Dear:

I am writing to provide you with information regarding the Comprehensive Evaluation for Statistics majors. As you know, all Statistics majors must complete the evaluation as part of their major program. This letter contains information about the evaluation, including expected meetings and deadlines. I strongly encourage you to read it completely and let me know if you have any questions.

You are expected to read this letter before November 7, 2018 so that you can work on your proposal well-informed. Before this deadline, create a Git issue for yourself as a reminder to submit your initial comprehensive evaluation proposal. This also serves to verify that you have read the letter.

What is the Statistics Comprehensive Evaluation?

The evaluation is an opportunity for you to demonstrate your ability to undertake and clearly communicate results of statistical analyses through an individual project. You will demonstrate your proficiency with a range of statistical techniques and your level of mastery of computational and data analysis skills in order for us to assess whether or not you have met the learning goals for the statistics major.

For thesis writers in statistics, a preliminary version of your thesis serves as the comprehensive evaluation. For all other students, the comprehensive evaluation is based on an individual extension of your capstone project from STAT 495.

A successful evaluation involves the following:

- a proposal accepted by the Department
- time commitment to working on the evaluation over Interterm and into spring semester
- meeting with the Statistics faculty for feedback, assistance with issues, and for support
- submitting a well-crafted, fully reproducible evaluation project by the deadline.

Details about these aspects, as well as a reference timeline, are below. An example proposal and several example evaluation reports are available from the Department website.

Proposals

The proposal is due by 5:00 pm on the Wednesday before Thanksgiving break begins (in 2018 this is November 14th). Proposals are submitted via the Stat Comps Moodle course (like a course assignment), and feedback will appear there as well. Your proposal is very important as our evaluation of your submission is based on our understanding of what you are attempting as described in the proposal.

Your proposal is expected to contain these components:

- Name: Your name at the top of the proposal.
- Electives: List the elective courses you have taken so far for the statistics major. This includes any courses that would count towards the depth requirement in statistics.
• Off-campus courses: List any off-campus courses that you are counting towards the statistics major.

• Project Summary: In a few paragraphs, provide a brief synopsis of your STAT 495 project, including a description of the data you have access to, and what questions/issues you are tackling for the STAT 495 project (as in your revised proposals from STAT 495).

• Proposed Tasks: Describe 2-4 additional tasks that will allow you to demonstrate your ability to communicate statistical ideas, perform analysis, and (ideally) use a new statistical technique to address a question of interest to you. Your proposal should clearly identify how your additional tasks build upon (and thus are different from) the capstone project.

For thesis students, the project summary should be replaced by an updated thesis proposal, and the proposed tasks section replaced with a list of tasks related to the thesis.

We strongly recommend you view the example proposal available on our Department website.

Clearly stating what you hope to accomplish helps us evaluate whether the additional tasks are reasonable, provide guidance for references and materials that may be helpful, and help narrow your focus to well-defined tasks. Successful comprehensive evaluation projects usually have at least two main tasks, which need to be completed satisfactorily. In recent years, exposition of a new method and application to the data has been a popular task pairing due to how well it aligns with the learning goals for the major.

Example tasks that have been part of previously accepted proposals include the following:

• Extend the capstone project model in some substantial manner (with a twist beyond adding variables – change the question slightly, etc.)

• Integrate an additional data source to help inform your model

• Expository discussion and overview of a statistical or computational method with application to your data. You may find after your work on the project that the new method may not be appropriate for your data or setting. In this case, it is expected that you will still introduce the method (i.e. write the expository component), and then explain why the method is not appropriate for your data or application.

• Tackle a new aspect of the analysis – for example, add a spatial component to an analysis or add a new index for consideration as a predictor

• Deploy a Shiny app with visualizations related to your data

The statistics faculty in the department will review the submitted proposals, provide feedback and/or approval, and invite revised proposals as needed. Non-thesis writers must have approval for their proposal before work on their evaluations can begin in earnest.

