

**Healthcare Ventures Spring 2023**  
**15.367/HST.978 Syllabus**

**Class Sessions:** Tuesdays, 3-4pm (all virtual, via Zoom) and Thursdays, 4-6pm (**in-person, E62-233**)

Note, students are expected to attend both the Tuesday and Thursday sessions.

Zoom link for virtual session: email Tom Luly ([tluly@mit.edu](mailto:tluly@mit.edu)) or see Slack (once you've joined the class)

**Please note that there is no Canvas module for this class; we use Slack for communications and assignments.**

**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 6-7 participants. Those participants who are not on a team by the 2<sup>nd</sup> 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 7, and in person on Feb 9). To help, you can get to know the other participants by reviewing the information on airtable. A link to airtable will be provided in early February 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 7, 2022 via <https://airtable.com/shrTmyFekzEs8IO0V>

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](mailto:zenven@mit.edu))  
Michael Dempsey ([dempsey@mit.edu](mailto:dempsey@mit.edu))  
Martha Gray, PhD ([mgray@mit.edu](mailto:mgray@mit.edu))  
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## TA

Tom Luly ([tluly@mit.edu](mailto:tluly@mit.edu))

## Slack Base

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 will be shared on the class Slack base and obtaining access will be coordinated on an individual basis. The Slack base will be a useful communications tool between and amongst teams, and we will utilize this to make class-wide announcements, as well as to communicate directly with individuals and teams.

## 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 Slack. 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 Slack 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:

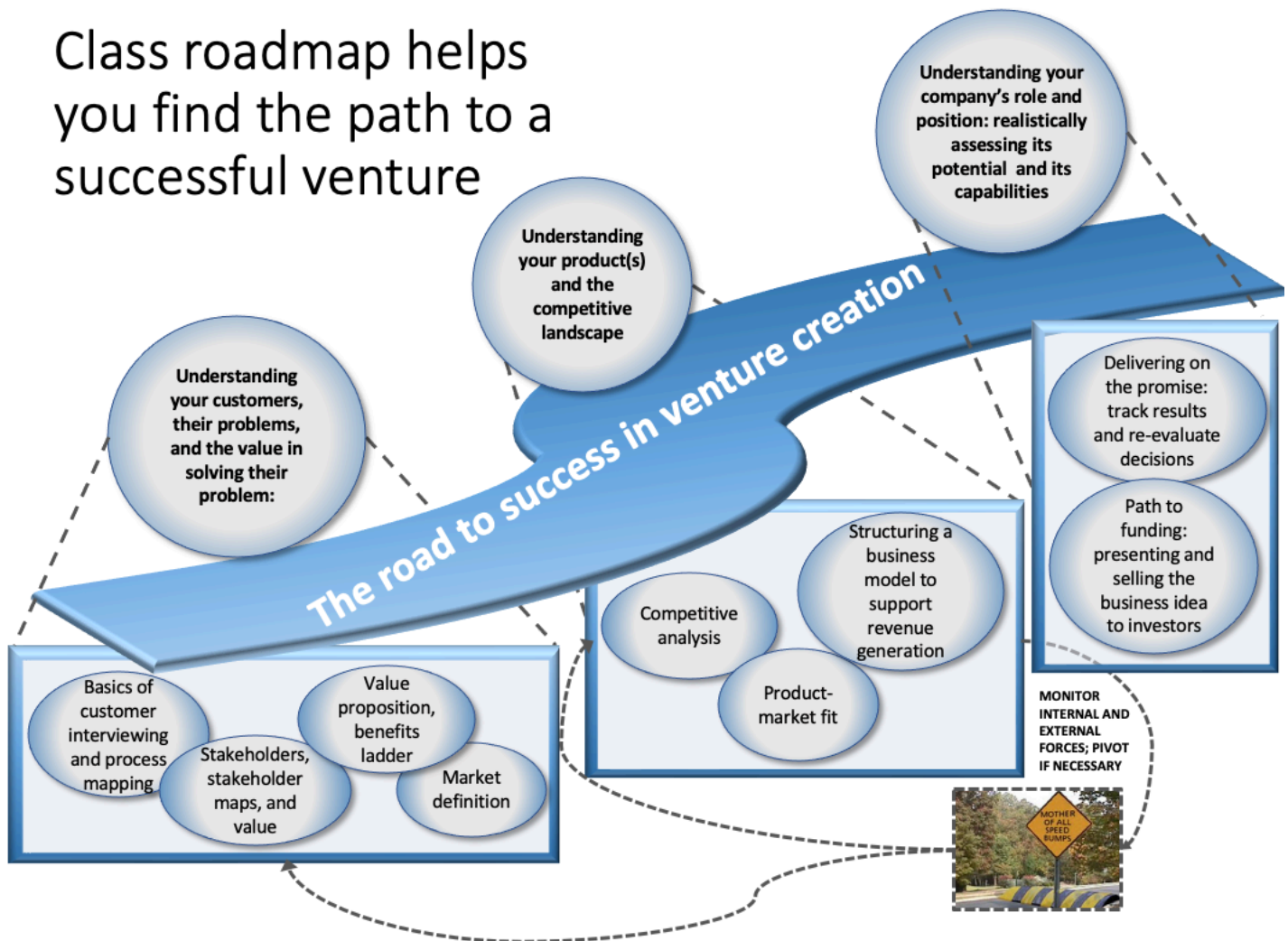
- Connect to the video conference meeting five minutes before class start time and to be entirely settled in a controlled environment by the beginning of the class meeting. Your calendar should be blocked off, your staff be made aware of this time, and considered equivalent to any meeting which cannot 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](#).

