

# DIVISION OF BIostatISTICS

## Integrative Learning Experience Guidelines for MPH Students

*Effective starting Academic Year 2024-2025 and for students admitted  
AU20-AU23*

### APPLIED RESEARCH PROJECT

Research projects will be one of three types: (1) investigation of an applied research question with a significant statistical component; (2) evaluation of a statistical method in a new setting or comparison of a newly-proposed statistical model to a traditional method; or (3) development of a novel statistical software training manual that includes illustration of how to apply the software to analyze real data. In addition, the research project must integrate content from at least one area of public health outside biostatistics.

Potential topics must be discussed with and approved in advance by your advisor and second reader. All students are required to produce a high-quality written report and provide an oral presentation of their integrative learning experience. The presentation time and location will be advertised in the Division and other faculty, staff and students will be invited to attend. The advisor and second reader must receive the document at least two weeks prior to the presentation. The final document will be due to the advisor and second reader on the date all graduation materials are due in the Graduate School.

The outline below is relevant for students who select a research project that either includes investigation of an applied research question with a significant statistical component or evaluation of a statistical method in a new setting or comparison of a newly-proposed statistical model to a traditional method. For the #3 research project, students should consult with their advisor.

#### Abstract/Executive Summary

An abstract is a brief summary of approximately 250 words. The major components are: Purpose, Methods, Results/Outcomes, Conclusions, and Implications. An executive summary is an expanded version of the abstract and is typically one to two pages in length.

#### Table of Contents

The table of contents lists all the major topical areas of the document with the corresponding page numbers.

#### Introduction/Purpose/Background

The introduction should state the rationale for the project and introduce the background. What is the basic research question and why is it of interest? How does the research question relate to epidemiology, health behavior and health promotion, health services management and policy, or environmental health? Alternatively, what are the statistical methods being compared and why is this comparison of interest?

### **Literature Review**

A literature review is a synthesis of what researchers/scholars have written about a topic in the past. The purpose is not to list as many articles as possible, but rather to demonstrate your ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that you have identified for your project. The literature review should include relevant statistical methods used in the specific field of research, critiques of methods, and any gaps in the literature that you have identified.

### **Study Design**

What is the research question? What are the specific aims to be addressed by this research? What study design was used to answer the questions? Was that design sufficient? Any sample size or power consideration? What are the major threats to validity in the design? How might those threats be dealt with in follow-up studies?

### **Statistical Analysis**

What methods and models were used to collect and analyze data? What were the key variables of interest? How was the model identified? What statistical software was used to analyze the data? How the model was justified?

### **Results**

The findings should be presented in this section. Describe the results of the data analyses. All tables and figures should be referred to within the text. If a table or a figure is used from another source there needs to be a reference citation. If possible, tables and figures should be placed within the text; larger tables and figures may be included in an appendix. All tables and figures should have appropriate titles and legends.

### **Discussion**

Discussion of the findings (interpretation of the data) as they relate to the project questions, goals, and objectives should be presented in this section. Findings should be described in context as they relate to epidemiology, health behavior and health promotion, health services management and policy, or environmental health. Any potential drawbacks of the method should be discussed and propose future research directions should be proposed.

## **References**

All literature and personal communications cited in the proposal must be listed in the reference section. References should follow a standard citation format.

## **Appendices**

Anything not included in the text of the project report that is important for the understanding of the design, implementation, or conclusions of the project should be attached as an appendix (e.g. tables, plots, simulation results, etc.) All appendices must be referred to within the text of the project report and must be included as part of the table of contents.

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### **Additional Written Report Requirements**

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1. Report should be about 15-20 double-spaced pages in length not including tables, figures or appendices.
2. Hard copy of the report should be single or double-side printed on white paper (8.5 x 11 inches) and bound or stapled.
3. For text, 12 point font should be used; however tables and footnotes may be in 10 point font if necessary.
4. The Title Page should include the title of the project, the student's name and degrees, the committee members' names, The Ohio State University, the month and year of the final project.
5. Page numbers should be inserted on each page except the Title Page and the Table of Contents.
6. All Figures and Tables must be numbered and be accompanied by descriptions that allow the reader to understand their content without referring to the text, and all appendices must be labeled appropriately.
7. References should follow a consistent format.
8. A hard copy and an electronic copy of the final approved report should be provided to your advisor and second reader, and the Office of Academic Programs and Student Services at [CPH-Graduation@osu.edu](mailto:CPH-Graduation@osu.edu).