

# Undergraduate / Honors Thesis Guide

## Who is this guide for?

- 1) *For students enrolled in The College of Agricultural and Life Sciences Honors Program,*
- 2) *For students pursuing Latin Honors who are not in the CALS Honors Program,*
- 3) *For students who may not be seeking honors, but wish to do a thesis as an undergraduate.*

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***An honors thesis is a written report of a creative, scholarly project dealing with research, teaching, or outreach. It has clear objectives and conclusions, and involves original, independent work of the student.***

***\*\* If you are in the CALS Honors Program – see the CALS Honors Program Director for all current guidelines & deadlines that apply to you! \*\****

# 1. Should I do an Undergraduate Thesis?

Yes, if you:

- are in the CALS Honors Program or want to do a thesis (Honors or not)
- like to work one-on-one with distinguished faculty on a project catered to your needs
- can devote up to several hours per week on your project for a year
- are self-motivated and can manage your time effectively
- wish to significantly enhance your graduate or professional school admission chances
- have passion and determination to pursue your project
- wish to graduate from UF with *magna* or *summa cum laude* Latin Honors

Benefits:

- The most important benefits of an undergraduate thesis derive from the close working relationship you can develop with a faculty advisor.
- Sharing your passion for discovery with a faculty member is a priceless experience that will benefit you for a lifetime.
- Another more immediate benefit is the outstanding letter of recommendation (for graduate / professional school / jobs) you can expect from a faculty mentor who has gained respect for you as a scholar and devoted learner.

You do not have to be enrolled in the CALS Honors program to write an Honors thesis. You can seek help from your Departmental Honors Coordinator (Dr. Katie Sieving) or (if you are in the program) the CALS Honors Program office - McCarty Hall D - Room 2002.

Important information for the undergraduate thesis student to seek:

- How to apply for the University Scholars Program and other opportunities to obtain funding for conducting your work;
- Course credit – for CALS Honors students there is a course entitled "Honors Project" in each CALS Department (XXX 4909) to be used during semesters when Honors Thesis work is conducted. Non- CALS Honors students can enroll in the equivalent WIS 4905 (in WEC).
- Finding a research advisor / mentor – CALS Honors and the Coordinators can help!

***Conducting an undergraduate thesis is a serious undertaking, and the role of planning and preparation cannot be understated! You need a full year at least!***

An undergraduate thesis requires a substantial commitment on your part because of your full course load. Motivation and determination are as important as writing and analytical skills, and finding a good mentor who actively helps you is also critically important.

## 2. What is involved in planning & conducting a thesis project and writing a Thesis?

Envision a three-semester process that follows these basic steps:

1. Evaluate your goals against the guiding information in section 1 (see above)
2. Discuss how to get started with your Departmental Honors Coordinator (list available at [www.cals.ufl.edu/honors](http://www.cals.ufl.edu/honors)) and/or the Honors Program Director.
3. Based on the advice of the Departmental Coordinator and Program Director, approach a UF faculty member about being your advisor, and discuss potential projects in your area of interest. You may consider talking with several faculty members, in fact.
4. Decide on a faculty advisor and outline a specific project **with** him or her.
5. If technical training is required to prepare you to do the thesis work, consider taking a course, working part-time for the professor, or otherwise acquiring the skill set needed for the project in advance of performing thesis work.
6. By the end of your Junior year – at the latest – write a thesis proposal with the help of your advisor AND following the CALS thesis proposal guidelines.
7. Assemble needed materials and seek funding for your work (if needed). For example, the University Scholars Program ([www.scholars.ufl.edu](http://www.scholars.ufl.edu)) supports about 20 CALS thesis projects annually. Successful proposals are awarded up to \$2500. Contact the Honors Program Director and your faculty mentor for more information on funding.
8. Begin the project and enroll in either Honors Project (CALS Honors students) or XXX 4905 (non CALS Honors students); most students will enroll for 3 credits during one or more semesters.
9. Analyze your data, write your thesis, and have it approved by your advisor, departmental committee (if any), and the Honors Program Director in the CALS Dean's office. The following two sections of the guide are suggestions for writing a 1) thesis proposal and 2) Honors thesis. Please note the deliberate use of the word "suggestions" - each department and faculty member is different, and ***the final authority on proposing, conducting, and writing your project is your faculty advisor.***

