Center for Statistical Training and Consulting
Michigan State University
293 Farm Lane, 178A Giltner Hall
East Lansing, MI 48824
Phone: (517) 353-9288
Website: http://cstat.msu.edu

CSTAT statistical collaborations on dissertations

Many graduate students approach CSTAT needing statistical help for their theses or dissertations. How much can or should a statistical collaborator assist with your analyses?

First, you need to make sure that your faculty advisor or guidance committee agrees that you are contacting CSTAT for help. We prefer that your advisor joins you and the statistician at least for the first meeting. This often helps to clarify misunderstandings before getting too far into the statistical work.

Then, go to the CSTAT website to schedule a meeting: https://app.cstat.msu.edu

You should come to your first meeting with a study protocol. See, for example, the Beginner's Guide to Research (https://cstat.research.msu.edu/resources). The better prepared you are, the more productive your meeting will be.

A CSTAT statistician will support your goals to achieve accurate statistical analyses, and help you learn about the statistical analyses to further your professional development.

Specifically, this could mean

- **Guidance with refining or updating the research plan**: It is preferable to schedule a meeting with a statistician very early in the research process. It is common that investigators may have study aims that cannot be accomplished within a specified time period, or the available data will not be able to answer the research questions, or there may be more sophisticated statistical methods that would answer even more relevant research questions in your research area.
- **Guidance with the statistical analysis:** Statistical collaborations can include guidance for a data management plan, selecting statistical methodology, developing a statistical analysis plan, and guide you toward appropriate statistical software.
- **Technical help:** Statistical collaborations can include technical work such as data cleaning, initial data analyses (to prepare for the planned statistical analysis), statistical software coding, creating tables and figures.

Frequently Asked Questions

Can the statistician collaborator qualify for co-authorship on a manuscript? **YES.**

Dissertations are sole author works. However, publications and presentations that derive from this work include co-authors who have significantly contributed to the publication. See, MSU's a guidelines to authorship (https://vp.research.msu.edu/michigan-state-university-guidelines-authorship) or a journal's policy on authorship. Statistical collaborations for manuscripts are encouraged in CSTAT.

Can the statistician collaborator perform statistical analyses for the dissertation? **YES (some).**

Dissertations are sole author works. Your domain expertise is crucial in correctly interpreting the outcomes of statistical modeling and the practical implications of the results. A statistician can assist with statistical analyses as noted above, possibly applying statistical models to data sets, help you understand the results, and may conduct model evaluations. *Any of these tasks must be in agreement with your advisor or guidance committee.* A statistician should not perform methodological research for your dissertation. You must be able to defend the content of your dissertation, explain why one method may be preferred over another, be clear about the strengths and limitations, and correctly interpret the results.

What does the statistician collaborator do?

CSTAT's statistician(s) will provide statistical services to achieve the project's objectives. This can encompass meeting with you to discuss the project; offering advice; recommending methods, resources, or software; contact and communication time (in person, phone, or online), as well as time outside of meetings needed for data analysis, report writing, or other tasks deemed necessary.