

Capstone Project/Senior Honors Thesis Information/Guidelines

Completion of a Senior Honors Thesis can be a major undertaking and two things are of prime importance: 1) Interest in the chosen topic and 2) organization. These are mentioned below, along with other items to consider. The overall experience of completing a senior honors thesis should prove extremely valuable for students who plan to pursue graduate study. Remember that most applicants to graduate programs will have a high GPA and strong GRE scores. You need something that will help set you apart from the crowd. Completing a senior honors thesis, as well as publishing your work, will be a great start!

Interest: You will spend considerable time working on this project, so it is very important that you are sincerely interested in what you are studying. For some students, this project will allow them to learn more about a topic that has always been of interest to them. For some, it may be something completely new but appears exciting. For others, it may be the start of a lifelong pursuit or research within a given area of study. Regardless, make sure that you are really passionate about what you plan to do. If you're not, the experience will not be enjoyable.

Organization: Preparing to write a scientific review article or completing a research study requires a significant amount of work. You need to be organized to get this done successfully. Draft an outline of what you will do. Consult with your faculty mentor and fill in all the details. Be specific. Then get started. Stay focused. Don't deviate. Finish strong.

Timeline: As part of being organized, you need to construct a detailed timeline of what you will do and when. You have limited time, so whatever you do, do not procrastinate. Just getting started is an accomplishment. For some people, beginning is half done!

Topics: There are numerous topics of interest within the field of health sciences, spanning many disciplines. Find something that you are interested in and then identify a faculty member who has enough knowledge and expertise within that field of study that they can appropriately mentor you. Just as you need to have interest in the chosen area, they too should have interest and must have some degree of expertise. If not, the quality of the project will suffer.

Review Article Basics: A scientific review article does not contain original data that you collect, analyze, and report. Rather, a review article summarizes the studies that have already been done. These typically contain an overview of the topic, the findings from a variety of studies done within the field of interest, a critical review of the prior work, as well as directions for further work in this area (i.e., what remains to be done to enhance the current understanding within the

field). A good review article will involve multiple literature sources (often more than 100 references) and will include a concise, yet detailed analysis of the current state of knowledge within a given area.

Research Study Basics: A research study involves the development of an idea—typically based on a prior review of literature and an understanding of what is known and what remains to be discovered (you are working on the latter). You then determine the best design to answer your question, spend time perfecting the research protocol, and get started. This may include writing an IRB application to include human subjects (or an IACUC application if using animals), learning how to collect data, actually collecting data, analyzing data, figuring out what the data mean (interpretation), creating tables and figures to display the data, and writing the manuscript to tell everyone what you did, how you did it, and what you believe they data are indicating. Your faculty mentor will be invaluable as you navigate through this process. In many cases, they may have a larger project that is already planned or underway and you can simply take a piece of that larger project for your own. This is a much more reasonable expectation given the timeline of the senior honors thesis.

Format and Length of Manuscript: This will differ between review articles and original, data-driven articles. Typically, but not always, review articles are longer than original articles. Within each type, length can certainly vary. For example, some review articles may be relatively short (e.g., 15 pages, double spaced, 12 pt. font, 1-inch margins), while others can be 30+ pages. Regardless, the message quality must be very good. The scope and length should be agreed upon by the student and faculty mentor prior to commencing the project. For original, data-driven articles for which you have completed a research study and are now writing up the results, manuscripts are usually in the 10-15 page range, although some may be shorter and others longer. Regardless, original articles should include the following sections, according to the journal guidelines: Introduction, Methods, Results, Discussion, Conclusions, References, Tables, Figures, Acknowledgements (exact title and order of section will vary based on journal).

Keep in mind that *your name* will be on the article and you always want to present yourself in the best possible way. Therefore, only submit articles that are your very best work!