

Healthcare Ventures Spring 2022 15.367/HST.978 Syllabus

Class Sessions: Tuesdays, 3-4pm (all virtual) and Thursdays, 4-6pm (some virtual; some in person; see schedule below)
Zoom link for virtual session: email Kelsey Stone (kelstone@mit.edu) or see air table (once you've joined the class)
In person location: E38-470

Class Description

Healthcare Ventures explores the process of early-stage healthcare venture creation and models the process of entrepreneurship, amid navigating healthcare's complexities. The course is an opportunity for those who seek careers at the intersection of healthcare innovation, medical technology startups, global health and healthcare venture capital. This course lends a taste of the process needed to discover, evaluate, and test new technologies and business models with broad potential to impact human health. Course content and process have taken principles from MIT Hacking Medicine, Product-Market Fit, Human-Centered Design Thinking, Agile Sprints, Business Model Canvas and tailored them to the complexities and tectonic shifts of healthcare, both in the US and globally. An emphasis will be placed on understanding the Business Models and Economic Buyers for your healthcare innovation while developing a plan to design and launch a product or service.

Outside Speakers

Over half of the classes will include outside speakers from startups, venture capital, healthcare systems, government, pharma and med tech. Past years speakers included Google Ventures, PillPack/Amazon, Sequoia Capital, MIT Engine Fund, Blue Cross, Bain Capital, IDEO, Aetna, Fidelity, True Ventures, Verily/GoogleX, GE Ventures, Langer Lab, HHS, Atrius Health ACO.

Action Learning Lab

This course is a graduate-level action-learning lab with a major objective of providing participants with a near real-world experience of testing early-stage healthcare venture design and pitching. Classmates and faculty mentors include a mix of Engineers/Scientists, MBAs, Physicians, and entrepreneurs from the Boston area ecosystem, and teams are formed in a way that leverages that diversity. Participants are expected to come ready to actively engage with their teams and to coordinate tasks in and out of class to build a case for their venture. During class sessions, participants will report on their progress and receive customized assignments and advice for work outside the classroom.

Most Thursday sessions will have:

- Outside Speakers from Startups, VC, government and industry
- Faculty lectures on class topics
- Team breakout sessions.

Most Tuesday sessions will be used to provide an opportunity for teams to work together, with faculty help, to refine the work assigned for the week.

This class fulfills a requirement for the Sloan Healthcare Certificate

Joining a Team formed in class is Required

Startups are a team sport. Lone wolves don't make nearly as fast progress and cognitive diversity on a team will result in more informed decisions while teaching important leadership skills. Students will be allowed to self-assemble into a pre-set number of teams (usually 6-8 teams) of no more than 8 participants. Those participants who are not on a team by the 2nd week of class will be assigned by the faculty. We strongly encourage teams to have diverse representation in terms of background expertise, as those teams tend to make the most progress. The first two sessions will offer a semi-structured opportunity for you to meet one another (virtually on Feb 1, and in person on Feb 3). To help, you can get to know the other participants by reviewing the information on airtable. A link to airtable will be provided by Jan 24th for all those who have completed the pre-class survey. In the pre-class survey you can provide information about project areas you're interested in, and also indicate your topical interests (see below) and areas of expertise.

Pre-Requisites: None.

Website: <http://www.mitling.org/HealthcareVentures/>.

Required pre-class Survey for all participants

All participants must submit the pre-class survey by 9 AM on Tuesday, February 1, 2022 via <https://airtable.com/shrQr9KBAAK4tcS8>
Once you have completed the survey, you will be provided access to an airtable gallery where you can "meet" the other class participants, so we encourage you to complete the survey as soon as you know you're interested in participating.

Cross-registration website for Wellesley, Mass College of Art, & Harvard

For more info about cross-registration, please visit the MIT cross-registration website <https://registrar.mit.edu/registration-academics/registration-information/cross-registration>. For cross-registrant who is graduating this semester and has a concern about the dates that grades will be provided, please know that we have resolved this satisfactorily in prior years by agreement of the course staff; please reach out to the TA to let us know, and to learn the details.

Course Faculty

Zen Chu (zenven@mit.edu)
Michael Dempsey (dempsey@mit.edu)
Martha Gray, PhD (mgray@mit.edu)
Arthur Hiller (ajhiller@mit.edu)
Ayesha Khalid, MD/MBA (akhalid@mit.edu)
Alice Pomponio MPP (pomponio@mit.edu)

TA

Kelsey Stone (kelstone@mit.edu)

Class 'Cloud' Drive: <https://bit.ly/31EtihF>

Because of the community nature of the class, resources are NOT distributed through Stellar or Canvas (MIT's online course management system). All classroom resources are maintained out of a shared Google Drive folder, and obtaining access will be coordinated on an individual basis. Access can be requested via the link.

