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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.. 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 first class (January 17, 2013). 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 whom 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. 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 and Assigned Readings

Class 1 – January 17, 2013 - A Venture Story

Speaker: TBD (in 2012 speaker was Sundeep Bahn, CEO of Medivo)

Deliverable: Project/Technology Summary

On the path from inception to successful product/service commercialization, there are many more stories to be told than there are companies that have been formed. The instructors have selected examples (one at the beginning and one at the end of the semester) from the life sciences and health services communities and have invited the founders or other principals to tell their stories. The students will have the opportunity to review background materials prior to class and will be encouraged to probe the presenters on the process of the creation and execution of their ventures. We will also discuss how these examples may be illustrative of entrepreneurship in the life sciences and health services industries, and their relevance to the student projects.
Class 2 – January 24, 2013 - **Roadmap of the Venture**

**Speaker:** TBD (Steven Krein from StartUp Health invited)

**Deliverable:** One page project description including value proposition

This class will focus on helping teams develop their problem and solution hypotheses and on identifying assumptions that are key to the success of the business model. After defining a problem, solution and core assumptions, each team will need to design and outline a MVP, or “Minimum Viable Product.” The goal of the MVP test is to “Get out of the Building,” to speak with real customers and collect information for validation of the business’s riskiest assumption. The process promotes a problem-centric approach to business ideation by validating or invalidating assumptions. Teams are forced to alter their solution (and even problem) toward a true customer pain point rather than creating a solution and seeking customers with a problem, after-the-fact.

Class 3 – January 31, 2013 - **Intellectual Property as a Barriers to Entry**

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 health IT 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, student teams will discuss their IP issues, along with possible strategies and tactics with our guest lecturer.

**Speaker:** Peter Wakiyama, Esq.  
Partner  
Pepper Hamilton LLP

**Deliverable:** Utilize the lean canvas framework define the following:  
Problem Hypothesis - Identify top 3 problems relevant to venture  
Solution Hypothesis - Top three features of the venture  
Key Metrics - Key activities to measure progress  
Value Proposition specific to the venture  
Unfair Advantages related to venture  
Channels utilized  
Customer Segments targeted  
Cost Structure of venture  
Revenue Streams important to the venture

Class 4 – February 7, 2013 - **Regulatory Influences**

Many life sciences/healthcare businesses, whether active in a more traditional therapeutics role or pursuing healthcare IT products, are directly regulated or heavily influenced by government entities such as the FDA and CMS. In this lecture, we will provide an overview of the FDA’s policies, regulations and practices with respect to product/service development and commercialization.

**Speaker:** Janice Hogan, Esq.
Deliverable: List of key and IP and/or licensing issues

Class 5 – February 14, 2013 – Compliance Issues

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 compliance landscape (HIPAA, data privacy, meaningful use, payer/pricing, reimbursement, and marketing), along with risk mitigation strategies.

Speaker: [Sharon Klein, Esq.]
Partner
Pepper Hamilton LLP

Deliverable: One-page summary of expected regulatory process; groups must define the predicted regulatory pathway for their venture, including what trial data or outcome research will be required to successfully launch their product.

Class 6 – February 21, 2013 - Market Analysis

Many companies fail because they do not fully understand the true (“addressable”) markets for their products. In this lecture, we will present and discuss the factors that go into determining the appropriate market elements and what potential investors will expect to see.

Speaker: Tom Borger
President and CEO
Omega Group

Deliverable: One-page summary of expected compliance issues.

Class 7 – February 28, 2013 - The Payer

Private and public payers are critical stakeholders in the healthcare continuum, and the ultimate customers for a large portion of the products and services sold by life sciences and health IT companies. In this lecture, we will provide insights into their interests and issues and how the goals of payers need to be considered in crafting a business plan, as well as the target profile of your product or service. We will also attempt to give you a sense of the shifting landscape and changing models for healthcare payment going forward.

Speaker: Jeff Ulanet
CEO
HealthSpend Solutions

Deliverable: Draft of Excel market model. Include 1-page summary of what channels will drive commercialization initially, and what channels represent opportunities for future growth. How do or will you make money? How much could you make?
Class 8 – March 14, 2013 - The Provider

The provider, whether it is a hospital, physician or another healthcare professional, makes decisions about what products and services get utilized. Providers do this both in the context of seeking to deliver quality care, but also in the context of actual business considerations (e.g., profit/loss). In this lecture, we will give the class the perspective of from this important customer.

Speaker: Ron Paulus  
President and CEO  
Mission Health  
(Invited)

Deliverable: From the Payer’s perspective, what is new, relevant and important about your venture product? What will Payers gain or lose from your innovation? What substitutes do payers currently consider? What will you need to prove to attract Payer interest, and how will you achieve those goals?

Class 9 – March 21, 2013 - Pharma

The pharma model, business practices, finances, and cost of capital are in a state of flux. In the past, pharma was an important partner or acquirer for biopharmaceutical products. While, in the past, they were focused on the lifecycle management of drugs, they are moving into an era that includes lifecycle management of patients becoming an increasingly important customer for health IT and services focused in areas such as data analytics and physician and patient engagement. In this lecture, we will give you a perspective on pharma’s perspective on products and services they are looking at going forward and where they perceive value.

Speaker: Ad Rawcliffe  
SVP Finance North American Pharmaceuticals  
GlaxoSmithKline

Deliverable: 1-Page summary identifying the key segments of the provider community which would value your new venture, pain points met by your venture’s innovation, alternatives and differentiation of solution from a provider’s perspective. Key Questions: Who are your customers? What competing products do they currently use/may choose in the future? Who do you fear most?

Class 10 – March 28, 2013 - The Patient/Consumer

Today, the provider is still the focus of the healthcare universe. Patients still defer most of the decisions about health and wellness to physicians and other healthcare professionals. As the cost burden and decision making is being rapidly shift to patients as “consumers” of healthcare, they need the tools to make decisions about their healthcare. This shift is also leading to an increasing emphasis on wellness. A number of tools and services are coming to market to help patients avoid unnecessary interactions with the healthcare system. In this lecture, we will try and give some perspective on this shift and how it will give rise to new business models and opportunities.

Speaker: TBD

Deliverable: TBD

Class 11 – April 4, 2013 - Finance
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.

Speakers: Gary Kurtzman and Jeff Libson

Deliverable: How will you get users and/or how will you market your product? If your idea is the type that faces a chicken-and-egg problem in the sense that it won't be attractive to users until it has critical mass (e.g. a marketplace, a dating site, an ad network), how will you overcome that? If your product requires a sales force, what is the most efficient channel in which to introduce your product?

Class 12 – April 11, 2013 - Team Building, Management and HR Matters

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: Nancy Arnosti
President
Arnosti Consulting

Deliverable: Draft excel model with funding needs.

Class 13 – April 18, 2013 - A Venture Story (Part 2)

See description for Class 1

Speaker: TBD

Deliverable: Mission statement and corporate culture.

Business Plan/Investor Presentations – April 26 (and possibly April 27), 2013

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.