If a revision is requested, it must be submitted before noon on the last day of classes in the Fall semester (in 2018, this is Wednesday, Dec. 12th). Please note that revisions are common for clarity – the statistics faculty want to be sure you have a reasonable set of tasks and that they understand what you plan to do. If you have received approval and started work on your evaluation, but find that you would like to change your proposal, please contact me (awagaman@amherst.edu) about further revisions.
Working on the Evaluation

To successfully complete your project, you should work on your submission over Interterm and into the spring semester. You should house all your materials on your private Github repository from STAT 495. Only the statistics faculty and you have access to this repo. You may need to copy over items from your STAT 495 project group repo. All submissions must contain reproducible analyses, so be prepared to submit all necessary source files and a clear list of steps needed to generate the analysis.

To assist you in formatting your submission, we have developed a template set of RMarkdown files. We strongly encourage you to use this template. The Department website for the Comprehensive Evaluation in Statistics and the Stat Comps course Moodle page have the link for accessing the installation instructions for the R package containing the example template file for your use in preparing your submission. The Moodle page also has links to some videos demo-ing use of the template. If you encounter any issues with installation and accessing the template, please let us know so we can assist you. Finally, if you want to enter in the link to the instructions manually, it is: https://github.com/Amherst-Statistics/acstats

As you work on your submissions, be sure to keep track of your sources and CITE appropriately within your document. Appropriate references must be included in your submission. Be sure to give credit where credit is due. If you need assistance finding appropriate references for your expository components, please ask! As always, you are expected to uphold the Amherst College Honor Code in relation to your submission. If you have any questions about Intellectual Responsibility as it relates to the comprehensive evaluation, please ask me for assistance.

Meetings and Support

As you proceed with your work, we expect you to meet with at least two statistics faculty members in the department to review your work and prepare for the submission. Meetings will be arranged towards the end of Winter break, to occur in the first two weeks of the Spring semester. The meetings are a chance for you to check-in about your progress, get assistance on issues, and ask for suggestions. You can always ask for additional meetings for assistance, and may be given a faculty member to contact as a point person for questions (matched based on the topics in your extension).

If you have suggestions for other support mechanisms, please let us know. We want to be sure you have the support you need in order to complete your evaluation successfully.

Submission Process and Feedback

Comprehensive evaluation submissions are due February 25, 2019 by 5:00 pm, via your private Github repository from STAT 495. You must also include your proposal with the submitted files for reference. Again, remember that all submissions must contain reproducible analysis, so be prepared to submit all necessary source files and a clear list of steps needed to regenerate the analysis.
After the Statistics faculty members in the Department evaluate your work, I will contact you and your advisor for Statistics about whether or not you have satisfied the evaluation before the end of Spring Break. If a second submission is required, you will receive further information about that process from me. Briefly, in that event, you will receive feedback on the first round with suggestions to improve for the second round. The second submission must include a point-by-point response to the feedback.

The official department policy regarding the comprehensive policy is enclosed. The deadlines above may also be found on the website, or in the reference timeline below.

The Statistics faculty in the Department would be happy to consult with you on issues that arise as you pursue your extensions/theses and prepare your evaluation submission materials.

Sincerely,

Amy S. Wagaman
Statistics Evaluation Advisor

Last Updated: 10/22/18

Reference Timeline: 2018-2019

1. Read the letter about the comprehensive evaluation. Before November 7, 2018, create a Git issue for yourself as a reminder to submit your initial comprehensive evaluation proposal.

2. The proposal is due via the Stat Comps Moodle page proposal submission assignment link by 5:00 pm on November 14th, the Wednesday before Thanksgiving break begins. After review by the faculty, revisions may be requested, and if so, the revision must be submitted before noon on the last day of classes in the Fall semester (December 12th).

3. Meetings with two statistics faculty members will be scheduled for the first two weeks of spring semester. See Doodle poll closer to time to claim a time slot! This is a chance for you to check-in about your progress, get assistance on issues, and ask for suggestions.

4. Comprehensive evaluation submissions are due February 25, 2019 by 5:00 pm. (Round 1)

5. I will contact you and your advisor for Statistics about whether or not you have satisfied the evaluation before the end of Spring Break.

6. Further details will be provided, as necessary, for those needing Round 2 for submission.