Themes for Healthcare Ventures

Teams will be formed at the start of the class as described above in the Team Formation section. Participants tend to aggregate by areas of interest. Accordingly, the airtable gallery will include each participant's areas of interest as expressed in the pre-class survey. After teams are formed in the early classes, you will begin by exploring problems that can be addressed, guided by the team's areas of interest. In the second block, you will consider and test potential value propositions, and finally, in the third block, you will craft a business model and pitch. Teams will witness the development, challenges, and progress of the other teams attacking different areas of healthcare in the course at regular intervals. By the end of the course, students will have experienced best practices in identifying and validating health venture opportunities, amid the challenges of navigating the healthcare/disease mapping, team dynamics, and venture capital pitching process.

These themes represent areas of significant opportunity:

- Administrative automation and digitization (e.g., Cedar, Olive)
- Disease management and therapeutics (e.g., Omada, Hinge Health)
- Screening and diagnostics (e.g., Arterys, Modern Fertility)
- Drug discovery (e.g., Atomwise, insitro)
- Clinical trials (e.g., DNAnexus, Science 37)
- Clinical intelligence and enablement (Unite Us, BrightInsight)
- Primary and urgent care (e.g., Carbon Health, Cityblock)
- Specialty care (e.g., Somatus, Cricket Health)
- Pharma supply chain (e.g., Capsule, Truepill)
- Health plans and benefit management (e.g., Carrot, Lyra)
- Real world evidence (e.g., Tempus, Medbanks)
- Virtual care delivery (e.g., hims & hers, Doctor on Demand)
- Women's health (e.g., Maven, Elvie, Tia)
- Health & fitness (e.g., Fitbit, Withings)
- Genomics (e.g., 23andMe)
- Healthcare/DAO/Fintech
- Remote monitoring (e.g., vitalconnect, eCaring)
- Web3/Crypto

(It's ok if you don't know yet or don't have a strong preference!)

Testimonials:

“Multiply Labs transformed from a research idea into a startup during Healthcare Ventures. The discussions with the mentors and the guidance of the class faculty were invaluable to shape our early business model. Most importantly, the class made us reflect deeply about the numerous and interconnected stakeholders in the US healthcare systems. The challenges that we identified during Healthcare Ventures have shaped the evolution of our startup until today - and many of the solutions that we converged to first emerged during the class!”

— Fred Parietti, PhD, Founder of MultiplyLabs

“The team behind Healthcare Ventures is dedicated to providing individualized guidance, both inside and outside the class. Despite being extraordinarily busy, every instructor was willing to take extra time to share feedback, brainstorm ideas, and open up their networks and experiences to us. Some of the most important strategic decisions we’ve made at Karuna were shaped by those conversations.”

— Joe Kahn, Founder of Karuna Health, backed by VCs FirstRound, Slow Ventures, Founder Collective, Lerer Hippeau

“As a Harvard Master of Public Health student, Healthcare Ventures allowed me to bring my public health background and apply them to numerous healthcare startup ideas, adding evidence-based skills to the challenges of building viable healthcare businesses. The class was a phenomenal way for me to meet other students across MIT and Harvard who are passionate about healthcare.”

— Jane Rho, Harvard Masters of Public Health 2020

“Healthcare Ventures brings together expert advisors and a cohort of passionate, intelligent colleagues to facilitate the venture creation process, a model that I’ve taken with me into my current venture. I come into the class from a graduate program with my own startup in mind, but the class made it into a reality.”

— Andy Chen, Harvard Ph.D. 2019

Certificate of Accomplishment & Grading

All course participants will be given a signed certificate of accomplishment at the conclusion of the course. The certificate will be personalized with the student name, team name, and date. These will be presented on the final day of class.

Grades will be based on class participation, assignments, and team project.

- Attendance & Participation: 20%
- Team Projects: 80%
 - Assignments 25%
 - First Advisory Panel Presentations: 20%
 - Final Team Presentation: 35%

Attendance

Because this class is an interactive, team-based course, regular attendance is mandatory. Please contact the TA if you need to miss more than one class.

Assignments

Tentative assignments for the semester are posted in [Airtable](#). These assignments are subject to change, based on the needs of the teams. The final assignments will be described in a class session, and the [Airtable](#) updated with any modifications. Assignments are generally issued during the Thursday session. Unless told otherwise, a draft of the assigned work is due by 3p Tuesday (to be used during the Tuesday workshops), and the final version is due by 10a on Thursday.

