

MTM Capstone Project Team Solicitation 2023-24

"MTM students were instrumental in moving the development of my project forward"
– MTM Capstone sponsor

Overview

The UC Berkeley - UCSF Master of Translational Medicine (MTM), a joint program between UC Berkeley and UCSF, trains students to take new healthcare technology innovation from early research to clinical use. The centerpiece of the program is a real-world project that student teams work on in collaboration with a sponsor. Each year, we seek external projects that provide hands-on learning opportunities for teams of 3-4 students while substantially advancing a new innovation towards the clinic.

MTM teams are interdisciplinary, including engineers, life scientists, and occasionally members with clinical or business experience. Teams take on different tasks during the year depending on the needs of the project sponsor, the requirements of their courses, and students' interest and career goals. Typical tasks suitable for capstone teams include prototype development, needs evaluation and market analysis, and early verification. Students work approximately 10-15 hours per week in the early part of the year and 15-20 hours per week toward the end of the program.

The MTM program prepares students for careers in healthcare technology innovation through a combination of hands-on experiential learning and classroom work. The Capstone Project serves as the focal point for class exercises and presentations; students learn about IP, for instance, by conducting an analysis of the technology essential to their project. The culmination of the program is a final, public presentation of the project idea and their efforts, similar to a business pitch event.

Student Profiles

Students come to the program with a wide range of backgrounds, skills, and levels of work experience. Some are primarily interested in technical development, others are most enthusiastic about business and entrepreneurship. Still others hope to gain clinical exposure in preparation for medical school. They value opportunities to learn about different healthcare examples and career paths.



Students conduct a wide range of tasks during the MTM. Some (in blue) are assigned course deliverables. Others (examples in green) may be specific to a given project.

2010-22 MTM Cohort

62% Undergraduate engineering

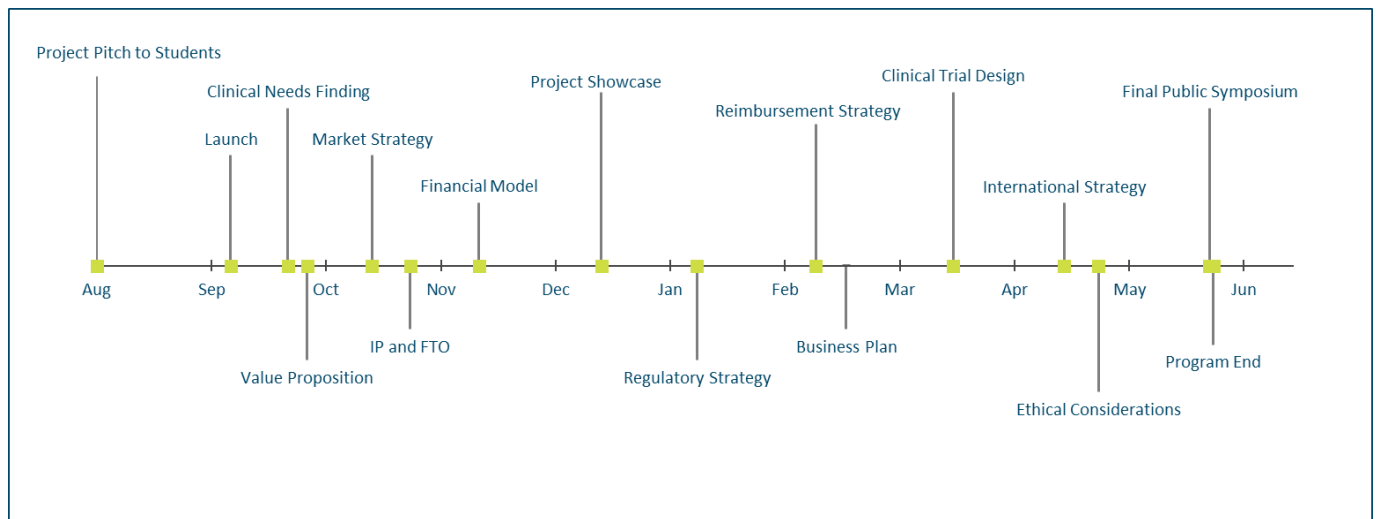
18% Clinical experience

Additional backgrounds in neuroscience,
molecular biology, and business

The MTM Year

The MTM year is fast paced and intense with frequent class assignments related to the capstone project. Sponsors should expect the students to spend time examining the market proposition, financial and reimbursement model, regulatory pathway, and IP landscape as part of the project and class work. Though the exact dates of these deliverables are subject

to change, the chart gives an example of the pacing of the year. Project sponsors, especially at early stages, find these course reports valuable for a variety of uses including funding proposals and development planning. For some aspects of the project, students may be paired with relevant external mentors.



The arc of the MTM year, including potential class deliverables.

Expectations of the Sponsor

In order to help ensure a mutually beneficial relationship between the sponsor and the MTM to provide an excellent learning opportunity for our students, the program holds the following expectations of our sponsors:

- **Commitment to student learning and growth.** MTM students are seeking an excellent educational experience that will prepare them to launch into a variety of careers; their work on their capstone project is the centerpiece of their experience as students. Sponsors must commit to the goal of helping students grow and explore areas that are of interest and to facilitating collaborative working relationships across disciplines.
- **Access to ample resources.** Although there is no direct cost for sponsoring an MTM team, sponsors need to have adequate resources available (data, software, prototyping equipment, industry/clinical partnerships, etc.) so that students can begin meaningful work at the start of the program.

