Student Guide to Honor Theses in the Department of Psychology and Neuroscience

Lewis O. Harvey, Jr.

15 November 2021

Contents

1 Preface						
2	The	Thesis Content and Formatting				
	2.1	General Guidelines	3			
	2.2	Final Thesis Copy (Defense Copy)	Ę			
	2.3	Archival Thesis Copy	١			
3	Get	ting Started	6			
	3.1	Developing a Research Question	6			
	3.2	Literature Search	6			
	3.3	Writing	6			
	3.4	Tips on Meeting Deadlines	7			
4	Hor	Honors Thesis Defense Committee				
	4.1	Working With Your Advisor	8			
	4.2	Choosing Your Honors Thesis Committee Members	8			
	4.3	Communication With Your Committee	8			
5	The	esis Defense Presentation	ę			
	5.1	Purpose	ę			
	5.2	Scheduling the Defense	ę			
	5.3	Guidelines and Formatting the Defense	ę			
	5.4	Defense Agenda	Ć			
	5.5	Outcome of Thesis Defense Meeting	10			
	5.6	Pandemic Considerations (2021)	10			

6 Honors Designations			11
	6.1	How the Decision is Made	11
	6.2	Arts and Sciences Honors Council	11
7	Ref	erences	12
$\mathbf{A}_{]}$	ppen	dix A: Sample Title Page	13
$\mathbf{A}_{]}$	ppen	dix B: Deadlines	14
	Defe	ending Thesis in Spring 2021	14
	Defe	ending Thesis in Fall 2021	15
	Defe	ending Thesis in Spring 2022	16

1 Preface

The Honors Program at CU Boulder was established in 1931. It is the fourth oldest honors program among all public and private universities in this country. The mission of the Honors Program is to provide special educational opportunities for academically advanced and highly motivated undergraduate students by working closely with faculty mentors having special expertise in the student's area of interest.

In order to graduate with Latin Honors in the College of Arts and Sciences, students must fulfill three demanding requirements:

- 1. They must maintain a high Grade Point Average (GPA) to be eligible for Honors. But a high GPA is not sufficient to graduate with Honors here at CU, as it is at some universities;
- 2. Students must also complete an Honors Thesis. In the Department of Psychology and Neuroscience the thesis is based on an original, independent, empirical research project, done in close collaboration with a faculty mentor, usually taking one year or longer to complete;
- 3. Finally, the student must successfully defend their written thesis before a committee of at least three faculty members. This oral defense is rare among honors programs at other universities, and makes the Arts and Sciences Honors Program at CU Boulder one of most rigorous in the country.

Based on a joint consideration of their GPA, the quality of their written thesis and the quality of the oral defense, students are awarded one of three levels of Latin Honors:

- cum laude: "with praise";
- magna cum laude: "with great praise";
- summa cum laude: "with highest praise"

This guide has been adapted from Writing and Defending an Honors Thesis in IPHY: Student Guide written by David Sherwood, Department of Integrative Physiology and provided to us by Janet Jacobs, Director of the Honors Program of the College of Arts and Sciences, on 2 December 2016. It has been revised and edited to make it appropriate for honors students in the Department of Psychology and Neuroscience by three successive Directors of the Department Honors Program: Richard K. Olson, Mark A. Whisman and now (this version) by Lewis O. Harvey, Jr. Be sure to check the Arts and Sciences Honors website for up-to-date information about deadlines and procedures: https://www.colorado.edu/honors/graduation.

2 Thesis Content and Formatting

2.1 General Guidelines

An Honors thesis should follow the general format of a peer-reviewed publication in your research area, but should contain a more extensive background and discussion section, as well as include justification for the formation of your hypotheses and predictions. The Publication Manual (7th edition) of the American Psychological Association is a great guide to preparing all varieties of scientific papers, not only in psychology (American Psychological Association, 2020). Your thesis should include the normal parts of a journal article:

- 1. **Title** separate page;
- 2. **Abstract** separate page;
- 3. **Introduction** section that includes an extensive background and literature review relevant to your topic. The *Introduction* ends with a clear hypothesis or question that your thesis will answer;
- 4. **Background** optional section if you want to make your *Introduction* short. The *Background* section would then contain your review of the literature.
- 5. **Methods** section with subsections (e.g., *Stimuli, Subjects, Materials*, etc., as appropriate);
- 6. **Results** section with figures, tables, and/or a schema related to your results;
- 7. Discussion section that evaluates your results in terms of the questions raised in your introduction;
- 8. **Conclusion** section that is brief and summarized your major findings and conclusions (optional), and **Reference** section bibliography list that starts on a new page.