## 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](http://firstround.com/review/the-30-best-pieces-of-advice-for-entrepreneurs-in-2017/#rt_u=1492537739_oaHDZo).

Additional materials will be shared on Slack and customized for teams.

Class roadmap helps you find the path to a successful venture



## Class Schedule

Dates highlighted in yellow denote classes held virtually on Zoom (Tuesdays)

All other sessions (Thursdays) will be in person in E62-233

	Unit name	date	Lecture/Recitation Topic
<b>Understanding the problem</b>	Team forming	7-Feb	Idea sharing
		9-Feb	Introduction to Class & Understanding the Needs to be Solved Problem pitching
		14-Feb	Team formation
	Stakeholders	16-Feb	Building Team relationships Stakeholders, Decision Making Units, Stakeholder Maps, and Value
		21-Feb	No Class
	Interviewing	23-Feb	Interviewing Introduction to Team Charter
		28-Feb	Workshop previous homework on stakeholders and interview plans
	Value Proposition and Decision Making Units	2-Mar	Value Proposition, the Benefits Ladder and Decision Making Units
		7-Mar	Workshop value props and DMU, review team charter with faculty
	Market Definition and Competitive Landscape [Arthur]	9-Mar	Market Definition
		14-Mar	Dry run advisory panel presentations
	Advisory Panel #1	16-Mar	Advisory Panel #1
		21-Mar	SIP week
		23-Mar	SIP week
		28-Mar	Spring break
		30-Mar	Spring Break
		4-Apr	Review status based on hw submissions with faculty
<b>Understanding the product</b>	Competitive Analysis	6-Apr	Competitive Analysis
		11-Apr	Workshop competitive analysis
	Product Market Fit	13-Apr	Product Market Fit
		18-Apr	Workshop product market fit
<b>Understanding the company</b>	Business Model	20-Apr	Structuring a Business Model to Support Revenue Generation
		25-Apr	
	Strategic Partnering	27-Apr	Business Development and Partnering
		2-May	Workshop strategic partner thought process
<b>Bringing it all together</b>	Pitches	4-May	Conversational pitches - prep and structure for rapid learning and adapting so you can determine your impact on changing outcomes
		9-May	Workshop conversational pitches
	Final presentations	11-May	Path to funding; presenting and selling the business idea to investors
		16-May	Final class presentation: Advisory Panel dry runs
		18-May	Final advisory panel (optional)