## 3. Undergraduate / Honors Thesis Proposal Guidelines

See Section 4 (thesis Guidelines) – ***the proposal is exactly the same as a thesis but without the Results and Discussion sections.*** The proposal presents a well-thought out conceptual and methodological plan for a study. Writing a good proposal SIGNIFICANTLY reduces the stress of writing the thesis!!

## 4. Undergraduate / Honors Thesis Guidelines

Each section of the thesis has specified content and form (see below), and each serves an important function in communicating your ideas and results in a way that is clear and convincing. The following format was developed for biological research studies, but it can be used for social science projects, or those involving teaching methods or community outreach. Always consult your faculty mentor on thesis format specifics – they know what works in their disciplines.

A note on publication: Your thesis may be publishable or contribute to a publication – this is a matter that only you and your faculty advisor can decide. If you received funding from the University Scholars Program or other sources, there are stipulations on publishing, presenting, or submitting a final report to the program; they may not dictate the format described in this guide. If you are publishing your thesis as a journal article, you should format your thesis in accordance with the “Instructions to Authors” of the particular journal. Generally, these are posted on the journal’s web site or included in a volume of the journal – ask your faculty advisor.

For journal articles with multiple authors, see the CALS Honors director or Departmental Honors coordinator to determine how best to present the work that you contributed to the journal article.

In addition to this guide, you are encouraged to consult the following references for writing a thesis:

1. CBE Style Manual Committee. 1994. Scientific style and format: the CBE manual for authors, editors and publishers. Sixth Edition. Cambridge University Press, Cambridge, UK. [CBE = Council of Biology Editors].
2. Booth, W. C., G. G. Colomb, and J. M. Williams. 1995. The craft of research. University of Chicago Press, Chicago, Illinois, USA.
3. Kogan, N. 2002. Conquering your undergraduate thesis. Natavi Guides, New York, NY.

### **Suggested format for the Undergraduate / Honors THESIS**

**TITLE PAGE:** Choose a simple yet informative title for your project. Include your name and contact info on the title page, as well as your department, your advisor’s name, and CALS Honors Program. For theses submitted to the UF Honors program for graduation with *magna* or *summa cum laude* Honors, there are two cover sheets to complete – they can be downloaded from the CALS Honors website ([www.cals.ufl.edu/honors](http://www.cals.ufl.edu/honors)).

**ABSTRACT:** As with the proposal, the thesis abstract is simply a brief synopsis of the thesis – 1 paragraph of about 200 words in length. It contains no citations. Being a summary, it is often best to write it *last*. Include a few sentences on each of the main sections of the proposal – Introduction, Materials and Methods, Results, and Discussion. It should culminate with the main take-home message of the thesis.

## **INTRODUCTION**

***Use sub-headings to divide this into logically ordered parts!***

A good introduction conveys to the reader that you've done your homework and have a good grasp of the topic addressed by the project. It can be written only after distilling the essence of many recent, relevant articles and book chapters on a given topic. At minimum, the Introduction will (1) introduce your subject area and its importance to the reader, (2) justify your study by showing how it fits into the larger topic area and fills gaps in the current state of knowledge, and (3) state your objectives and/or hypothesis clearly.

The introduction is generally 1 or 2 pages long, and includes several citations of relevant literature. It proceeds in a logical sequence from general to specific. In other words, the first paragraph or two outline the general background and importance of the topic, the next paragraph(s) get more specific as to what is and is not known about the topic, and the last paragraph(s) culminate with a specific hypothesis or objective that logically follows from the preceding information. After the introduction, the reader should understand 1) the importance and main tenets of the topic area, 2) the specific question your project will address, and 3) why you want to address it. As you read journal articles on your topic, you will begin to see this structure emerge.