The entire thesis should be double-spaced.

If you are using R and RStudio for your analyses and graphs, you should consider writing your whole thesis using R Markdown in RStudio. R Markdown allows you to write text, include graphs, tables and other results produced by R code, and cite references all in one document that can then be knitted together into a beautiful pdf document ready for submission to the Honors Council. This *Student Guide* was written in R Markdown with RStudio. There are R Markdown templates available for producing thesis-formatted documents: https://rmarkdown.rstudio.com. We have a thesis template specifically for Psychology and Neuroscience students that you can use as a starting point. Contact the Director of Honors for a copy.

In your thesis, you should communicate information in a succinct professional writing style like in a peer-reviewed publication. You should not use colloquial or "lab" jargon. Be sure to check your grammar and punctuation! Consult the APA Publication Manual (American Psychological Association, 2020) early and often!

The thesis should flow from one section to another. Your introduction should set up the need for your project by identifying a gap in our knowledge, your methods should clearly demonstrate how you will fill that gap, your results should show how the gap was addressed and/or filled, and your discussion should expound on the results and show how your study leaves room for other studies and creates more gaps to be filled and questions to be answered. Every section of your thesis should begin with "hints" that keep the reader informed about what is coming and why. There should typically be no direct quotes from previous research; paraphrase ideas and give citations for all thoughts, ideas or results reported. Whenever you make a statement of fact, you must support this claim using references to previous research.

Use in-text citations at the end of every sentence that references another scientist's work following the format of a peer-reviewed publication in your research area Correll et al. (2020). Et al. (abbreviation for et alii (masculine), et alae (feminine) or et alia (neuter) is Latin for "and others") Et al. should be used in in place of authors names when citing research that has more than three authors. Zotero, Mendeley, and EndNote will correctly format citations for you (see References below for more details).

2.1.1 Title Page

The Title page presents the title of your thesis, your name, department and university, the date of the thesis defense, your advisor's name, and the name, department and role of each of your committee members. See

example in Appendix A. Do **Not** put your title in all capital letters! It should be in 'title case' with the major words capitalized, as is shown in the sample title page in Appendix A.

2.1.2 Abstract

The Abstract is a brief summary of your research that includes 1-2 sentences of introduction, 1-3 sentences of methods, 1-3 sentences of results and conclusions, and 1-2 sentences for how the research impacts the field at large. The abstract should not exceed one page (250 words).

2.1.3 Introduction

In this section of the thesis you introduce the field that you are studying and clearly demonstrate a need for your research (i.e., an open gap or question), and tie this to a rationale for choosing your topic. The Introduction should be broader than it is in typical peer-reviewed empirical publications, and must be accessible to people who are not actively conducting research in this field, like your non-Psychology and Neuroscience committee member and the members of the Arts and Sciences Honors Council. You should introduce all concepts and define all technical terms and abbreviations for non-expert readers. The purpose of the Introduction section is to lead the reader to your hypotheses and predictions, so that readers understand why you are asking certain questions, and why you are predicting certain results. Be sure to clearly state your research question, including hypotheses and predictions, giving justification for why you think what you think. If you have a large amount of background information (i.e., more than 2-3 pages), provide a short general introduction ending with your hypotheses, and follow up with a *Background* section after this brief introduction.

2.1.4 Methods

This section contains a detailed description of how you performed your study and how you analyzed your results. Using past tense, include everything necessary to completely replicate your experiment, from the statistical program you used to analyze your results, to the equipment used. For equipment and reagents provide the name of the company from which they were purchased and the location of the company's headquarters. Typically you describe in separate subsections your procedures, your stimulus materials, your research participants (subjects), etc.

