

UPDATED: MARCH 1, 2011

**THESIS PREPARATION**

**FOR**

**GRADUATE STUDENTS**

**DEPARTMENT OF  
PHARMACOLOGY AND TOXICOLOGY  
UNIVERSITY OF TORONTO**

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## **THESIS: General Comments**

It is suggested that you familiarize yourself with this booklet before starting to write the thesis. In particular, you will want to refer to the SGS website on thesis production, "Finishing Up": <http://www.sgs.utoronto.ca/informationfor/students/finup.htm>

Presented in this booklet are two guidelines for the preparation of theses; i.e., "*Traditional*" and "*Alternative*".

***Before going ahead with either the Traditional or Alternative format, the student should consult with his/her supervisor (and Supervisory Committee members in the case of PhD students).***

It is the student, the supervisor and the supervisory committee who establish the best possible thesis format for a given student.

Writing the thesis is an arduous task that ordinarily requires a few months of intensive effort. It is a period when the supervisor and student must find concentrated discussion time to shape the years of research into a document that will be destined for careful evaluation. It is also a time when final manuscripts for publication are frequently conceived and written. While it is natural for the student to be occupied with prospects of full-time employment or further studies, this critical period demands that the student set aside enough quality time for the task, unencumbered by these distractions. Every effort should be made not to set unrealistic deadlines, especially in light of the examination hurdles.

It is best to be liberal in the time allotted for thesis writing, completing examinations, and making final corrections to the thesis.

- a) If you plan to make a final printed version, use good quality white bond paper ( 8 1/2" X 11" or 21.5 cm x 28 cm) and thick enough to be opaque.
- b) The spacing of the typed lines should be at least one and a half spaces. Single spacing may be used for long quoted passages.
- c) Set margins:
  - Left - 1-1/4" (32 mm)
  - Top - 3/4" (22 mm)
  - Bottom - 3/4" (22 mm)
  - Right - 3/4" (22 mm)
- d) Page Numbering:

Ensure that all pages are present, in sequence, and correctly numbered. Each and every page in the thesis, except the title page, must be numbered. The preliminary portion of the thesis should be numbered with small Roman numerals placed in the centre of the page, about half an inch from the bottom. Numbering begins with the Abstract as ii (the Title Page counts as i, but the number does not appear). The remainder of the thesis, starting with the first page of the Introduction or Chapter One, should be numbered with Arabic numerals, beginning with

the number 1. Preferred placement of the Arabic numerals is in the upper right-hand corner (about 2.5 cm. from each edge) with the exception of the first page of every chapter, including the first page of the references or bibliography and appendices. For these, the page numbers should be placed in the centre, half an inch from the bottom edge of the page. Appendices included in the thesis must be numbered consecutively with the main body of the thesis.

\* \* \*

## ***GUIDELINES FOR THE PREPARATION OF THE TRADITIONAL THESIS***

A single guideline is inappropriate for all areas of research proceeding to a higher degree. The guidelines presented here will be principally oriented towards the majority of theses.

In clinical research areas, all the suggestions may be difficult to implement and it is emphasized that the following are guidelines and not regulations. If a supervisor wishes to modify the thesis format from herein described (does not apply to the Alternative Thesis format), he should apprise the Coordinator of Graduate Studies before submission of the thesis by the candidate to Committee Members.

There is no regulation for the length of a thesis, but a thesis must contain ALL components (see below). There is great variation in the length of theses, but in Pharmacology, most MSc theses range from 75 – 100 pages; and most PhD theses range from 150 – 250 pages.

Ph.D. and M.Sc. thesis manuscripts should be written under the following headings/components:

**TITLE PAGE**

**ABSTRACT**

**ACKNOWLEDGEMENTS (where applicable)**

**TABLE OF CONTENTS**

**LIST OF TABLES (where applicable)**

**LIST OF FIGURES**

**LIST OF APPENDICES (where applicable)**

**Section 1 INTRODUCTION**

**Section 2 MATERIALS AND METHODS**

**Section 3 RESULTS**

**Section 4 DISCUSSION, CONCLUSIONS, RECOMMENDATIONS**

**REFERENCES**

**LIST OF PUBLICATIONS AND ABSTRACTS**

**APPENDICES (as necessary)**

## **TITLE PAGE**

The title page should carry the **Title**, the **Author's name**, the statement: "**A thesis submitted in conformity with the requirements for the degree of (state degree). Graduate Department of Pharmacology and Toxicology, University of Toronto**". The Copyright symbol © must also be included, as well as the year of convocation. (See attached SAMPLE TITLE PAGE) for exact layout.

