

INSTRUCTIONS FOR PREPARING YOUR THESIS OR DISSERTATION FOR SUBMISSION TO THE COLLEGE OF NATURAL SCIENCES AND MATHEMATICS

(Revised July 2012)

DEADLINES

A senior honors, Master's or Ph.D. student who is prepared to submit a thesis or dissertation to the university should receive approval from the College of Natural Sciences and Mathematics. Your thesis or dissertation (also referred to as the "manuscript") should be submitted to the Dean's Office only after you and your committee members have carefully reviewed it to ensure that it is in complete compliance with the *requirements* stated in this document. After you have defended your work, collected the appropriate signatures, and prepared what you and your committee believe to be the *final copy*, submit one reading copy to the NSM Academic Affairs Office (202 SR1) for review. This reading copy may be submitted on ordinary Xerox paper but will not be accepted unless a copy of the completed signature page (without the Dean's signature) is included. Do not punch holes in or bind the reading copy in any way except by using a single binder clip or a rubber band.

The latest possible time for submitting your manuscript is 5:00 p.m. on the deadline date published on the NSM web page "Thesis and Dissertation Guidelines" (<http://nsm.uh.edu/academics/graduate/thesis-guidelines/index.php>). Anticipate three working days for the reader to review the manuscript. Do not prepare multiple copies of the manuscript until the reading copy is returned for correction.

Should your manuscript be deemed unacceptable, it will be returned and your graduation may be delayed.

Make sure that the product reflects well on YOU, your advisor and committee, and this university. Treat it as though it becomes a part of your resume on which your future depends.

REVIEW FOR FINAL SUBMISSION

You will receive an email to pick up your manuscript reviewed by the reader. This will be the "reader annotated version". When you pick up your reader annotated version, you will make an appointment to come back and show that you made the corrections according to the reader's review. You will have **3 days or less** to make these corrections depending on how close we are to the end of the semester. Final submissions are done by appointment only.

Once you have made the corrections, come to your appointment with the reader's annotated copy and your new corrected version. Do not print any copies on cotton paper for binding until the corrected version has been approved at your appointment. Submit one extra copy of the Title Page for the College.

If your department has changed to **electronic submission** (effective Spring 2012), please follow the instructions provided in the document "NSM Procedures for Electronic Submission" (<http://www.nsm.uh.edu/docs/nsm/academics/Specific%20instructions%20for%20electronic%20submission.pdf>).

ORDER OF PAGES

The manuscript *must* include the following required items *in the order listed*; no other order is acceptable. Only items in italics are optional.

Examples of the following pages are given at the end of this document.

1. Blank sheet of paper at the beginning (no page number shown and no page number assigned)
2. Title Page - Must show the month and year of your graduation. Only three months are acceptable: December for Fall graduation, May for Spring graduation, or August for Summer graduation. (Sample 1 - no page number should be printed, but page i is assigned.)
3. Signature Page - At least one original must have the original signatures of the committee, the student, and the Dean of the College in black ink. (Sample 2 - page ii)
4. *Acknowledgements, Preface, or Foreword* [Optional (Sample 3)]
5. Abstract Title Page - Must show the month and year of commencement for your graduation. Only three months are acceptable: December for Fall graduation, May for Spring graduation, or August for Summer graduation. (Sample 4)
6. Abstract - There is a 350-word limit for dissertations and theses (Sample 5)
7. Table of Contents - All entries should match exactly the corresponding headings and subheadings in the manuscript. The page number listed for each entry must be correct. (Sample 6)
8. *Lists (Figures, Tables, Schemes, Acronyms, Abbreviations, etc.) - Optional. Be consistent in your format. Page numbers must be included for lists of figures and tables; otherwise, they are of no benefit to the reader.*
9. Text of Manuscript - The first page should show its printed numeral 1. The manuscript's format must be consistent throughout the complete work.
10. References or Bibliography - Be consistent in your format.
11. Blank sheet of paper at the end of each copy submitted.

MARGINS

The following minimum margins are required:

1. Left 1 1/2 inch
2. Right 1 inch
3. Top 1 inch
4. Bottom 1 inch to the base of the page numbers. The text must be at least 1 1/4 inch from the bottom edge of the page.

All text, captions, and figures (including charts, graphs, maps, tables, and photographs) must be inside these margins. There are no exceptions!