2.1.5 Results

Using past tense, succinctly report your results using text, figures, tables and schemata. Be sure to provide supporting statistics for the results you present. Do not discuss or analyze results further in this section! If you include figures, do not report results in legends of figures or tables or simply restate numbers and data points. Figure captions should include a first sentence that clearly indicates what results are shown in the context of your research question, followed by a brief statement of any context for necessary to understand the results (e.g., the treatment applied or the relationship displayed, etc.), the subjects (and sample size) studied in the experiment, a key to any abbreviations used, and statistical test annotations. Look at figures in peer-reviewed publications in your research area for examples to work from." Refer to all tables and figures in the text (e.g., see Table X), and also indicate the main "take home point" about the figures/tables in the text.

2.1.6 Discussion

In this section, summarize and interpret results, discuss potential strengths and weakness of the results in a constructive manner, talk about other studies that either contradict or corroborate your results, and present possible future research. Do not list your results in any detail again; you may refer to figures/tables to

selected cases. Be sure to highlight how your data provides some novel insight. It is important to have a structure to your discussion; it often works well to discuss your overall findings first, and then individual findings in the same order as in the Results section.

2.1.7 Conclusions

This section has a brief, concise statement of the most important findings of your research and how they are immediately interesting to the audience. This section is optional, because you may be able to cover these topics in your discussion.

2.1.8 References

List all previous literature/studies that you read, used and cited in your paper. Do not wait to compile your reference list until the last draft! For every draft you submit, your reviewers will want to see the list of research and documents you are relying on. The purpose of the reference list is to demonstrate to your readers that you have read enough to be a credible researcher and lend authority to your study and findings. Follow the format of citations used in peer-reviewed publication in your research area (e.g., APA 7), and keep it consistent. We strongly recommend that you to use a reference management program on your computer such as Zotero, Mendeley, or EndNote to manage your bibliography and citations.

https://www.zotero.org

https://www.elsevier.com/solutions/mendeley

https://www.endnote.com

Zotero and Mendeley are free; EndNote is a commercial product. All three programs allow you to insert citations while you write and to format the citations and bibliography in variety of journal styles, including that of the widely-used American Psychological Association style. Zotero is especially well-integrated with RStudio and R Markdown.

2.2 Final Thesis Copy (Defense Copy)

You should give each member of your committee a copy of the thesis version you intend to defend at least one week prior to your defense so the committee have a chance to read it thoroughly. Once you've defended, email the PDF version of this defense copy (with only minor edits suggested by your committee) to honors@colorado.edu. If you defend prior to the last day, you should send in your defense copy as soon as you defend. If you defend on the last day, you can defend as late as you and your committee wish, but you must send a copy of your defense to honors@colorado.edu by 16:00 (4:00pm) of that last day. Remember, your defense copy is the one you submit to your committee members on the day you defend. Do not modify your defense copy after your defense. If your committee suggests changes, you may make those changes if you wish and submit the updated version to CU Scholar as your final copy; however it is the defense copy that is used to determine Latin honors. See https://www.colorado.edu/honors/graduation#the_defense_copy-104 for more information.

2.3 Archival Thesis Copy

This copy of your thesis will be submitted after your defense (and includes any changes requested by your defense committee) but remember that your Honors designation is recommended to the Honors Council by your Honors defense committee. This recommendation is based on the defense copy of your thesis. Upload the final copy of thesis to the Undergraduate Honors Theses repository on *CU Scholar* by 11:59 pm on the published date (https://www.colorado.edu/honors/graduation/cuscholar). See https://www.colorado.edu/honors/graduation#the final copy-104 for more information.