## **ABSTRACT**

The purpose of the abstract is to give a succinct account of the dissertation.

The abstract should give the pertinent information of the thesis in **150 words for the M.Sc.** and **350 words for the Ph.D.**

## **Technical Guidelines**

The following technical guidelines must be followed for the production of the abstract by Proquest/UMI, the National Library of Canada's production and sales agent, and then reproduced in Dissertation Abstracts International and Master's Abstracts International at [University Microfilms Inc. \(UMI\)](http://www.proquest.com/en-US/products/brands/pl_umi.shtml) [http://www.proquest.com/en-US/products/brands/pl\_umi.shtml]:

- Font size must be a minimum of 10 points and the lines of text must be double-spaced. The abstract must not exceed 350 words for a doctoral thesis or 150 words for a master's thesis. The left-hand margin should be at least 1 1/4" (32 mm), and the remaining three margins at least 3/4" (20 mm) to the main text.
- The student's thesis title, degree and year of convocation, full name, name of graduate department, and name of university must appear on the top of the first page of the abstract (this information is not included in the 350/150-word count).
- Symbols, as well as foreign words and phrases, must be clearly and accurately displayed.
- Do not include graphs, charts, tables, or illustrations in the abstract.

## **Section 1: INTRODUCTION**

**Statement of Problem:** This should be a short description of the problem to be investigated.

**Purpose of the Study and Objective**

**Statement of Research Hypotheses and Rationale for Hypotheses**

**Review of the Literature:** Should support the reasons for the study, briefly show what other work has been done in the area, what work has not been done and provide justifications for doing the research.

## **Section 2: MATERIALS AND METHODS**

This should include all information with necessary references for standard or new experimental methods used. The description of methods employed must be sufficiently complete to permit another investigator to repeat the experiments exactly from the information in the thesis and cited literature. A theoretical section can also be included in which mathematical models and necessary assumptions are described.

## **Section 3: RESULTS (May include several subsections; e.g., 3.1, 3.2, etc.)**

Here should be presented the individual experiments and experimental results, each preceded with a brief statement of the reason why the particular experiment was conducted. Discussion is best limited to the results of the individual experiment although this may not be the best approach for some clinical studies where brief discussion is necessary to clarify the results found. General discussion of the total result is reserved for the next chapter of the thesis.

The student should be selective and include only those experiments which are either worthy of publication or that document important aspects of research progress. Preliminary experiments can be either included here or as an appendix, as appropriate.

This section of the thesis may include several subsections, each presenting a different concept or stage of the research.

## **Section 4: GENERAL DISCUSSION, CONCLUSIONS, RECOMMENDATIONS (May include several subsections e.g., 4.1, 4.2 etc.)**

a) Full discussion of the experimental results described in Section 3 should be given including: 1) references to published work which are being used for comparison purposes; 2) support or rejection of concepts or findings; 3) limitations of study; 4) support or rejection of hypothesis.

b) A summary of findings

c) Recommendations for future studies listed in order of importance.

**APPENDICES:** (as necessary). If publications are included as an appendix, copyright must be obtained and included (See section on *Copyright*).

## **TABLES AND FIGURES**

Tables and figures where should be inserted at appropriate positions throughout the thesis, rather than compiled at the end.

## **Tables**

- Tables should be identified by number and cited in the text by the identifying number, and carry a descriptive title on the same page. The typical requirements for biomedical journals should be followed. Tables with only two columns may be left unruled, but tables with three or more columns should be ruled both vertically and horizontally. Units must be shown; abbreviations, if used, must be explained by footnotes; statistical comparisons, if made, may be explained by footnotes.
- Where space must be saved in a crowded table, the column headings may be typed vertically. This is not a desirable practice; it may be preferable to set the table broadside on the page to allow more space.
- When a table is continued over more than one page, the column headings should be repeated. Footnotes to tables should appear with each table rather than being referred back to a previous table.
- Basically, the table should be comprehensible without any reference to the text.

