

Your Awesome Thesis Title

by
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Professor My Cool Professor, Advisor

A thesis submitted in partial fulfillment
of the requirements for the
Degree of Bachelor of Arts with Honors
in Chemistry

WILLIAMS COLLEGE
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If you'd like to dedicate your thesis to anybody, you can write that in here.
Otherwise, you can remove this page's "include" command from the contents.

Abstract

In your abstract, your goal is to summarize the contents of your thesis in 1 paragraph. Focus on any important results and methods used to obtain them. Do not include any “introductory” material here.

Executive Summary

In a space of 2 to 3 pages, you should explain to an educated reader the question you have pursued, the methods you have used to answer that question, and the status of your answer. In this context “educated reader” means a science professor other than your advisor. You might well want to include a figure or two (which might also appear later in the thesis). Your audience should be able to pick up the executive summary and read it as its own document, understanding exactly what the major accomplishments of your thesis are. They should also understand why that work is important/interesting, so you should include a little bit of background/motivation for your work.

Acknowledgments

While technically this is optional, nearly every thesis includes a list of acknowledgments. It's fine to make these personal and potentially funny! Thank people who contributed to your work. This is very likely the only section your parents or siblings will actually read...

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Chapter 1

Introduction

In your introduction, you should introduce the problem that your thesis focuses on and explain why it is relevant to the field. Place your work in context by provided appropriate citations to the literature, such as this one [1]. You will want to work very hard to make sure that your introduction is completely understandable to any reader—hopefully even to your best friend majoring in Art History, but *certainly* to anyone who has taken a year or two of chemistry (or related sciences).

1.1 Your first section

You'll most likely split this up into different sections in order to organize your ideas. Use the `\section{}` command to do that.

1.1.1 A first subsection

... and some sections might even need subsections, depending on your organizational scheme. Use the `\subsection{}` command to do that.

1.2 Thesis Overview

At the end of your introduction, you should give a brief outline for what the remainder of your thesis looks like. This only needs to be about 1 paragraph long, and doesn't have to be super duper in-depth... but it should serve as a guide for readers. Use statements like: “In the reaminder of this thesis, we ...” and reference chapters specifically as you go: “Chapter 2 introduces my awesome new idea. Meanwhile, Chapter 3 builds on this to demonstrate...” and the like.

Chapter 2

A Second Chapter Appears!

You'll probably have more than 1 chapter in your thesis! Invariably, your thesis will have lots of figures that you may want to refer too—like Fig. 2.1. For figures, I recommend making them outside of \LaTeX , using something like PowerPoint, Matlab, Mathematica, Inkscape, or Adobe Illustrator. Then, import them into your thesis as a high-resolution `.png` (or similar). That will ensure that the figures show up in your thesis looking *exactly* how you want them to.

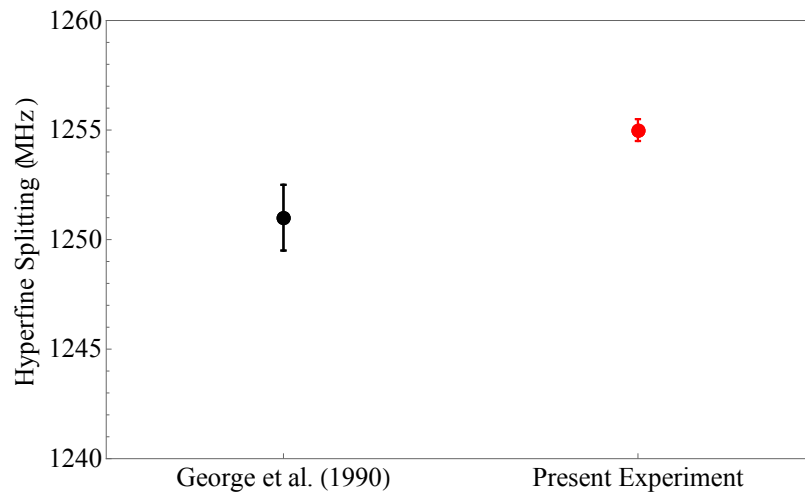


Figure 2.1: Example longer figure caption. You should describe the figure so that your reader understands what is going on.

2.1 A section in a chapter

Your thesis will surely be broken up into smaller sections, like this one. When you're writing and want to reference stuff, you can use bibliographical citations via the `\cite{}` command [2]. For this sample thesis document, I am including the bibliography from my own undergraduate thesis, but you should delete the references inside

of there and replace them with your own. You can use a citation manager like Zotero to generate the required `.bib` files for you (and keep them up to date) automagically!

2.2 A micro note about macros

You'll most likely have some math written throughout your thesis. Sometimes, it will be nice to define macros that give you a shortcut instead of typing out the same expressions over and over again. For example, here is part of the Schrodinger Equation $-\frac{\hbar^2}{2m} \frac{\partial^2}{\partial x^2}$, but I didn't actually type out the math in this chapter's file explicitly. The nice thing about that is if I use this expression in many places, but then decided "actually, I want to write this with ordinary, rather than partial, derivatives," I could make that change by updating the macro definition and having it update everywhere in the text at the same time. A good rule of thumb is that a symbol that you will use more than a single time, you should consider whether it's useful to define as a macro and reference instead of typing explicitly.

Chapter 3

A Second Chapter Appears!

You'll probably have more than 1 chapter in your thesis! All you'll need to do is make a new `.tex` file, give it a `\chapter{}` heading (and probably also a `\label{}` name so you can refer back to it easily), and then start typing away. If you want to, you can refer back to [Chapter 2](#) or even ahead to [Appendix A](#).

Appendix A

Example of an appendix

Here's an appendix. One of the functions of your thesis is to serve as a record for the next thesis student and/or your advisor (me!). These are people who will want nitty-gritty details that are not of interest to the general reader. Appendices are where that type of information lives. Examples might be computer codes, machine drawings, detailed operating instructions, details of supporting calculations, multiple figures showing data taken under slightly different conditions and the like. Putting such material into appendices lets you present a complete record for your advisor (and the next student) and still make a compelling presentation to the general reader.

Bibliography

- [1] S. H. Autler and C. H. Townes, Phys. Rev. **100** (1955).
- [2] A. Kortyna, C. Tinsman, J. Grab, M. S. Safronova, and U. I. Safronova, Phys. Rev. A **83** (2011), ISSN 1094-1622.