3 Getting Started

3.1 Developing a Research Question

Great research questions address gaps in the current literature, and are able to build on previous research. It is perfectly okay to follow the suggestion for a suitable research question/project from the advisor you choose, and later increasingly take "ownership" of the project as you conduct your research. In other cases, it may be appropriate for you to develop a research question more independently before starting the research. In that case, you should seek the feedback of your advisor on the feasibility of successfully pursuing your idea as an Honors project with its limited time frame. In either scenario, you should conduct several thorough literature searches (see the section below for more details), and pay attention to aspects of phenomena that you notice as needing further investigation. This process will help you ascertain where the gaps are in the current literature, which makes for a more interesting thesis topic! It usually takes quite a bit of reading to understand the "dialogue" that has been taking place in any sub-discipline of science, but it may help to begin your search by looking in topics that interest you and pertain to your advisor's work. Reading recently published papers (including reviews!) will show you how phenomena are currently investigated, but be sure to expand your reading frame to include classic papers in your field, to understand how the scientific investigation has developed through the years. You may find a topic and read extensively about it, and find that there are a number of questions that have not been addressed. Alternatively, you may consider a phenomenon and number of questions that haven't yet been explored yet. The key to a good research question is that it attempts to describe and address a gap in the literature, but builds on previous research in a logical and creative way.

3.2 Literature Search

Your literature searches may be one of the most important steps to crafting an interesting and novel study that will garner attention from your committee and the research community! After discussing possible projects with your advisor, utilize multiple online journal searches through databases (such as Web of Science, Google Scholar, PsycInfo, CU Libraries Chinook) to find relevant papers. It is especially helpful to find related reviews of the current literature to get a better handle on how research is being done, then focus in on relevant studies discussed in the review. Additionally, in the Web of Science, you can perform "forward" and "backward" searches for studies that are cited by, or cite, any given research article, which often helps to further direct your searches. Be sure to continually comb the literature for related papers to add to your understanding of the topic, even after you have started your work. Use the auto-update feature in the search engine to be informed about recent publications in the field. In your written thesis, you must cite an appropriate number of references for your field, and references that bolster your credibility as a researcher. Use both classic and newer studies to illustrate and authenticate your own research. All measures will allow you to better understand your research area, grasp the meaning and importance of your own results, and compare your results with those of other authors.

3.3 Writing

Start early! We highly recommend you take PSYC 3111, Research Methods, the semester before you defend your thesis or earlier. See Appendix B for timelines. Writing the thesis may seem daunting at first, because you are indeed starting a long process, but do not fear! The thesis should not be written in one sitting, but should be worked on over a longer period of time. You should begin by keeping "notes" and outlines of each section, especially of your methods, so that as you gain more information, you can then fill in your outlines with more detail. If you begin by building a logical structure of your study, with clear research questions and hypotheses, you will be able to identify those portions that "don't fit" or where further thought to fill gaps is needed. Be sure to note all assumptions or premises of your arguments, as these are of particular interest of your committee: everything you do should have a well thought out reason! The thesis is not just a summary of what you have seen previously, but a novel piece of your own work and ideas - these will be

developed through your drafts. It is also important to note that your thesis is typically not written about what you originally set out to find, but to describe the results you actually obtained (rather than what you might have hoped to find!). In your introduction, formulate the question you actually answered. Every section should prepare the reader to understand and appreciate the results and conclusions you discovered. If you find a non-significant result where you had expected something significant, prepare your readers in the introduction (and throughout the thesis) for the possibility that there is another phenomenon acting on the system. Every section should contribute to a single, unified presentation of the actual findings from your study as an answer to your research question.

You may find that making one (or a series of) outline(s) helps you develop your ideas, a logical flow of those ideas, and thus a convincing argument. The thesis should tell one logical story, and everything in your thesis should support that story. Develop an outline of ideas that allows you to show this (that is, your outline should clearly show how one idea connects logically to the next one, and so on). Once you have your final outline, fill in sections as best suits you! For example, it may be best to write your Methods section as you carry out the research, such that no important details are left out! You will likely be surprised about how much time is devoted to describing how you conducted your experiment. Additionally, before writing the Results section, remember that the goal of the thesis is to demonstrate one logical flow of information, and thus be sure to take time to carefully order all of your graphs and tables before you start writing this section.