## **Figures**

- Figures (numbered with different numerals than that used for tables) and illustrations should be good reproductions. For line drawings, photocopies are usually satisfactory.
- In the case of tissue sections or other similar material, photographs must be mounted securely (not just by the corners), or high quality digital images should be used.
- Each figure should have an identifying number and a title on the same page. It should also carry a descriptive caption if the title is not self-explanatory.
- Any abbreviations used in a figure or diagram must be explained in the caption. The code to identifying symbols or lines may be included in the figure or in the caption as long as the adapted practice is used consistently.
- Magnifications to the final print must be specified for microscopic material unless a reference scale is included in the photograph or drawing.

## **REFERENCES**

Single space type.

The list of references should include only those publications which are mentioned in the text. They are best arranged alphabetically or according to the first author's surname. The style most common in the students field of practice should be used as long as it is consistent throughout the manuscript.

One example could be:

a) Papers published in periodicals: 1. Author(s) surname(s) with initials of given name(s); 2. Full title of papers; 3. Full title of Journal (no abbreviation); 4. Volume (in Arabic numerals, underlined and followed by colon); 5. First and last page; 6. Year of publication in brackets.

b) Books: 1. Author(s) surname(s) with initials of given name(s); 2. Full title; 3. Name and city of publishers, and in brackets year of publications.

c) Reference in the text of the thesis:

1. The author(s) surname(s) followed in brackets by year of publication or depending on sentence construction, the author(s) surname(s) and year of publication all in brackets.

2. If two authors' surnames are to be used, they should be mentioned in the text in the same way as described above. If three or more authors' surnames are used, only the first name should be given with *et al.* being used for the additional authors' names.

## ***GUIDELINES FOR THE PREPARATION OF THE ALTERNATIVE THESIS***

**This format may be used by Ph.D. students who have published (in press) 3 or more first-authored papers in peer-reviewed journals. (Review articles are not acceptable.) This policy is effective March, 2011.**

In Division IV, many graduate departments now believe that a thesis is only ready for submission when it can be demonstrated that much of the research has been published or accepted for publication. There is also an increasing need to make sure our graduates are well prepared for postdoctoral fellowships or jobs. The following type of thesis could increase research efficiency and decrease the time spent by students in preparing the thesis. It has also been approved in principal by SGS and adopted by some graduate departments of Division IV.

**It is the student, the supervisor and the supervisory committee who establish the best possible thesis format for a given student. Students who wish to use the alternative format must request permission from the Graduate Coordinator via the last PhD Supervisory Committee Report. When requesting permission, students will be asked to list the 3 (or more) published/in press articles they wish to use when writing up their thesis.**

The following suggestions are spelled out below for this type of thesis format.

1. Preliminary thesis components from Title Page to List of Appendices are the same as described for Traditional Format.

2. **General Introduction:** a) relevant literature review; b) scope of thesis to contain a general working hypothesis, outline of the chapters and an explanation of how they contribute to the theme and hypotheses of the thesis.

3. **Chapters:** Each chapter can be included as published or as accepted for publication (i.e. abstract, introduction, methods, results, discussion) provided it is the same type format as the thesis and there is a preamble for each chapter citing: a) the names of authors, title of paper, journal, volume, page numbers; b) a statement of the work performed by the student; and a full disclosure of any work not carried out by the student but which is contained in the chapter. At the end of each chapter there should be a statement of significance of the chapter and its impact; c) "results not shown" in the publications must be shown in the thesis (main body or appendix).

4. **Summary and General Discussion:** Discuss the status of the various working hypotheses



in light of the results presented in the chapters; summarize the conclusions reached in each chapter and their contribution to the general scope of the research project, and the overall significance of the work.

5. **Conclusions:** with future perspectives.

6. **References:** All references should be in first author, alphabetical order and include all authors, title of paper, journal, volume, page numbers (bibliographic software, e.g., Endnote or Reference Manager, format references of published papers).

7. **Appendices:** a) papers in which the student is not first or last author but which are relevant to the thesis; b) papers by the student not appropriate to the theme of the thesis; c) details of methods and results not included in publications.