Anatomy of Successful Capstone

Variety of project deliverables of interest to sponsor

Regular contact with sponsor team

Opportunities for students to develop a range of skills

Sufficient resources (time, equipment, funding) available

Able to be discussed in non-confidential settings

- **Ability to meet with students on a weekly basis.** Sponsors should be excited to help students advance their goals and grow as individuals and a team. Teams are expected to have weekly with sponsors, and to be in touch via email as needed between meetings. Fully remote projects should plan for at least three in-person meetings between sponsor and students during the year.
- **Coordination with program administration.** Our sponsors are asked to complete monthly surveys on team progress to ensure that the project is moving forward as expected with aligned goals. We encourage sponsors to stay in communication with program administration about team progress.
- **Alignment with program deliverables.** Sponsors must review student documents in a timely manner, and strive to align project expectations and timelines with the MTM schedule (see timeline above).

“Due to the MTM team's efforts ... we are in a fundamentally stronger position as a company than we were just 9 months ago” -- MTM Capstone sponsor

Remote Work Expectations

The safety and well-being of our students is always paramount. For the coming year, current guidance is that students can work in person, but in the worst case, activities might need to be conducted remotely.

Based on our recent experience, we are willing to consider projects sponsored by groups outside of the Bay Area. Such sponsors should establish regular weekly contact with students and involve them in the broader project team. Remote teams should plan for at least three in-person meetings throughout the year.

Timeline for Project Selection and Launch

Project proposals are vetted by the MTM leadership to ensure they contain the elements needed for successful student learning. During this process, the MTM program may reach out to proposing teams for clarification of their plan or to request improvements. Below is a general timeline for when we expect different phases of the selection and establishment processes to occur:

- *Mid-to-late June:* All proposals for projects submitted
- *August:* Selected project descriptions shared with incoming students
- *August:* sponsor teams present their projects to the students, with opportunity for discussion
- *August:* MTM program builds capstone teams, balancing each student’s background and level of interest with sponsor’s needed skills. Students are considering multiple projects, so no particular student is guaranteed a place on a particular project
- *August-September:* Final teams of 2-4 students ready to begin work
- *Late August-September:* Sponsors should plan a kick-off meeting to bring students on board

Project Proposal

(Note: you can also submit this at <https://uctranslationalmedicine.org/capstone/propose-a-project/>)

The project proposal allows both the MTM program and students to understand your project needs and how you plan to support students. These proposals are typically around four to six pages (plus the cover sheet).

Each proposal should contain the following components:

- **Cover sheet** (use template on following page)
 - Single page helps students organize their project interests
- **Project narrative** (1-2 pages)

- Description of clinical issue and high level goals
- High level of current project status (e.g., early stage, under development, well advanced)
- Resources available for the project (such as workspace, funding, partnerships)
- Roles, responsibilities, and skills expected from students
 - *Please note the interdisciplinary nature of teams described above. MTM teams will include 3-4 students with a range of skills and backgrounds.*
- **Project milestones and main deliverables**
 - Detail what you hope the MTM will accomplish in the coming year, and provide a schedule and description of deliverables that align with your own development
 - Note that the student teams are required to submit each of these components for program deliverables:
 - User needs assessment
 - Market and competitive analysis
 - Concept generation and testing
 - Intellectual property and freedom to operate
 - Regulatory strategy
 - Reimbursement planning
 - Business model development
- **Mentorship plan**
 - Describe who will be part of the sponsorship team, and how, and in what capacity, they expect to interact with the student team
 - Type of work environment (entirely remote, company site, university lab)
 - Frequency of general lab / organization meetings (including day and time if known)
 - Frequency of dedicated meetings with MTM team (minimum weekly)
 - Approximate time each sponsor team member expects to give to the project (e.g., frequent availability, weekly meetings, only as needed, etc.)
 - Identify who will be available for routine contact to answer students' day-to-day questions
 - Outline the first tasks students will pursue following the initial team meeting
- **Plan for remote work**
 - Outline the expected mix of remote and in-person activities for MTM student team
 - Describe how you will organize at least three in-person activities
 - In the event that public health changes place additional restrictions on activities, outline a plan to ensure students can continue to advance their learning

Repeat Teams

For sponsors who have hosted an MTM team within the previous two years, please provide the following additional information to help students understand how the coming year will offer an independent capstone experience:

- Describe the milestones achieved by the previous MTM capstone team

- Identify new milestones for this year's team that were not approached in previous year
- Outline specific differences between this year's project and the previous team
- For the class deliverables, explain how additional student work will add value to project

Please note that students will be encouraged to reach out to previous student team members to gain their insight into their experiences working on your project.

Cover page template

<Project Title>

<Team Leader (Name, title, email)>

<Sponsoring organization or entity>

<Additional Key Personnel>

<Project Summary (max 250 words)>

<Remote or In-person plan summary>

Ideal Team Size (Generally 3-4 students):

Acknowledge student presentations

We understand that MTM student teams will need to present information about their project in classes throughout the year at a final symposium that will be public. We will work to resolve any sensitive IP strategy issues to make this possible. (TYPE NAME HERE TO ACKNOWLEDGE _____)

Please submit completed proposal to MTM@berkeley.edu