3.4 Tips on Meeting Deadlines

Spend time making an initial in-depth schedule when you begin the thesis writing process, including the official deadlines from the Honors Program. Schedule personal deadlines with goals early in the semester to allow a time buffer in case problems or "hitches" are encountered, which occurs almost invariably. Try to meet with your advisor once a week, as well as consider meeting the other defense committee members, or the Writing Center in Norlin Library to garner further feedback. The more feedback you are able to get, the better your thesis will be. Write all your deadlines in a day planner at the beginning of the semester so you know what's due and when. You can revise these as needed as you go along. See Tables 2 and 3 for suggested timelines.

The most important deadline, other than defending your thesis before the deadline in the semester, is the registration with the Honors Council your intention to defend your thesis during the specified semester. You register the semester before you defend. Usually, but not always, you defend your thesis the semester you graduate. You must defend before you graduate. Once you receive your Bachelor degree you may not defend and you are no longer eligible for honors.

You must register your intent to defend your these using this on-line link: https://www.colorado.edu/honors/graduation#registration_and_deadlines-104. Submitted with the form you include a prospectus and a timeline. This document is usually brief, not more than two pages long. It can be a shortened version of an IRB protocol or an abbreviated version of a longer document you previously wrote. The time line should present a realistic sequence of events (when subjects are to be recruited and tested, when you will analyze data and when you will write the thesis). The quality of the prospectus is not judged by the Honors Council: its purpose is to demonstrate that you have a real project that is feasible to carry out within the time frame; Your advisor is responsible for making sure that the project can be finished on time.

4 Honors Thesis Defense Committee

4.1 Working With Your Advisor

Your honors thesis advisor should make themself available for regular meetings with you, to answer questions and give you guidance about the proceedings of the scientific content of your thesis. Your advisor should play a key role in the revisions of your thesis and give suggestions of studies that you should read to expand and broaden your understanding of the research topic. One of the biggest problems for Honors students is insufficient time allocated for the back-and-forth of thesis drafts between you and your advisor. So be sure to check the sample time schedule found in Tables 1 and 2 (for Spring and Fall graduations, respectively).

4.2 Choosing Your Honors Thesis Committee Members

You should choose your committee and have their acceptances by early the first Tuesday in October for Spring graduation. You need to have decided on your primary advisor and the other committee members at that time. Your Honors Thesis Committee will have at least three faculy members: Your faculty advisor (the chair of your Thesis Committee), one Honors Council member or representative from the Department of Psychology and Neuroscience, and one outside member from another department on campus who is not a member of the Department of Psychology and Neuroscience. Check the department web page for a list of current members of the Honors Council and Honors Council Representatives (https://www.colorado.edu/psychneuro/undergraduates/honors-program). The complete list of Council members and representatives for all programs and departments can be found on the Honors web site (https://www.colorado.edu/honors/ graduation). The outside member cannot be cross-listed as Psychology and Neuroscience faculty. You may find someone with whom you've taken a class you enjoyed, or you may explore faculty members with related research interests to have someone who would find your research interesting. All members of your committee must be members of the Faculty of the University of Colorado Boulder (tenure-track Professors or Instructor rank). Graduate students may not serve as members of your thesis committee. It is not uncommon to have a fourth or even a fifth faculty member from another CU campus serve on your Thesis Committee when they have special expertise relevant to your thesis topic. Sometimes (rarely) a non-faculty member (a post-doctoral fellow, for example) may be given special permission to serve on the Thesis Committee, but a strong justification has to be made to the Department and to the Honors Program to obtain approval.

Your advisor may have some good suggestions, too! Keep in mind that your outside committee member will most likely not be familiar with your research area, and that you'll need to accommodate them in your oral defense and thesis writing by being transparent and defining all technical terms you use. You may choose to invite more than three committee members, but the more people you have on your committee the more difficult scheduling is, and the more random/"unwanted" questions you may get.

4.3 Communication With Your Committee

Be respectful and punctual through email correspondence with your committee. Be sure to set up a time for your defense early in the semester, so that finding a time that works for your all your committee members is relatively easy. Give a range of dates (e.g. the last two weeks of March) and ask your committee what general time of day or days of the week that would fit in their schedules. The Department Front Desk staff members will help you schedule a room. Send out a Doodle poll or an equivalent to your committee to come up with the defense time. As the date of the thesis defense gets closer, remind your committee of when and where your defense will be in the week of the presentation.

