

THE WHARTON SCHOOL
University of Pennsylvania
HEALTHCARE ENTREPRENEURSHIP
HCMG 867-401
SPRING 2015
Wednesdays 4:30-6:30 PM – JMHH Room []
Syllabus Date: 11/04/2014

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OVERVIEW

The goal of the course is to give students the hands-on experience of establishing a 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 healthcare IT 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 and to craft a business plan and investor presentation. Class discussions, led by course instructors as well as individuals drawn from the entrepreneurial, therapeutics, device/diagnostics, health IT and investor communities, as well as service providers, will present relevant major themes in life sciences/health care business strategy and tactics using current early stage ventures to illustrate these themes.

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 Executive Summary and the Investor PowerPoint presentation are due on April 26, 2015, and the final Business Plan is due on May 3, 2015.** 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

Students will evolve their projects and deliverables during the fall semester, but no later than the second class meeting. **Teams are required to prepare and hand in an initial project description which is due by the second class (January 28, 2015).** Course instructors, TAs, staff and mentors will assist student in selecting their projects, where needed, through relationships with Penn, Penn Medicine and HUP, 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. In addition, members of the Penn Biotech Group or other relevant individuals may act as consultants or participate as team members. 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 READINGS

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 health care 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, this year, for the first time, we are planning to provide background on some core areas such as FDA regulation, compliance, etc. on live and then made available to students through Canvas for subsequent viewing. To be respectful to the speakers, we are asking that enrolled students attend at least one of these lecture live. Prior to lectures, students will receive relevant reading in the forms of articles and case studies, among other materials.

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 21, 2015 - Healthcare Venture Lifecycle

Healthcare ventures go through a number of phases from idea generation, proof of concept, initial market traction, expansion, and exit. In the case of a life sciences or medtech venture, the phases are more often characterized as research/design, proof of concept, clinical development and approval, and commercialization with exit a possibility at an inflection point, usually stage changes, influenced by market dynamics. Hybrids between the two also exist. In this lecture, we will discuss these phases, business models (B2B, B2C, solutions, platforms, etc.), and the drivers for success at each stage. The goal is to provide context for crafting your plans and to set the stage for the rest of the course

Speaker: Gary Kurtzman

Class 2 – January 28, 2015 – Healthcare Ecosystem

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 improve quality and save money. The entrepreneur's dilemma is to develop those innovative products and services within a rapidly shifting environment for customers. This lecture will serve as an overview of the perspectives and needs of the customers today and how these may change in the future. Case studies will be discussed.

Deliverable: Project Description

Speaker: **Ming Fang**
Principal
Safeguard Scientifics, Inc.

Deliverable: Project/Technology Description

Class 3 – February 4, 2015 – Tech Transfer - Lean Start Up - Design

Once the idea has crystalized or the IP has been filed, the launch sequence begins. While in many industries, the ecosystem is readily accessible and the path generally more clearly defined, navigating the landscape in healthcare and life sciences is often complicated. In this lecture, we will discuss how to access technology from academic organizations (tech transfer), bootstrapping and lean start up, and the role of accelerators in the venture initiation process.

Speakers: **TBD**

Class 4 – February 11, 2015 – Payers as a Customer

Many entrepreneurs, when talking about their customers, often speak of payers and provider organizations rather generically. As the adage goes, “if you understand how to sell to one provider, you understand how to tell to one provider.” The same goes for payers. In reality, these are complex organizations containing many potential points of contact each with their own motivations, budgets and priorities. The goal of this lecture will be to highlight the various constituencies and stakeholders within these organizations to better understand how to approach them with a product or service offering

Speakers **TBD**

Class 5 – February 18, 2015 – Providers as a Customer

Speakers: **TBD**

Class 6 – February 25, 2015 – Pharma/Medtech as Customer

Most biopharma and medtech ventures will either “partner” with an established larger player or exit to a larger organization before commercializing their products. While a biopharma or medtech product is ultimately developed for use by a physician or patient, the proximal customer for the venture is often a larger biopharma or medtech company. In this lecture we will explore the customer and discuss why and at what phase one might want to consider partnership or sale.

Speakers: Panel: TBD

Class 7 – March 4, 2015 - Digital Health

The next three lectures will be devoted to the stories of entrepreneurs and entrepreneurial organizations in sub-segments relevant to the theme of this course. The emphasis will be on experiences that highlight the practical, and often emotional, journey of launching and scaling the entrepreneurial venture.

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 Healthcare IT (B2B). This lecture will help further define digital health, discuss the issues in launching and sustaining a digital health venture, and provide some examples.

March 4 Speaker: Chris Hogg
Chief Operating Officer
Propeller Health

Class 8 – March 18, 2015 – Medtech Stories

Medtech is defined as medical devices and diagnostics. While some of the products in this space can be developed rapidly and without a cumbersome regulatory process, others are more complex with paths more akin to biopharmaceutical products. As a result, the journey for a medtech venture is quite diverse and can be exceedingly complex. In this lecture, we will explore that journey and its drivers.

Speakers: Panel TBD

Class 9 – March 25, 2015 – Life Science/Biotech Stories

The journey for a biopharmaceutical product is complex and risky. It typically begins with a scientific discovery in an academic laboratory, traverses a translational step from the lab bench to animal and then human testing through an often complex and costly clinical, regulatory and reimbursement process prior to its commercialization. This panel will discuss this journey

Speakers: Panel TBD

Deliverable: Business plan outline highlighting key issues discovered and areas that need to be understood or further developed.

Class 10 – April 1, 2015 – IP, FDA Reimbursement, Compliance, and Clinical - live or via webcast

There are a variety of issues that a healthcare or life sciences venture will need to deal with through its journey. Some are common to all, but others are more specific to the type of business, technology or space. In order to provide background and perspectives into the areas of intellectual property, regulatory, reimbursement, compliance and clinical development, a series of lectures will be held and students will be allowed to choose one or more lectures, based on interest and relevance to their projects. These lectures will be held at times convenient for

students and later archived. Since a lively dialog is important, live participation in at least [one][two] of the lectures is mandatory.

Class 11 – April 8, 2015 – Seed/Venture Financing and “The Pitch”

There are different strategies for financing life sciences and health services ventures. In this lecture, we will present and discuss the continuum of financing for ventures and the implications of funding the company. We will discuss founder/angel and venture capital and other sources of equity and non-equity funding. We will also talk about “pitching” to funding sources and include a live pitch for the class.

Speaker: Gary Kurtzman

Deliverable: Relevance of IP, FDA-regulatory, reimbursement, compliance or clinical development to your project.

Class 12 – April 15, 2015 – Organizational Considerations

After the idea, comes the time to organize the venture and seek funding. This lecture will describe the practical and legal considerations of starting a company including the basic elements of entity formation, intellectual property protection, risk management and financing structures and process.

Speaker: Jeff Libson

Deliverable: “Wire Frame” of VC pitch highlighting what has been discovered and what is still unknown or uncertain.

Class 13 – April 22, 2015 – 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: TBD

Class 14 – April 29, 2015 – Emerging Markets/Social Entrepreneurship in Healthcare

Underdeveloped countries have differing requirements for healthcare delivery than the more developed countries. Entrepreneurs can services these markets for profit, with a positive return to society being primary or secondary. This lecture will give a perspective on developing healthcare products and services for markets outside the developed world.

Speaker: TBD

Deliverable: Executive Summary and PowerPoint pitch for the Investor Presentation

Pitch Day - May 1, 2014- All Day *Business Plan/Investor Presentations – Group**
Times TBD***

Time will be set aside at the end of classes for teams to pitch their plans to investors and others from the venture capital/finance communities.