## **MATERIALS AND METHODS**

***Use sub-headings to divide this into logically ordered parts.***

This section should contain the minimum amount of information needed to fully understand how you produced your thesis, such that someone could *duplicate your project* after reading this section. It should convey confidence to the reader that your project was conducted in a rigorous and standardized way to allow your objective statement to be realized, and that the methods used were appropriate. You must describe the study sites, subjects (plants, animals, people), instrumentation, and other resources utilized. Specifics are important as they create confidence in the reader that you've thought things through. How were animals/plants observed, treated, or captured? What questions were asked on your survey form (for human subjects)? What software was used to design the learning exercises for a course, and why did you choose it over other alternatives? Statistical designs and tests used to analyze data are extremely important as well, and often take the form of a separate subheading in the methods section.

**RESULTS:** This section simply states the facts of what happened during your study in an orderly fashion; the implications of these facts are reserved for the next section, the discussion. The point is to convey your findings simply and clearly, *referring to tables or figures, photographs, or other items of documentation that support your statements*. Use subheadings, especially if there were a lot of different stages or analyses. Arrange subheadings in an order that parallels the Materials and Methods section.

**DISCUSSION:** This section should bring the thesis full circle; linking your results back to the objective put forward in the introduction.... do you accept or reject your hypothesis? Was your objective realized, and if so what does it mean? Also, it should relate your results to those of other papers on the same subject... do your results agree or disagree with the literature? More specifically, you will try to integrate individual results to tell a complete story of what happened

and why it happened. In contrast to the Introduction, work from the specific to the general implications of your work. First, discuss the main, most important and definitive conclusions based on your findings, and their interpretation. Next, discuss the meaning of any secondary (minor) results you obtained, and relate them back to your main results and overall objective. Next, discuss any confounding effects or problems that may have influenced the results obtained or their interpretation [every project has problems]. Sum up how your project fits into the wider context of the topic you introduced at the beginning of your introduction and then finish it off with a summary (Synthesis and significance) – the take-home message of your project, and what it means to science, the reader, and society (full circle).

**REFERENCES CITED:** List (in proper, consistent format) only the sources directly used in writing the thesis – this section is not a bibliography on the topic. Everything listed here must be CITED in the text somewhere. The following formats for listing sources are common, but styles vary among disciplines:

***Book chapter: Author(s), year, chapter title, book editors, book title, page numbers of chapter, publisher, city of publisher.***

Clarkson, D.T., and A.W. Robards. 1975. The endodermis, its structural development and physiological role. In: [J.G. Torrey and D.T. Clarkson (eds.)] The development and function of roots, pp. 415-436. Academic Press, New York.

***Book, specific pages in book: Author(s), year, book title, page numbers used, publisher, city of publisher.***

Vaughn, K.C. 1987. CRC Handbook of plant cytochemistry, Vol II: Other cytochemical staining procedures, p. 8. CRC Press, Boca Raton, Fla.

***Journal Article: Author(s), year, paper title, journal name, volume number, page numbers.***

Peterson, C.A, M.E. Emanuel, and G.B. Humphreys. 1981. Pathway of movement of apoplastic fluorescent dye tracers through the endodermis at the site of secondary root formation in corn (*Zea mays*) and broad bean (*Vicia faba*). Can. J. Bot. 59:618-625.

***Web Site: Author(s), year, title of page, web address (http://.....), date accessed. Note the author is not always listed – you may have to try links such as “About us” or “Contact us” to discover who or what organization has published the site.***

US Library of Congress. 1990. A Country Study: Uganda [Internet]. <http://lcweb2.loc.gov/frd/cs/ugtoc.html>. Date accessed: Dec 3, 2007.

See the CBE manual for citation styles of other types of references (referenced in next section).

**SUPPORTING FIGURES/TABLES:** Include any figures, tables, photographs, illustrations, or other documentation that are actually referenced in the methods, results, or discussion sections of the thesis, in the order they are referenced. All should have clear, concise captions that allow the item to convey its basic meaning without the need to go back and read the supporting text. One table or figure per page.