Assignments are to be completed by the team, and only one submission per team is expected. Teams will need to determine how to distribute the workload and synthesize the work prior to submission.

Expectations During Remote sessions

Below are the standard Expectations of Remote Students at MIT Sloan which we will adhere to in Healthcare Ventures:

- Connect to the video conference meeting five minutes before class start time and to be entirely settled in a controlled environment by the beginning of the class meeting. Your calendar should be blocked off, your staff be made aware of this time, and considered equivalent to any meeting which cannot be interrupted.
- Set usernames to display your full name, program, and graduating year (e.g. John Doe, MBA21). Do this at the initial login prompt in the "Screen Name" field. If you have signed up for an account at <https://mit.zoom.us>, then it will get the information from your profile.
- Be present and attentive during class. Students who are engaged in other activities, unresponsive in the chat, disruptive to the class, or failing to meet any of these expectations will be put on a brief hold by the TA. A report will be sent to the staff whenever a remote participant is placed on hold multiple times in a single meeting.
- Maintain an uninterrupted video image of one's entire face throughout the duration of the class. Interruptions of a remote student's image are considered the equivalent of a local participant exiting the classroom or inviting distractions into the classroom. This includes poor framing, bandwidth, lighting, colleagues entering your office, driving while joining the meeting, and/or obstructions to a student's webcam. If you have a Lenovo and cannot enable your camera, [please follow the steps in this support article on IT Support Guides](#).
- Interact with instructors and local participants through audio or chat. The TA is not responsible for vocalizing your questions in class. S/he can draw the faculty member's attention towards your request.
- Direct all content-specific questions to the TA and technical support questions about your personal technology to Zoom (<https://zoom.us/support>).
- Do not operate a vehicle while attending class.
- Wear headphones, preferably with a built-in microphone.
- Report all feedback to the [Improvement Survey](#).

Video Recording

We expect attendance at all sessions. Having said that, we're aware that, on occasion, participants will need to miss a session. Where possible, we will record the lecture components of the session. These recordings will be made available, on request.

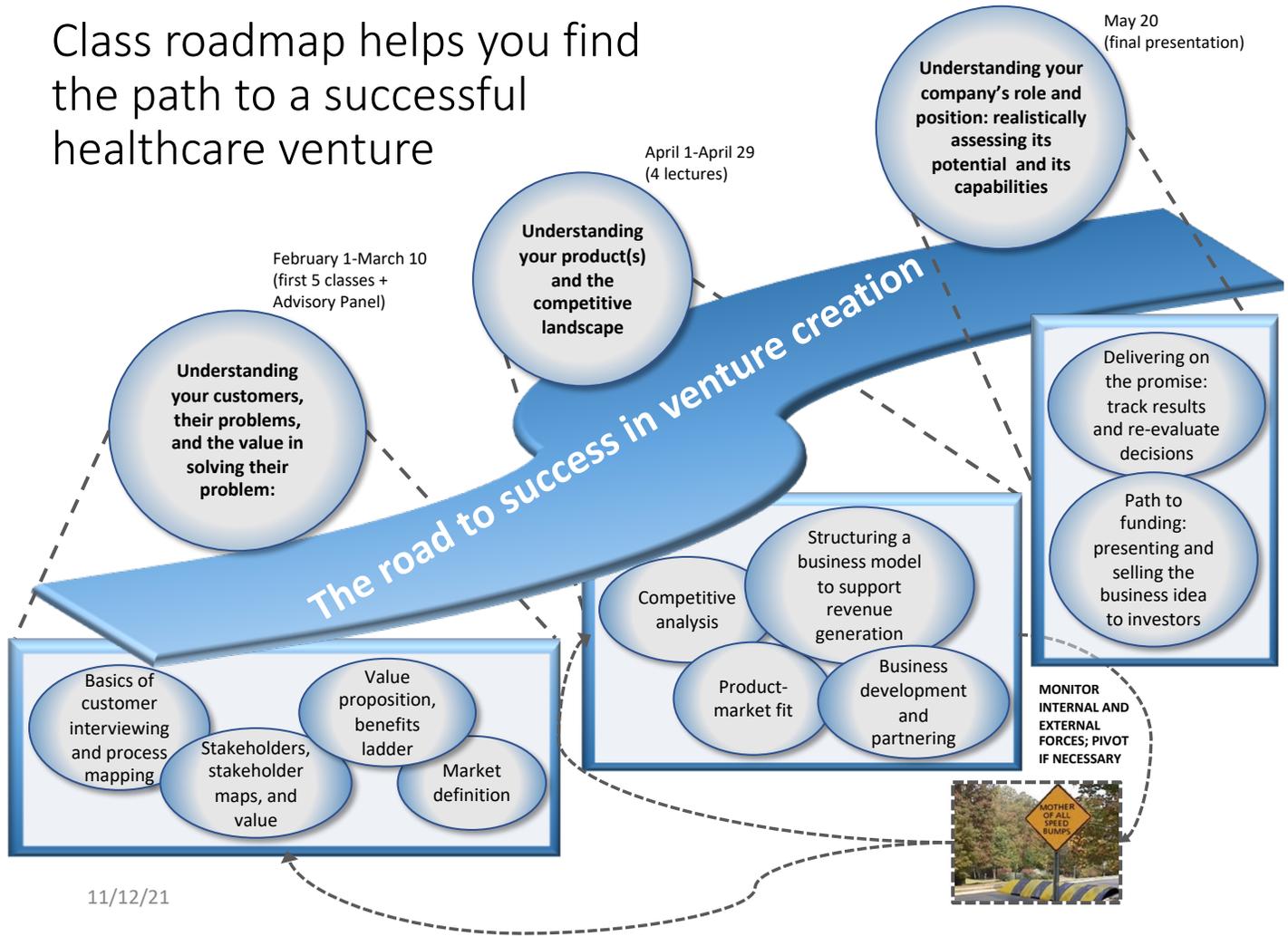
For those who do not want to be included in the recording: When we are recording during an in-person session, please select a seat that is not included in the camera. Ask the TA if you are unsure where that might be. When we are recording during zoom, we will relax the policy stated above under remote participating during the time recording is active. Specifically, you can turn off your video, and, if need be, rename your zoom name to Anonymous. Once recording has stopped, we expect you to restore your name and turn on your video.