Remember to send your final defense copy to the whole committee 1-2 weeks prior to the defense. Offer them several different file formats of your thesis (.docx, PDF, printed hard copy) and remember to request comments from your committee; the additional critique will likely help your thesis be even better!

5 Thesis Defense Presentation

5.1 Purpose

The oral defense of your written thesis allows you to demonstrate familiarity with specific and broader aspects of your research area, and the ability to think critically and communicate effectively. This is not simply an "overview" of your thesis, but an opportunity to show the "bigger picture" into which your work fits, to engage in conversation about where your research could go, and to reflect on research that has been done previously. You should schedule it for 1.5 hours duration although it will usually last around an hour.

5.2 Scheduling the Defense

During the pandemic thesis defenses will be held via Zoom and not in person. But you should still follow the advice below because your committee members have multiple commitments that often make it difficult to find a time for you and all the committee members, especially as the defense deadline approaches. If you defend your thesis in person you can still broadcast it via Zoom so that friends and family can join in.

You are responsible for scheduling the defense with your committee members (as mentioned above). The defense should be scheduled for 1.5 hours to insure that the committee has adequate time for proper consideration of the work you have done. We recommend that you complete your defense before Spring Break (for Spring graduation), although you are free to schedule it any time before the Honors Program deadline. Do not wait until the last minute to schedule a room if the Pandemic guidelines permit in-person meetings. Your advisor will help you schedule a room if one is needed.

5.3 Guidelines and Formatting the Defense

You should begin with a 15-20 minute synopsis of your thesis (typically using PowerPoint or Keynote). Introduce your study by giving a rationale of your work: why it matters, why you spent time researching this, what the bigger picture is. You should then give a brief summary of the methods, results and the conclusions of the study. Your methods should be described such that the audience can easily understand how you are answering your research question. Discuss any pitfall and limitations of your study, constructively; but don't sell your research short. Be realistic in your descriptions.

It is an excellent idea to practice your defense as much as possible. As you "talk it out," it is easier to identify holes in logic, reconstruct weak arguments, and doing this gives you more confidence when presenting the "real thing." You might even consider videotaping yourself to confirm that you are confident and composed while presenting; be familiar enough with your presentation that you do not rely on slides or notes to give you the information.

5.4 Defense Agenda

You will set up your presentation, and greet committee members as they arrive. The committee will usually meet briefly alone before the presentation starts. You will then give your 15-20 min presentation, and subsequently engage in a period of questions and conversation about your presentation (expect conversation about tangentially related subjects, as well!). This may take another 20 to 30 minutes. You will then be asked to leave the room, while the committee discusses, and after their discussion, you may return and pack up your laptop and belongings!

Be prepared to answers questions about the following items: (1) any and all aspects of your research, especially what is mentioned in your presentation, written on your PowerPoint or Keynote slides and in your written thesis, (2) background knowledge of the main issues (found in the body of literature and sometimes textbooks), (3) relevant literature (e.g., what was known by the research community when you started, how do your results fit into the "big picture"), (4) things you may do differently if you could perform your

experiment/project over again, and (5) future plans with your career! Consider writing a list of specific possible questions from you committee, so that no question takes you by complete surprise and you can prepare answers for them.

5.5 Outcome of Thesis Defense Meeting

At the end of your defense, you will not be told by your Thesis Committee what level of honors they are recommending for you. That level is determined by the Arts and Sciences Honors Council guided by the recommendation of your committee. The final outcome can be different from your thesis committee recommendation. You will be notified of the level of honors that you have been awarded following the meeting of the Honors Council that takes place one week after the last day for defending your thesis. You will by notified of the outcome by email on Friday of that week.

