

Guidelines for the MS Biostatistics Capstone Project Written Report, Oral Presentation, and Final Oral Examination

The Master of Science (MS) in Biostatistics program requires 1) satisfactory completion of 32 credits of approved coursework, including 8 credits of BST 493 Capstone Project; 2) oral presentation of the work conducted during the capstone project; 3) satisfactory performance on the final oral examination; and 4) submission of a final (revised) written report of the capstone project.

Students should consult with the Graduate Program Administrator for information regarding deadlines, registration requirements, and degree conferral dates. International students are strongly encouraged to discuss post-degree options with ISO at the beginning of their final semester (e.g., grace period to remain in the United States after degree completion, OPT work authorization timeline).

BST 493 Capstone Project

The capstone project requirement is met by working on an applied biomedical project. The student identifies a faculty member from the Department of Biostatistics and Computational Biology as the primary advisor. The primary advisor helps the student choose a topic and identify a biomedical advisor outside the department (usually from the University of Rochester Medical Center) who provides a dataset for the student to work on. The student, with the help of the primary advisor, needs to identify another biostatistics faculty member to form a three-person advising committee before the project starts. Committee composition must be approved by the Master's Program Director and in accordance with University regulations. All committee members from DBCB must be full-time faculty at the rank of assistant professor or higher (including research faculty). At least one of the biostatistics committee members is required to be tenure-eligible. The external biomedical advisor need not hold a faculty position (full or part-time) at the University of Rochester.

The primary advisor and the biomedical advisor will jointly formulate the aims and scope of the project. These project advisors will provide continued support to the student until completion of the project. In particular, the primary advisor will closely oversee the project and provide regular guidance to the student not only during the work, but also during development of the report and preparation for the presentation and final oral examination.

The student's activities should form a coherent whole that can be summarized after 2-3 months of work. Students are required to write a formal report summarizing the findings from their project. These findings are presented in a public lecture, which is followed by a closed oral examination.

The Written Report

Content of the Report

The report should describe a coherent statistical analysis of a dataset arising from a biomedical research project, undertaken by the student. The Capstone Project is expected to involve 2-3 months of work, usually started right after the end of the spring semester. Although it is expected that the student will receive guidance and help during the project, the report should document the student's own work,

not that of others. The report should describe the research or science – it is not intended to function as a journal of the student’s work.

Sections of the Report

The material must be divided into the following major divisions, which should appear in the order shown:

Title page (see sample for required format)

Abstract

Table of Contents

List of Tables (where appropriate)

List of Figures (where appropriate)

Introduction

A description of the background to the project, including a brief account of the scientific rationale and objectives of the study.

Methods

Some topics to consider are type of study (observational or experimental); study population; method of sampling and choice of sample size; description of intervention(s), if any; method of randomization, if any; response variables; and covariates and confounding variables. A description of the statistical methodology used should be provided, with references to the literature where appropriate. The description should be detailed enough to allow another competent statistician, given the same data and computing facilities, to reproduce major steps in the analysis.

Results

A summary of the major results from the analysis.

Conclusions

An interpretation of the findings. This part must be written for the general reader, and should be in non-statistical language.

Bibliography

Appendix (optional)

Physical Form of the Report

The report must be printed single sided on 8.5 x 11 inch paper. A standard font (Times New Roman, Arial, or Helvetica) in 11- or 12-point font size with double line spacing is required. Top, bottom, and side margins should be approximately 1 inch.

The report should not exceed 50 (double-spaced) typed pages, including appendices. Usually, 30 pages will be ample. Tables should be presented in concise form, as would be required by a scientific journal, not in the form delivered by SAS or similar computer programs.

Computer printouts should be included sparingly, if at all. While it may occasionally be feasible and of interest to provide listings of small sets of data in an Appendix, this is not generally required. Depending on the context of the analysis, it may be helpful to provide data forms. Use of graphical displays to highlight findings of major interest is encouraged, but again, selectivity is required.

Other Considerations

Because investigators may need to ensure that proprietary information is not disclosed, the student should provide a draft copy to the primary and biomedical advisors for review before submitting it to the committee.

Oral Presentation and Final Examination

The student is responsible for arranging a time when all three committee members can meet for at least two hours. This meeting must be held on a weekday that is not a University holiday. Upon notification of the agreed meeting time, the Graduate Program Administrator will reserve a location and prepare paperwork to officially register the student's MS Final Examination date with the Office for Graduate Education and Postdoctoral Affairs (GEPA).

At least two weeks before the MS Final Examination date, the student must distribute the written report to the three-person committee. Distributing the report either as a hard copy or via email is acceptable unless otherwise requested by the committee. A PDF of the report must be emailed to the Graduate Program Administrator.

On the MS Final Examination date, the student will give an oral presentation about the work undertaken during the project. This public lecture should be approximately 30-45 minutes in length and include slides or other visual media. Around 10 minutes is allowed at the end for audience questions. All members of the Department of Biostatistics and Computational Biology are invited to participate in the public lecture. The student is also welcome to invite family, friends, and others to attend.

The public presentation will be immediately followed by the closed oral examination with only the three committee members and the student in attendance. The purpose of this closed oral examination is to assess both the work and the student's general knowledge of statistics acquired through formal coursework and research and analysis conducted during the project.

A private vote will be taken at the end of the closed session by the examination committee to determine whether the student has successfully completed the project and passed the oral examination. The student will re-enter to the room to learn the vote outcome (Passed, Passed pending modifications, Fail). At most one repetition of the oral examination is allowed. Should the examination committee determine that major modifications are necessary, degree requirements will not be considered satisfied until the final revised report is submitted and approved.

After the MS Final Examination, the student is required to submit a final revised copy of the report to the Master's Program Director and Graduate Program Administrator. This final report must incorporate any changes suggested by the examination committee. Committee members may require the student to obtain their approval before submitting the final revised copy.

Student status will end and degree requirements will be fulfilled when the final revised report is accepted by the Master's Program Director. Reports that have been judged as acceptable and that do not contain confidential information intended for disclosure only to committee members will be permanently stored in the Department of Biostatistics and Computational Biology and be available for reference by faculty and students.

<<Report Title>>

by

<<Name of Student>>

Submitted in Partial Fulfillment of the

Requirements for the Degree

Master of Science

Supervised by

Professor <<Name of Biostatistics Primary Advisor>>

Department of Biostatistics and Computational Biology

School of Medicine and Dentistry

University of Rochester

Rochester, New York

<<Year>>