

MS Capstone Program

The innovative MS Capstone degree program provides a mixture of rigorous training in Biostatistics and hands-on practical experience that will prepare graduates to “hit the ground running” as leaders in Biostatistics and Data Science in the private sector, public sector, or academia. The culminating experience is a Capstone Project that will be completed over the course of six months (Oct – Mar) in the academic year.

The ideal project will be an opportunity for MS Capstone students to help sponsor organizations attack a challenging and important real-world problem. The end product will enable the sponsor to better achieve their goals and will represent a culminating learning experience that graduating students can use to showcase their technical and professional skills.

Capstone Project Overview

The Capstone Project is the culmination of students’ learning in the MS Capstone program. Upon completion of the Capstone Project, students will have learned, demonstrated competency and interpretation of results in

- Data analysis
- Statistical programming
- Consulting with non-statisticians
- Written and oral communication
- Collaborative teamwork
- Project management

In the Capstone Project, students will typically work in groups of 3-4 on a real-world challenge in health data analytics, in close collaboration with the course instructor and a sponsor – typically an investigator who works in the area supplying the real-world challenge. Students and sponsors are introduced to each other and the challenge at the beginning of autumn quarter. They then form collaborative teams and work together to develop the approach and methods, carry out the project, and share findings in oral and written form at the conclusion of winter quarter.

The primary responsibilities of the project sponsor will be as follows:

- Meet with the course instructor in advance to discuss project scope and focus [July]
- Introduce a project that is important to you to MS Capstone students [Sept]
- Make needed data available and agree on any use restrictions [Sept - Oct]
- Engage with students on an ongoing basis to ensure mutually beneficial project planning, scoping, execution, and presentation of interim results [Oct- Mar]
- Receive and provide feedback on final deliverables [Mar]

Delineation of Roles

Role of the Students:

As this is not a traditional class, but instead an experiential learning project, students will function as project managers and team contributors. Typical project teams will be comprised of 3-4 students. Project teams are expected to deliver completed assignments that show attention to the project requirements, communicate in a timely manner, contribute to the course discussions, and build a successful working relationship with their project sponsors. Project teams will manage their own project goals and timelines.

Role of the Sponsor:

The project sponsor is, in essence, the client. The Department of Biostatistics asks the sponsor to ensure the project team has access to the information necessary to successfully complete the project. The nature of the relationship with the sponsor varies from project to project. Some sponsors will work more directly with project teams while others will expect the teams to work independently. The team's responsibility is to establish solid communication with the sponsor and effectively manage the relationship. Project deliverables to the sponsor will be included as part of the course final project report.

Role of the Instructor:

The instructor serves as the overall supervisor for the Capstone Project. In that capacity, the instructor organizes all aspects of the course, provides scientific advice to project teams, and helps resolve issues that arise within teams and between teams and sponsor organizations. The instructor will meet with teams on a regular basis to review status updates and other course deliverables, provide feedback on project progress, give advice on sponsor interactions, and assist with practical issues such as conflict resolution. The instructor will also maintain open communication with project.

Schedule

Deliverables

Biostatistics Capstone I – Project Preparation (Biost 596, October- December)

This is the first of two quarters of the Capstone Project sequence. Students are introduced to a health data-analytics challenge by a sponsor and form collaborative teams. This quarter is primarily focused on project initiation and planning with some execution towards the later part of the quarter (timelines will vary from project to project). Primary tasks are working with your sponsor and team on scoping, planning and scheduling the project and its deliverables and beginning execution.

Week 1: None
Week 2: Project description and team roster
Week 3: None
Week 4: Project proposal
Week 5: None
Week 6: Analytic plan
Week 7: None
Week 8: Project management plan
Week 9: None
Week 10: Project Update

Biostatistics Capstone II – Project Implementation (Biost 597, January - March)

This is the second of two quarters of the Capstone Project sequence. Students continue working in teams formed in the first quarter to carry out the project they proposed. This quarter is primarily focused on the execution and delivery stages (timelines will vary from project to project). Primary tasks are working with your sponsor and team on completing execution, and on delivering the end product to the sponsor in oral and written form and prepare materials for their individual Portfolios.

Week 1: Status Report #1
Week 2: None
Week 3: Status Report #2
Week 4: None
Week 5: Draft report and presentation
Week 6: Draft report and presentation
Week 7: Status Report #3
Week 8: None
Week 9: Final report and presentation
Week 10: Individual Capstone Portfolio