5.6 Pandemic Considerations (2021)

During the pandemic thesis defenses will be held remotely via Zoom. The advice above is still valid and you should still schedule a room where you can give your presentation either alone or with a limited number of other people. You want to make it a formal, professional but relaxed event so dress appropriately and do not do your defense from your bedroom if you can avoid it. Your advisor and/or I can assist you with the technical details of using Zoom. In the future, when we return to fully in-person thesis defenses, we encourage you may also use Zoom as well. You can invite other people to "attend" your thesis defense (relatives, significant others, etc.) and record it if you wish.

6 Honors Designations

6.1 How the Decision is Made

Your cumulative GPA suggests a specific Honors designation (see Table 1), but the thesis must earn this designation independently; written thesis, defense performance and GPA are all taken into consideration for the final designation. For magna cum laude and summa cum laude, both the defense and written thesis must demonstrate a clear command of the "big picture," and the research should be conducted somewhat independently (especially for a summa cum laude). For a summa cum laude, the thesis and defense must be impeccable. Typically a summa cum laude thesis is one that is substantially ready for submission to a professional journal for publication and/or you have already or are presenting your thesis results to a professional meeting.

To be considered for higher Honors than your cumulative GPA suggests, you must produce a thesis and defense that is two levels higher than your GPA (e.g. magna cum laude level thesis is required for Honors if you have a GPA below 3.300, graduate-level work is required for summa cum laude if you have a GPA of 3.500 - 3.799). Your committee will write a letter to the Honors Council recommending a particular level of honors, but the Honors Council has the final say on the level of honors awarded. If the recommendation is for two levels higher than the GPA, two letters must be submitted to the Honors Council explaining the justification for higher honors. If there is a split vote among your committee members about the level of honors, two letters will also be submitted explaining the reasons for the split vote. The Honors Council will consider all of the evidence in making a final decision about the level of honors you will receive.

Table 1: Honors designations and corresponding cumulative GPAs.

Honors Level	Latin Honors	GPA
Honors	Cum Laude	3.300 to 3.499
High Honors	Magna Cum Laude	3.500 to 3.799
Highest Honors	Summa Cum Laude	3.800 to 4.000

6.2 Arts and Sciences Honors Council

The Honors Council is a group of faculty members representing all departments and programs in the College of Arts & Sciences (50+, with many non-science disciplines). The Honors Council make the final decision on your Honors designation. Their role is crucial when the defense committee's recommendation is not unanimous, or when the recommended designation is higher or lower than what the GPA suggests. In the latter cases, the defense copy of your thesis is circulated and examined by the Honors council members.

7 References

- American Psychological Association. (2020). Publication manual of the american psychological association (7th ed.). American Psychological Association.
- Correll, J., Mellinger, C., McClelland, G. H., & Judd, C. M. (2020). Avoid Cohen's 'Small,' 'Medium,' and 'Large' for Power Analysis. *Trends in Cognitive Sciences*, 24(3), 200–207. https://doi.org/10.1016/j.tics. 2019.12.009
- Hecht, S., Shlaer, S., & Pirenne, M. H. (1942). Energy, quanta, and vision. *Journal of General Physiology*, 25(6), 819–840. https://doi.org/10.1085/jgp.25.6.819

Appendix A: Sample Title Page

Title of Honors Thesis

 $\label{eq:student} \mbox{ by }$ Student Full Name

Department of Psychology and Neuroscience University of Colorado Boulder Boulder, Colorado 80309

Defense Date: Friday, 1 April 2022 Honors Thesis Advisor: Advisor Name

Defense Committee:

1st Committee Member Name, Psychology and Neuroscience, Thesis Advisor 2nd Committee Member Name, Psychology and Neuroscience, Honors Council Representative 3rd Committee Member Name, Department or Program, (Outside Member) 4th Committee Member Name, Department or Program, (Optional Additional Member)

Appendix B: Deadlines

Defending Thesis in Spring 2021

 $https://www.colorado.edu/honors/sites/default/files/attached-files/spring_2021_honors_thesis_deadlines_0.pdf$

Tuesday, 6 October 2020 at 16:00

Submit (hard copy) application form to A&S Honors program (Room M400M in Norlin) with all required signatures, a prospectus describing your project and a timeline of your project.