Essential Reading References

- Biodesign: The Process of Innovating Medical Technologies 2nd Edition - Paul G. Yock et. al
- Disciplined Entrepreneurship - Aulet, Bill
- Four Steps to the Epiphany Blank - Steven Gary
- Venture Deals Feld - Brad
- The Lean Startup - Reis, Eric
- The 30 Best Pieces of Advice for Entrepreneurs in 2017: The most insightful and transformative pieces of advice we published on the Review in 2017, curated for your perusal and continued excellence. Relevant to everyone working in tech, not just founders http://firstround.com/review/the-30-best-pieces-of-advice-for-entrepreneurs-in-2017/#rt_u=1492537739_oaHDzo.

Additional materials will be shared in the Class Google Drive and customized for teams.

Class roadmap helps you find the path to a successful healthcare venture



Class Schedule

Type	Date	Lecture/Reciation Topic	
R	1-Feb	Idea sharing	Understanding the problem
P	3-Feb	Introduction to Class & Understanding the Needs to be Solved Problem pitching	
R	8-Feb	Team formation	
P	10-Feb	Building Team relationships Stakeholders, Decision Making Units, Stakeholder Maps, and Value	
R	15-Feb	Workshop stakeholders, hypothesized value and stakeholder map	
R	17-Feb	Interviewing Introduction to Team Charter	
N	22-Feb	No class	
R	24-Feb	Value Proposition, the Benefits Ladder and Decision Making Units	
R	1-Mar	Workshop value props and DMU, review team charter with faculty	
R	3-Mar	Market Definition	
R	8-Mar	Dry run advisory panel presentations	
R	10-Mar	Advisory Panel #1	
N	15-Mar	SIP Week	Understanding the product
N	17-Mar	SIP Week	
N	22-Mar	Spring Break	
N	24-Mar	Spring Break	
R	29-Mar	Review status based on hw submissions with faculty	
R	31-Mar	Competitive Analysis	
R	5-Apr	Workshop competitive analysis	
R	7-Apr	Product Market Fit	
R	12-Apr	Workshop product market fit	Under-standing the company
R	14-Apr	Structuring a Business Model to Support Revenue Generation	
R	19-Apr	Workshop business model	
P	21-Apr	Business Development and Partnering	Bringing it all together
R	26-Apr	Workshop strategic partner through process	
R	28-Apr	Conversational pitches - prep and structure for rapid learning and adapting so you can determine your impact on changing outcomes	
R	3-May	Workshop conversational pitches	
P	5-May	Path to funding; presenting and selling the business idea to investors	
R	10-May	Advisory Panel dry runs	
P	12-May	Final advisory panel	

***Type**
R=Remote
P=In person
N=No class