TITLING YOUR THESIS OR DISSERTATION

Your manuscript will be a valuable source for other scholars only if it can be located easily. Modern retrieval systems use the words in the title (and sometimes a few other descriptive words) to locate your manuscript. It is essential that the title be a meaningful description of the content of your research.

PREPARING THE ABSTRACT

The abstract should give a succinct account of your research so that a reader can decide if s/he wants to read the complete manuscript. The maximum length of the abstract is 350 words, but nearly all abstracts should be shorter than this. Mathematical formulas, diagrams, and other illustrative materials should not be included in the abstract. An abstract should be double-spaced and printed on one side of the paper only. It should contain the following: (1) statement of the problem, (2) procedures and methods, (3) results, and (4) conclusions.

TEXT OF THE THESIS OR DISSERTATION

Style

A standard guideline is to prepare your manuscript following accepted requirements by any one of the leading American journals in your field, and apply that format consistently throughout the thesis or dissertation. Your advisor and research committee should help you arrive at an acceptable presentation. The abstract, acknowledgments, and main body of the manuscript must be double-spaced. The table of contents, captions, and references may be single-spaced.

Decide how you wish to structure your manuscript and be consistent throughout it. For example, if you use **BOLD CAPITAL LETTERS** for major headings, CAPITAL LETTERS for subheadings, and Normal Type for Sub-subheadings, be consistent throughout the manuscript. If you change font type or size when you change sections, be consistent. Make certain that your table of contents agrees with the manuscript concerning page numbers and exact titles of headings.

Avoid sections that begin on the last line of a page or sections that end on the first line of a page.

Edit your manuscript for proper English sentence structure, grammatical correctness, correct punctuation, spelling, and consistency. Consistency here means the following. If you hyphenate a word, join two words to make a new word, italicize a foreign word, or otherwise use language peculiar to your discipline, be consistent throughout the manuscript. Use a Spell Checker but do not rely solely on it. There is no substitute for careful editing. Have a colleague read your manuscript for clarity and correctness. Manuscripts with a large number of errors in the first few pages will be returned without further reading. Remember -- Your thesis or dissertation will become part of the public domain as soon as it is delivered to the library. Make sure that the product reflects well on you, your department, your advisor and committee, and this university. Treat it as though it becomes part of your resume on which your future depends.

Charts, Graphs, Tables, Photographs, Figures, and Captions

All figures, charts, tables, graphs, and tables must fit within the prescribed margins. They can be in color. If it is necessary to place a caption on a separate page to meet the margin requirements, turn the caption to face the figure and reverse the margins on the caption. By presenting the figure and caption this way, the reader sees both at the same time. If the figure or caption is in landscape mode (rather than portrait), the bottom should be on the right (outside) edge of the page.

Oversize Pages

Occasionally, charts, tables, maps, graphs, photographs, or figures that are larger than the standard page might have to be used in your thesis/dissertation. If so, they should be folded carefully into the manuscript. The preferred method of including oversize pages is to place them in a pocket in the back of the document after it is bound.

NUMBERING THE PAGES

Each page in the manuscript, beginning with the title page, must be assigned a number. The following plan of page numbering is required:

1. For the preliminaries (Title page through Table of Contents, List of Figures, and List of Tables, if included), use lower case Roman numerals (i, ii, iii, iv, etc.). The title page is assigned page number i, but the number is not shown on the page. The printed numbering begins with ii on the signature page. The Roman numerals should be placed at the center bottom, one inch from the bottom edge of the page.
2. For the remainder of the manuscript - including the text, illustrations, appendices, and bibliography - use Arabic numerals (1, 2, 3, 4, etc.). Each page must be numbered consecutively. Avoid the use of letter suffixes, such as 10a or 10b. The numbering begins with page 1 on the first page of the text and runs consecutively to the end of the manuscript. All page numbers are placed at the center bottom one (1) inch from the bottom edge of the page. If the description of an illustration or a caption for a figure is too long to be placed on the same page, it should be placed on the previous page facing the figure or illustration - not on an unnumbered page (remember that facing pages must have the margins reversed!).
3. If there are more volumes than one, each volume should contain a title page duplicating the title page of the first volume. If the volumes are separate entities, it would be well to identify them further as Volume I, II, etc. In any case, the page numbering may follow consecutively from one volume to another, or begin with Arabic number 1 at each new title page.

