, solutions that help achieve the Triple Aim – increase access, improve quality and lower costs. The entrepreneur’s dilemma is to develop those innovative products and services, in a highly regulated industry, within a rapidly shifting environment for customers. This lecture will serve as an overview of the perspectives and needs of one customer today and how these may change in the future

A portion of this class will also be dedicated to a course introduction and to assisting students select group projects.

**Speaker: Helen Leis, Partner, Health & Life Sciences, Oliver Wyman**

**Class 2 – January 23, 2018 – Introduction to Healthcare Entrepreneurship**

“The health care industry continues to be one of the biggest opportunities for entrepreneurs and investors,” said Bob Kocher, a doctor and partner at Venrock in Fortune Magazine (Feb 19, 2015). Health care entrepreneurs have needs that are different to those of other entrepreneurs; their challenges are unique. There’s regulation, entrenched stakeholders, and human lives at stake. The lead times are longer, change is harder. Entrepreneurs have to play within the system, and that means there are a lot more challenges when it comes to succeeding as a startup in the health care space.

**Speaker: Eric Heil**

***Assignment (Deliverable Due Class 3): Problem and Unmet Need Overview and Product Description & Schedule Group Meeting with Professor(s)***

**Read: Chapter 1 – The Popsicle and the magic box**

**Class 3 – January 30, 2018 – Start Up Space – Product Design - MVP**

“How can we walk away from requirements that we know to be true to pursue something that we think will help?” It turns out that is exactly what product strategy is all about—figuring out the right product is the innovator’s job, not the customer’s job. The customer only knows what he/she thinks they want based on their experience with the current product. The innovator can take into account everything that’s possible, but often must go against what she knows to be true. As a result, innovation requires a combination of knowledge, skill, and courage. Sometimes only the founder has the courage to ignore the data. In this lecture, we will discuss various product design concepts, development methodologies for various types of healthcare solutions, and scaling challenges. In addition, the lecture will identify and address the risks and issues that often arise in this setting and will discuss strategies for mitigating the risks and overcoming the obstacles.

**Speaker: Roy Rosin, Chief Innovation Officer, Penn Medicine**

***Assignment (Deliverable Due Class 3): Summary write up of learnings from at least 5 qualitative primary research meetings/calls***

**READ: Chapter 2 – It’s how you enter the room**

**Class 4 – February 6, 2018 – Business Model Innovation and Data Strategy**

According to the Boston Consulting Group, in the past 50 years, the average business model lifespan has fallen from about 15 years to less than 5. Business model innovation is necessary to respond to a changing world. Entrepreneurs must focus on the business model early and designing a business model requires an approach that allows them to assess if and how a value proposition can be successfully scaled up to a profitable business. An important current theme in

business model innovation is the collection, analysis and utilization of data. In the lecture, we'll explore how this trend is influencing healthcare.

**Speakers:** Scott Snyder, CTO, Safeguard Scientifics and Jason Bhan, Chief Medical Officer, Prognos

**READ:** Chapter 3 -Magic Box Paradigm

**Assignment (Deliverable Due Class 4):** Product/Solution description

### **Class 5 – February 13, 2018 – Team Building**

A team of Wharton students, engineers and scientists are a great start in the development of an early stage company, but investors may not be prepared to fund lightly experienced student entrepreneurs. Creating and nurturing the right culture, building the management team, developing a board, and evolving an HR strategy are critical for a focused life science/health services start-up.

**Speakers:** Sundeep Bhan, CEO, Prognos

**READ:** Chapter 4 -Maximizing Value

### **LUNCH & LEARN #1 – February XX, 2017 – Regulatory Compliance**

Similar to data privacy and security, other significant federal and state regulations can influence the business/revenue model of the venture, as well as its operation. Likewise, these laws, rules and regulations are applicable to (and can impose risk on) the entrepreneur, the venture and the exit. In this lecture, we will provide an overview of the regulatory issues that arise in connection with payer/pricing, reimbursement, and marketing. Regulatory schemes discussed will include self-referral (Stark), anti-kickback and fraud & abuse.

**Speaker:** TBD

### **Class 6 – February 20, 2018 – Storytelling**

Your entrepreneurial story is key to unlocking the support of your customers while fueling your own internal purpose and passion. Storytelling in business works. It enhances memory, enthusiasm and commitment in listeners. In this lecture, we'll break down the various ways to use stories in your pitch and explore where you get the stories from and when to use them.

**Speakers:** Various healthcare startup founders

**Read:** Chapter 5 – Narrative

### **Class 7 – February 27, 2018 – Marketing**

Should start-ups care about marketing? When should a start-up start thinking about a marketing strategy? Entrepreneurships often struggle to find the balance between marketing and execution or delivery. The goal of this lecture will be to highlight the various ways start-ups leverage marketing to drive awareness, leads, and growth.