8. **Copyright Release:** Letters of release from the publishers should be included as an Appendix to the thesis when the thesis is submitted to the Examination Committee. In cases where they have not yet been received, they must be obtained before the Senate Oral Examination. (See Section on Copyright)

\* \* \*

## **THESIS – Final Responsibilities**

### **M.Sc. Students:**

After successfully competing the Thesis Oral Defense and after the signed Thesis Approval Form (signifying all corrections have been made) has been submitted to the Pharmacology Graduate Office, the candidate must submit an electronic copy of the thesis (PDF format) to the School of Graduate Studies along with the required “thesis submission fee”.

Students should ensure that the title of their thesis on the "Thesis Approval Form" is the same as the final title on the thesis being submitted to the Graduate School as the title on this form is used by the Graduate Office on the M.Sc. Degree Recommendation.

See below for instructions regarding pdf file creation, thesis submission and graduation. Check with your supervisor when completing the University of Toronto Authority to Distribute Form in case he/she wishes to **restrict publication of the thesis**. Restriction may be requested for a maximum of two years.

### **Ph.D. Students**

After successfully completing the Senate Oral Exam and making the required revisions within the time frame set down by the Senate Oral Committee at the final examination, the student is responsible for submitting an electronic version of the thesis (in PDF format) to the School of Graduate Studies, Ph.D. Examinations Office, along with the “thesis submission fee”.

Depending on whether you were required to make minor corrections or minor modifications, proof that all of the corrections recommended by the Examination Committee have been made, must be received by the Ph.D. Orals Office and the Pharmacology Graduate Office You will

receive instructions immediately after your examination is complete outlining how this is to be accomplished. Either way, so that you can graduate, the Pharmacology Graduate Coordinator must also be informed in writing by your supervisor that all corrections have been made.

### **ELECTRONIC SUBMISSION FOR ALL THESES:**

For creation of the PDF file and electronic submission, see the SGS website, “Electronic Thesis and Dissertations” - <http://www.sgs.utoronto.ca/informationfor/students/finup/etds.htm>

- 1) Before you can register to submit an ETD, you must submit:
  - Written confirmation (letter or email) from your supervisor (for minor corrections) or the convenor of your modifications committee (for minor modifications), that your thesis is in final form and approved;
  - a signed and dated Library and Archives Canada Theses Non-Exclusive License;
  - all copyright permission letters required for your thesis ;
  - proof of payment of your thesis submission fee;
  - a Restrict Release form, dated and signed by the Chair of your department (only required if you intend to put an embargo on the release date of your ETD);

ETD authors are able to apply various access options to their thesis. Discuss the Creative Commons License options with your supervisor.

- 2) Read [T-Space Submission](http://www.sgs.utoronto.ca/informationfor/students/finup/etds/t-space.htm) [http://www.sgs.utoronto.ca/informationfor/students/finup/etds/t-space.htm] to walk you step-by-step through the submission process. Familiarize yourself with the procedure.
- 3) Scan any photographs, maps, or other graphical materials into acceptable electronic file formats.
- 4) Create your PDF files on a computer that has software to create PDF documents and your word processing program installed. Follow the directions on converting your thesis or dissertation to a PDF File. It is preferable that you insert bookmarks at least for every chapter and/or section and for all tables and figures.

Double-check that:

- your PDF file is accurate
- page numbers listed in the Table of Contents match exactly the page numbers for each section or element in the text
- all embedded graphics or other elements are properly situated in the text
- all hyperlinks are working properly

Technical assistance is available at the Information Commons Help Desk in Robarts Library in-person or by telephone at 416-978-4357.

Consult [T-Space Submission](http://www.sgs.utoronto.ca/informationfor/students/finup/etds/t-space.htm) [http://www.sgs.utoronto.ca/informationfor/students/finup/etds/t-space.htm] if using non-PDF supplementary files in your ETD.

Submission of a bound copy of the final thesis to the Pharmacology Graduate Office is optional. You should also check with your supervisor about whether he/she wishes a bound copy. The Department can assist you in arranging affordable binding.

