# **Graduate Student Statistical Consulting Service**

The Department of Mathematical Sciences offers free graduate student statistical consulting service, in the context of courses Math 550 (Statistical Consulting) and Math 540 and 541 (Capstone Seminar I and II). These graduate level courses aim to serve the university community, and instruct students in the art of statistical consulting.

#### Course structure

The instructor of these courses is Prof. Xingye Qiao in Fall 2019 and Spring 2020. These courses are offered every semester. The class meets one to two hours per week.

### For students

Students typically work on one to two projects per semester, either alone, or as part of multidisciplinary teams when appropriate. Students are expected to attend client presentations, to contribute to projects, to document their results and findings, to give regular project status updates to the entire class, to write a final report addressed to the client, and to give a final presentation to the entire class and to a group of faculty advisors.

### For prospective clients

We welcome inquiries from potential users on or off campus, though preference is given to those on campus. Faculty, postdocs, research staff, and administrators are welcome to contact us directly; graduate students working on doctoral or master's projects are also welcome but should first obtain the approval of their advisers.

Our standard operation procedure is to invite, after a preliminary interview, our "clients" to give a 20 to 30-minute presentation at one of our scheduled class sessions. This can be very informal, and it should give the background of the research problem in enough details for us to discuss where the quantitative problems arise. We encourage open discussion among the class. "Clients" are encouraged to give an example of the dataset (when applicable) and formulate the question they want to answer. Sometimes the consultation can be concluded in a single session, but more often than not, consultation includes further work done by the students. This is then carried out under Professor Qiao's supervision, possibly in collaboration with one or more colleagues. A written report is an expected outcome of the consultation. We ask the clients to document the contacts with our students and evaluate the consulting work in the end.

The time commitment for the clients include:

- An informal presentation in front of the class.
- A small group meeting with Prof. Qiao and the assigned student consultant(s).
- Periodic meetings with the student consultant(s) when necessary.
- (optional) Attend the final presentation made by the student consultant(s).

At present, fees are not charged for the use of this service. We view its function as primarily educational, for both the clients and the student doing the work. On the other hand, we cannot guarantee our results in any way.

All projects must be finished by the end of the semester. Occasionally a project can be year long and can lead to coauthorships or a student being employed by another department.

## Constraints and policies

There are some constraints on the kinds of problems we consider. First, the project cannot be too large. We prefer projects that can be completed by a small team in 1 to 2 months. Although we will do statistical computing when appropriate, we do not encourage projects requiring large data-crunching efforts.

Our policy is not to compete with other established statistical consulting services. In particular, these include the freely available <u>Statistical Consulting Services (SCS)</u> run by Dr. Mei-Hsiu Chen for researchers on campus. Typically, the SCS that Dr. Chen leads deal with projects with more advanced statistical needs, projects with larger scale and/or projects with potential for long term collaboration. Note that both our student service and the SCS are constrained by limited capacity. If you have statistical consulting needs but are not sure which service to seek, please contact either Dr. Qiao or Dr. Chen and we will be happy to coordinate and discuss the projects with you. Dr. Chen may transfer some projects to us, and vice versa.

In general, we do not offer assistance in the use of packages: our expertise is in the formulation of research questions in statistical terms, or in questions that cannot be easily addressed by standard software packages.

# Contact information

Recommended approach to contact the graduate student statistical consulting service is to send an email message to Professor Qiao, at qiao@math.binghamton.edu. Phone messages may be left at x72593, although these are checked less frequently.

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