REFERENCES AND BIBLIOGRAPHY

As a rule, the format and style of presentation should conform to acceptable standards of scientific and scholarly writing in the discipline. For the instance in which this rule is an inadequate guide, consult a recent edition of *The Chicago Manual of Style*, University of Chicago Press or *A Manual for Writers of Term Papers, Theses, and Dissertations* (7th edition) by Kate L. Turabian, University of Chicago Press. The latter is an abbreviated version of *The Chicago Manual of Style*. You may purchase it from the University of Houston Bookstore. *A Manual for Writers of Term Papers, Theses, and Dissertations* is the guide the college thesis and dissertation reader uses to resolve questions of grammar, punctuation, and usage.

You may choose headline or sentence style for titles in the references, but be consistent in your style. In headline style titles, all first letters are capitalized except for articles (a, an, and the) and prepositions of fewer than five letters. Prepositions with five or more letters may be capitalized. With hyphenated words, generally only the first word is hyphenated. In sentence style titles, only the first word of the title and proper nouns are capitalized.

Be sure and check that all references cited in the text are in the bibliography, and all references in the bibliography are cited in the text.

NUMBER OF COPIES

The Departments of Biology & Biochemistry, Computer Science and Physics require the original manuscript and two copies at the time you submit the reviewed manuscript for binding. The original and first copies are retained by the University of Houston Library for purposes of references, including library loans. The second copy is sent to your department.

For the Departments of Chemistry, Mathematics and Earth and Atmospheric Science, the theses/dissertations will be submitted electronically to the library (see "NSM Procedures for Electronic Submission"). In this case, you should check with your graduate advisor to see if a bound copy is still required by your department.

You may have additional personal copies bound at this time.

Every effort is made to have the copies returned to your department within 12 weeks. Personal copies are returned to your home department. If you want your copies mailed to you, make the arrangements with your committee chairperson, staff advisor, or department business manager.

PAPER

Twenty (20) pound 8 1/2-inch by 11-inch white bond paper of at least 50% cotton fiber content is required for the original and one copy. The third copy must be prepared on at least 13 pound white bond paper of at least 25% cotton fiber content. Any additional personal copies for the student or the committee members must be on at least 13 pound white bond of at least 25% cotton fiber content.

QUESTIONS

You should direct questions concerning your thesis or dissertation to your committee chairperson first. General questions concerning the binding process may be directed to Sharonda Glass (sglass@central.uh.edu) in the NSM Academic Affairs Office, 202 SR1.

THESIS AND DISSERTATION REVIEW OR FINAL SUBMISSIONS

Senior honors, Master's and Ph. D. students should submit their theses or dissertations for review to the NSM Academic Affairs Office, 202 SR1.

FEES

Binding costs \$30 per copy. Payment should be made through MyNSM Store.

AVOIDING COMMON ERRORS

The page numbers given in the items below refer to *A Manual for Writers of Term Papers, Theses, and Dissertations* (7th edition) by Kate L. Turabian, University of Chicago Press.

- In a series consisting of three or more words, phrases, or clauses, separate the elements with commas.

Example: the elements included hydrogen, oxygen, and silicon (see p.298 section 21.2.2 regarding commas in a series)

- In headline-style capitalization (often used in titles, table of contents, and bibliographies), do not capitalize the second (or subsequent) part of a hyphenated compound unless it is a proper name or adjective.

Example: Self-regulated Genes; Genes that are Self Regulated; A Twenty-first-century History of Science; Helmholtz-Gibbs Equation (see p.313-315 section 22.3.1 for rules on capitalization)

- Use a semicolon between the clauses of compound sentences that are joined by conjunctive adverbs such as *therefore*, *hence*, *however*, *nevertheless*, *accordingly*, *thus*, and *then*. The semicolon precedes the adverb, and a comma usually follows it.

Example: The temperature was much lower than we anticipated; therefore, we did not go outside to work. (See p.301-302 section 21.3 for uses of the semicolon.)

- A comma should follow the words *namely*, *that is*, *for example*, *i.e.*, and *e.g.* There must also be a punctuation mark before each of these expressions, but the kind depends on the nature and complexity of the sentence.

Examples: The farmer brought several kinds of animals, namely, pigs, horses, and cows, into the classroom. The temperature in some areas of the world normally exceeds 100 F; for example, the average daytime temperature in Death Valley is 102 F. (See p.297 section 21.2 for uses of the comma.)

- A verb should agree with its subject in person and number.

Example: The employer of engineers and scientists has to be careful about hiring practices. The word employer is a singular subject and requires the singular verb has. Do not confuse the subject with one of its modifiers.