Six weeks before your defense

Submit a working copy of your thesis to your advisor; by this time, you should have at least an outline of your thesis prepared.

Four weeks before your defense

Submit a first full draft of your thesis to your advisor, and expect there to be 2-4 revisions after this draft before your final defense copy can be submitted to the committee.

At least one week before your defense (not including Spring Break)

Submit the final defense copy of your thesis to your whole committee.

Wednesday, 7 April 2021 at 16:00

Last day to defend thesis. Defense Copy of thesis due to Honors Program Office in Norlin (M400M) by 16:00.

Monday, 12 April 2021 by 22:59

Upload the final copy of thesis to the Undergraduate Honors Theses repository on CU Scholar by 23:59.

Friday, 16 April 2021: Notification of Honors designations by 17:00

Students will be notified of their honors designation at their colorado.edu email address

Thursday, 29 April 2021 at 15:00 (Date might change)

Present a poster of your honors project at the Psychology and Neuroscience Undergraduate Research Day, on Thursday, 29 April 2021, 15:00-17:00. (Note: Date might change)

Defending Thesis in Fall 2021

 $https://www.colorado.edu/honors/sites/default/files/attached-files/fall_2021_honors_thesis_deadlines.pdf$

Tuesday, 27 April 2021, by 16:00 (4:00 pm)

Submit registration form (download it from https://www.colorado.edu/honors/graduation) to A&S Honors program (via email to honors@colorado.edu) with all required signatures, a prospectus describing your project and a timeline of your project.

Six weeks before your defense

Submit a working copy of your thesis to your advisor; by this time, you should have at least an outline of your thesis prepared.

Four weeks before your defense

Submit a first full draft of your thesis to your advisor, and expect there to be 2-4 revisions after this draft before your final defense copy can be submitted to the committee.

At least one week before your defense (not including Spring Break)

Submit the final defense copy of your thesis to your whole committee.

Wednesday, 3 November 2021 at 16:00

Last day to defend thesis. Defense Copy of thesis due to Honors Program Office in Norlin (M400M) by 16:00.

Monday, 8 November 2021 at 23:59

Upload the final copy of thesis to the Undergraduate Honors Theses repository on CU Scholar by 23:59.

Friday, 12 November 2021: Notification of Honors designations by 17:00

Students will be notified of their honors designation at their colorado.edu email address

Thursday, ?? April 2022 at 15:00

Present a poster of your honors project at the Psychology and Neuroscience Undergraduate Research Day, UMC Glenn Miller Ballroom, on ??, ?? April 2021, 15:00-17:00, if you still are on campus in the Spring of 2022.

Defending Thesis in Spring 2022

 $https://www.colorado.edu/honors/sites/default/files/attached-files/fall_2021_honors_thesis_deadlines.pdf$

Tuesday, 5 October 2021, by 16:00 (4:00 pm)

Submit registration form (download it from https://www.colorado.edu/honors/graduation) to A&S Honors program (via email to honors@colorado.edu) with all required signatures, a prospectus describing your project and a timeline of your project.

Six weeks before your defense

Submit a working copy of your thesis to your advisor; by this time, you should have at least an outline of your thesis prepared.

Four weeks before your defense

Submit a first full draft of your thesis to your advisor, and expect there to be 2-4 revisions after this draft before your final defense copy can be submitted to the committee.

At least one week before your defense (not including Spring Break)

Submit the final defense copy of your thesis to your whole committee.

Wednesday, 6 April 2022 at 16:00

Last day to defend thesis. Defense Copy of thesis due to Honors Program Office in Norlin (M400M) by 16:00.

Monday, 11 April 2022 at 23:59

Upload the final copy of thesis to the Undergraduate Honors Theses repository on CU Scholar by 23:59.

Friday, 15 April 2022: Notification of Honors designations by 17:00

Students will be notified of their honors designation at their colorado.edu email address

Thursday, ?? April 2022 at 15:00

Present a poster of your honors project at the Psychology and Neuroscience Undergraduate Research Day, UMC Glenn Miller Ballroom, on ??, ?? April 2022, 15:00-17:00, if you still are on campus in the Spring of 2022.