### **Convocation**

There are three degree completion dates each year; late January, late April; and early October. (Check posted SGS deadlines each year)

### **SAMPLE TITLE PAGE:**

(NOTE: Spacing is approximate on 8 1/2" x 11" or 21.5cm x 28cm page)

(2" or 5 cm from top of page)

This Area is Recommended for

the Thesis Title Only

(1 1/2" or approx 4cm)

by

(1 1/2" or approx 4cm)

Jane Ann Doe

(2" or approx 5cm)

A thesis submitted in conformity with the requirements

for the degree of (state degree)

Graduate Department of Pharmacology and Toxicology

University of Toronto

(1 1/4" or approx 3cm)

© Copyright by Jane Ann Doe (state year of graduation)

(1 1/4" or approx 3cm from Bottom of page)

## COPYRIGHT CHECKLIST

### WHEN IS COPYRIGHT PERMISSION REQUIRED?

- ✓ Does your thesis contain someone else's work (third party materials)? For example, text, figures, maps, images, questionnaires, photos, etc.
- ✓ Does your thesis contain your own previously published materials (e.g. journal article)?
- ✓ Does your thesis include material (e.g. a chapter, an article) that was co-written with another author(s)?

If you answered "yes" to any of these questions then you must obtain written permission to reproduce the material from the copyright owner (e.g. journal publisher and/or co-authors).

### SECURING PERMISSION FROM COPYRIGHT HOLDERS

Securing copyright permission may take time and we recommend seeking any needed permissions early in the thesis preparation process. Some publishers provide (on their website or in the material given to you when your article was accepted) a policy statement granting permission to publish your work in a thesis. The [Sherpa Romeo](#) website may be helpful to you in determining publishers' policies.

If you need to request permission, we suggest that you refer to, or use, the wording of the Copyright Permission request sample text below.

An original, signed letter on the copyright holder's letterhead is your best protection against accusations of copyright violation, but email proof of permission from publishers or co-authors is acceptable. Keep copies of all documents for your own records.

### **Copyright Permission Request - Sample Text**

*Date:*

*Re: Permission to Use Copyrighted Material in a Doctoral/Master's Thesis*

*Dear:*

*I am a University of Toronto graduate student completing my Doctoral / Master's thesis entitled " \_\_\_\_ \*\*\* \_\_\_\_ ".*

*My thesis will be available in full-text on the internet for reference, study and / or copy. Except in situations where a thesis is under embargo or restriction, the electronic version will be accessible through the U of T Libraries web pages, the Library's web catalogue, and also through web search engines. I will also be granting Library and Archives Canada and ProQuest/UMI a non-exclusive license to reproduce, loan, distribute, or sell single copies of my thesis by any means and in any form or format. These rights will in no way restrict republication of the material in any other form by you or by others authorized by you.*

*I would like permission to allow inclusion of the following material in my thesis: [insert copy or detailed explanation including the title of the article or book, the figure or page numbers of the material used, the journal name, year, volume number or unique publication identifier, the publisher and year]*

*The material will be attributed through a citation.*

*Please confirm in writing or by email that these arrangements meet with your approval.*

*Sincerely*

*Your Name and Signature*

## **Cite Your Sources:**

Any copyrighted material used in your thesis, including photos, pictures, charts, graphs, maps, etc. must receive full citation. Each citation must include the copyright symbol, name of the copyright holder (who may or may not be the author) and a statement that the use or adaptation (in the case of adapted graphics) is by permission of the copyright holder.

## **Permission Denied? Unavailable?**

Occasionally, permission to use copyrighted material cannot be secured, or is denied. Do not reproduce copyrighted material in your thesis without permission. Remove the copyrighted material. You will proceed differently according to the nature of the material. In the case of an image of an artifact or artwork, for example, you may include a description of what is missing, a full citation of the source of the material and where it can be found. Include an explanation that the material has been removed because of copyright restrictions. In the case of a thesis chapter that was previously published as a journal article, you should include in place of the chapter an abstract of the chapter content and a link to the journal website where the original article can be read.

Here is an example: [article copyright solution example](#)

## **Quick Copyright Links:**

[Copyright Policy of the University of Toronto](#)

<http://www.governingcouncil.utoronto.ca/policies/copyright.htm>

[Canada Copyright Act](#)

<http://laws.justice.gc.ca/eng/UpdateNotice/index.html?rp14=%2Fen%2Fshowtdm%2Fcs%2FC-42%2F>

[Library & Archives Canada](#)

<http://www.collectionscanada.gc.ca/index-e.html>

[Canadian Intellectual Property Office](#)

<http://www.cipo.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/Home>

[Sherpa Romeo](#)

<http://www.sherpa.ac.uk/romeo/>

(databases where you can look up the policies of academic journals on the use of your published papers in a thesis)