- A reference using *et al.* is correctly written as Brady *et al.*, not Brady, *et al.* and not Brady *et. al.*

- If you punctuate mathematical or chemical equations, punctuate them all and do it correctly.

- The word *data* is plural and requires a plural verb (e.g. the data were inconclusive).

- An item in the list of figures need not contain the full figure caption, but the portion that is included should be accurate and representative of the content.

- If you hyphenate a word, be consistent throughout the manuscript.

- Do not confuse *whose* with *who's* or *its* with *it's*.

- The word *respectively* is set off with commas, or with a comma and a period, if it comes at the end of a sentence.

- On the signature page, the title of the college is Natural Sciences and Mathematics, not Natural Science and Mathematics.

EXAMPLES OF PAGES

Examples of the pages that precede the text in the thesis or dissertation follow. A brief description of the contents of the page appears at the top in []. Each sample page represents an individual page.

[Blank sheet of paper at the beginning (no page number shown and no page number assigned)]

[Sample 1 - *Title Page* - Must show the month and year of your graduation. Only three months are acceptable: December for Fall graduation, May for Spring graduation, or August for Summer graduation. (Sample Two - no page number should be printed, but page i is assigned)]

DEVELOPMENT OF A RADIOIMMUNOASSAY

FOR THE DETECTION AND QUANTIFICATION OF IMMUNE COMPLEXES IN CANINE SERA BY A
SOLID PHASE C₁q BINDING ASSAY

A Dissertation (Thesis) (Senior Honor's Thesis) Presented to

the Faculty of the Department of Biology

University of Houston

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy (Master of Science) (Bachelor of Science)

By

Betty Sharon Brown

December 1979

[Sample 2 - *Signature Page* - At least *one original* must have the *original signatures* of the committee, the student, and the Dean of the College in black ink. page ii]

**DEVELOPMENT OF A RADIOIMMUNOASSAY
FOR THE DETECTION AND QUANTIFICATION
OF IMMUNE COMPLEXES IN CANINE SERA
BY A SOLID PHASE C1q BINDING ASSAY**

Betty Sharon Brown

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Sciences and Mathematics**

[Sample 3 -- *Acknowledgements, Preface, or Foreword - Optional*]

ACKNOWLEDGEMENTS

My special thanks go to Dr. John E. Evans, Ph.D., for his guidance and support throughout this endeavor. My sincerest appreciation goes to Dr. David S. Terman, M.D., both for permitting me to pursue this research in his laboratory and for his numerous invaluable contributions to this thesis. I would also like to thank Messrs. Rick Tillquist, Joe Henry, Tsuyoshi Yamamoto, and most especially, Gary Cook for their technical efforts and suggestions, without which this project would never have reached fruition. Last, but certainly not least; my deepest gratitude goes to my parents for their constant encouragement and total support in my attainment of this goal.

[Sample 4 --*Abstract Title Page*: Must show the month and year of commencement for your graduation. Only three months are acceptable: December for Fall graduation, May for Spring graduation, or August for Summer graduation.]

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[Sample 5 -- *Abstract* - There is a 350-word limit for dissertations and theses]

ABSTRACT

Staphylococcus aureus Cowan 1 strain (SAC) contains a cell wall protein that has an affinity for immune complexes and the IgG of most mammalian species. Dogs with spontaneous mammary adenocarcinoma whose plasma was perfused over immobilized SAC developed a potent, apparently humorally mediated tumoricidal response within hours after the perfusion. This response was accompanied by changes in the humoral concentrations of immune complexes, IgG, and tumor-specific antibodies. SAC efficiently removed the complexes from the plasma during the first 5-6 minutes of the perfusion, but as the perfusion continued, the concentration of complexes in the plasma immediately leaving the SAC filter equaled or exceeded the pre-perfusion values. Following the perfusion, the in vivo quantities of circulating immune complexes were elevated, the total serum IgG concentrations were depressed temporarily but rapidly rebounded to greater than pre-perfusion values, and the levels of tumor-specific antibodies became increased and remained elevated for varying periods of time. For these studies, a solid phase of Clq binding assay was shown to be reliable and reproducible in the quantification of canine immune complexes. This assay may also be useful in the identification of dogs with tumors that are amenable to the extra corporeal SAC perfusion treatment.

[Sample 6 – *Table of Contents* – All entries should match exactly the corresponding headings, subheadings, and fonts in the manuscript. The page number listed for each entry must be correct.]

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