**Speakers:** Eric Stone, CEO, Velano Vascular

**Read: Chapter 6 – Thought leadership**

**Class 8 – March 6, 2018 – SPRING BREAK. NO CLASS**

**Read: Chapter 7 – The Ground Game**

**Class 9 – March 13, 2018 – Pitch Day**

Review interim plans including elevator pitches and discussion. Bring in entrepreneurs to discuss. Consider having a few entrepreneurs come in and pitch their companies

**Read: Chapter 8 - What are these guys really after?**

**Class 10 – March 20, 2018 – The Tough Stuff, When Things Go Wrong, & Execution Risks**

“It’s the moments where you feel most like hiding or dying that you can make the biggest difference as a CEO.” When you are building a company, you must believe there is an answer and you cannot pay attention to your odds of finding it. You just have to find it. It matters not whether your chances are nine in ten or one in a thousand; your task is the same. In this lecture, we will go behind the closed doors with CEO(s) and discuss the tough times along their journey, what happened, and what worked to get through them.

**Speakers: Richard Perlman**

**Read: Chapter 9 – Coming to terms**

**LUNCH & LEARN #2 – March XX , 2017 – Data Privacy and Security**

Government laws, rules and regulations can have significant influence on the business/revenue model of the venture, as well as its operation. These laws, rules and regulations are applicable to (and can impose risk on) the entrepreneur, as well as the venture. In this lecture, we will provide an overview of the fast-moving regulatory landscape of data privacy and data security.(HIPAA, data privacy, meaningful use, payer/pricing, reimbursement, and marketing), along with risk mitigation strategies.

**Speaker: TBD**

**Class 11 – March 27, 2018 – Digital Health**

Eric Topol, cardiologist and author of The Creative Destruction of Medicine, defines as digital technologies, social networking, mobile connectivity and bandwidth, increasing computing power and the data universe converging with wireless sensors, genomics, imaging, and health information systems to creatively destroy medicine as we know it. Digital health seed fund [Rock Health](#) further explains that digital health encompasses both Health 2.0 (B2C) and Digital health (B2B). This lecture will help further define digital health and discuss the issues in launching digital health tools into the healthcare ecosystem.

**Speakers: Paris Wallace, CEO**

***Assignment (Deliverable Due Class 12): Interim project progress report/needs assessment/Business Plan Outline***

**Read: Chapter 11 – Flotsam and jetsam**

**LUNCH & LEARN #3 – March XX, 2017 – IP & Branding**

Every start-up needs to consider what barriers to entry it can erect to deter competition. For a therapeutics start-up, this can include intellectual property, regulatory exclusivity, and trade-secrets/know how. On the digital health and services side, barriers can be softer or even non-existent, and often the only advantage is branding, critical mass, or being the first mover. Intellectual property rights can create barriers to entry that may affect the economic viability of a venture. Just as important as understanding some basic patent law, the successful entrepreneur needs to develop and implement a successful intellectual property strategy. In this session, our guests will provide background information and developing an IP strategy.

**Speakers:** **TBD**

**Class 12 – April 3, 2018 – Biotech**

The biotech industry is a high reward space for healthcare entrepreneurs. Companies that make it to the end of the cycle are rewarded with revenues and profits that businesses selling most other products cannot hope to duplicate so quickly. It's can also be incredibly rewarding to be part of an industry that discovers, develops, and delivers new therapies and products that directly improve the life and health of millions and cure diseases.

**Speakers:** **Jeff Libson's contact**

***Assignment (Deliverable Due Class 13): Wireframe of investor pitch***

**Class 13 – April 10, 2018 – The Exit**

Why do entrepreneurs sell their business? How does an entrepreneur decide when and how to sell? Before attempting to sell your business, entrepreneurs must invest time in preparing for the process to attractive prospective buyers. When approaching the market, it's important to assess fair market value for the business so that expectations are understood and aligned before starting the process. In this lecture, we'll discuss the various processes when selling a business.

**Speaker:** **Gary Kurtzman**

**Assignment (Deliverable Due Class 14): Provide a description on how the business would be valued and provide an estimated exit value**

**Class 14 – April 17, 2018 – Industry Trends and Course Reflection – Preparation for Investor Presentations**

**Speakers:** **TBD**

**Class 15 – April 24, 2018- Final Pitch Day – All Day**

**Business Plan/Investor Presentations – Group Times TBD\*\*\***

*(Note: Reading Days Thursday, April 26 – Friday, April 27)*