MStat, Biostatistics Project

PROJECT DETAILS

The Mstat, Biostatics project is one of the culminating experience of a student’s degree, typically centered on statistical skills used for a career as a biostatistician. All MStat, Biostatistics students are required to complete and successfully defend a project prior to graduating. Students must:

1. choose a project that coincides with their research interests
2. create a supervisory committee which consists of MStat, Biostatistics faculty
3. complete three project credit hours (roughly 135 hours of effort)
4. write a paper of publishable quality
5. present the project at a public seminar
6. successfully defend the project

OVERVIEW

The MStat, Biostatistics projects objective is to challenge students to think through new statistical methods, using it towards the analysis of a data set, and writing a report to another statistician which summarizes the statistical and clinical issues, explains one’s statistical logic and summarizes the statistical and clinical results. It is encouraged that the project includes, but is not limited to, mixed models, propensity score models, instrumental variables, methods of missing value imputation, a simulation study of Phase I study designs, or a special analysis for a crossover study. Students are not restricted to the above statistical model areas and should thoroughly discuss potential project topics with the student’s supervisory committee.

Prior to beginning the research project a student should have taken Math 5010, 5080, and 5090; at least one of the PBHLT 6106 or 6107; and Math 6010 or PBHLT 7120. This will ensure they have enough theoretical basis to be successful in using an advanced statistical technique applied to data.

It is preferred that students have had completed a regression class, Math 6020 or PBHLT 7130, and the Biostatistics seminar. However, it depends on the project and the student. It is advised to start thinking of potential projects and compose the supervisory committee no later than two semesters out from the anticipated graduating semester. This will provide adequate time to gain rapport with faculty who will be on the supervisory committee; and develop research project ideas that align with the specific research interests of the student.

FORM YOUR SUPERVISORY COMMITTEE

To begin, the student will want to identify potential faculty to work with on their project. The supervisory committee form must be completed with the appropriate signatures to determine which faculty have agreed to act as a committee member. The supervisory committee form must be turned into the academic advisor before a permission code will be distributed for
registration of project hours. The essential role of the supervisory committee is to provide feedback, guidance and mentorship on the project while also approving the research subject and judging the final defense. Potential faculty members eligible to be on a student’s supervisory committee can be found in the policies and guidelines on pages 5-7. Please see the academic advisor with any questions concerning the supervisory committee.

REGISTER FOR MSTAT PROJECT HOURS

Before registration of project hours the student must set up their supervisory committee and turn in the supervisory committee form, with the appropriate signatures, to their academic advisor. At that time, a permission code will be provided to them allowing them access to register for PBHLT 6970 – Statistical Investigation and Reporting (MStat Project).

Please be mindful of registration dates to ensure adequate time to obtain all of the needed forms and permission code for registration. Students must register for a total of 3 credit hours towards the research project before graduation. Note, the student must be registered for at least 3 credit hours, whether that be project credits, or an actual class, during the semester they plan to defend their project.

MSTAT PROJECT PROPOSAL APPROVAL

Prior to starting the MStat project, a student must prepare a concept proposal that requires approval by their committee. Guidelines on what the concept proposal should cover can be found here or on the website under MStat project forms where all other necessary forms can be found. A copy of the final proposal will be placed in the students file, thus submission of the proposal after approval must be submitted to the academic advisor. The Supervisory Committee will determine if the student is prepared to proceed to the formal project by written or verbal approval.

IRB APPROVAL

After approval of the project proposal the student is now ready to develop their research. Any and all approval of the content of the MStat project is an academic matter between the student and their committee. Depending on the given project, IRB approval may be required in order to protect the rights and welfare of the research subjects involved. Once IRB approval is established, please complete the IRB research proposal form and return it to the academic advisor. Please note, if IRB approval is not needed, the completion of the IRB form is required.

PROJECT DEFENSE

PRE-DEFENSE

Prior to scheduling the project defense it is strongly recommended to hold a pre-defense meeting with the supervisory committee. During the pre-defense, the student will present their progress, so that the committee can determine whether sufficient progress has been made in order to schedule the defense.

PUBLICIZE THE EVENT
Once the committee agrees that the project is sufficient to move forward with the final defense, the student will work with their academic advisor to schedule the time, location, and public posting of the defense. Please note, the supervisory committee must approve the final defense arrangements before the announcement is publicized. The date and time of the final defense must be widely publicized to the entire department at least ten business days prior to the date of defense. Please use this defense announcement to publicize the event and return this announcement to the academic advisor for dispersal.

**Final Defense**

For the final defense the student must defend their project satisfactorily introducing their research topic, covering their methods, results, strengthens and limitations and concluding findings. The oral presentation ranges between 30-35 minutes with questions to follow. A PowerPoint presentation is the most common platform used for sharing research findings. *Please note, the last day to defend in a given semester is the last day of classes, and the student must be registered for at least three credit hours during the semester they defend.*

Common misconceptions of defense requirements, include printing of a student's manuscript for their committee members; and/or serving of light refreshments. These are not requirements set by the Division of Public Health or the Graduate School and, thus, are not required during the final defense.

**Final Approval**

After the project defense, the Committee indicates on the Report of the Final Examination form whether the student has passed or failed. All committee members who are present at the examination should sign the form. In cases where the Supervisory Committee does not feel that the student has passed the defense, the committee will make appropriate recommendations for further courses, reading or research to address the deficiencies.

The final project must produce a publishable quality paper that is submitted to the supervisory committee with a copy given to the academic advisor in order to be deemed complete. A letter grade will then be assigned as set by the supervisory committee. The final paper is due no later than two weeks after the students defense date. Failure to submit the final paper within that time frame will result in delay of graduation.

**NOTE:** All project forms/Final Report must be returned to the academic advisor before the project can be deemed complete. Failure to do so may delay graduation.
**PROJECTED TIMELINE**

To assist students in anticipating how to navigate the completion of their MStat project, the following timeline is recommended.

<table>
<thead>
<tr>
<th>Task</th>
<th>Rough timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compose supervisory committee/ Address potential project topics</td>
<td>Two semesters out from the anticipated graduating semester (after the completion of Math 5010, 5080, and 5090; at least one of the PBHLT 6106 or 6107; and Math 6010 or PBHLT 7120.)</td>
</tr>
<tr>
<td>Prepare research proposal and submit to supervisory committee for approval</td>
<td>Two semesters out from anticipated graduating semester</td>
</tr>
<tr>
<td>Submit IRB application for IRB review</td>
<td>Two semesters out from anticipated graduating semester</td>
</tr>
<tr>
<td>Development of project and scheduling of committee meetings as necessary</td>
<td>Two semesters out from potential graduating semester and into final semester</td>
</tr>
<tr>
<td>Start written report and prepare for pre-defense of the oral presentation</td>
<td>Two semesters out from potential graduating semester and into final semester</td>
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<tr>
<td>Send draft of the written report to supervisory committee for review</td>
<td>Graduating semester</td>
</tr>
<tr>
<td>Present pre-defense with supervisory committee. Make any necessary edits and prepare for final defense</td>
<td>Graduating semester</td>
</tr>
<tr>
<td>Schedule time for final defense that is inclusive of the supervisory committees schedules and work with academic advisor for location and submit defense announcement</td>
<td>Submit defense announcement: 10 business days prior to date of defense</td>
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<tr>
<td>Final Defense</td>
<td>Last day of classes in the semester the student plans to graduate</td>
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<tr>
<td>Final edits of paper and final submission to supervisory committee and academic advisor</td>
<td>Two weeks after the student defends their project</td>
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*The MStat project, depending on the difficulty, can take roughly 2-3 semesters to complete.*