

A MANUAL  
FOR THE PREPARATION OF  
GRADUATE THESES  
SEVENTH REVISED EDITION  
2006  
THE GRADUATE SCHOOL

**PURDUE**  

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**U N I V E R S I T Y**

The proper and immediate object of science  
is the acquirement, or communication, of truth...  
Samuel Taylor Coleridge, *Definitions of Poetry*, 1811

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## PREFACE

The Purdue University graduate faculty first authorized the writing of graduate thesis preparation guidelines in 1935. Since then, the thesis preparation manual has revised to reflect changing technology and philosophy: Orzolid and photostatic reproductions were first accepted in 1933, and microfilming was initiated in 1952. The two-week advance notice requirement was also adopted in 1952.

The Theses & Publication Committee sought input regarding the nature of the thesis and the need for uniformity of appearance from department heads, chairs of graduate committees, members of the Graduate Council, and graduate students themselves. After extensive discussion, the committee decided in 1994 that complete uniformity of theses came at the expense of students learning to prepare manuscripts for their own professional associations. Accordingly, University-wide format requirements were reduced to a minimum, and format specifications consistent with the student's own discipline were increased. This change in philosophy resulted in substantial decentralization of format control, significant changes in the procedures for completing and submitting a thesis or dissertation in partial fulfillment of the requirements for a graduate degree at Purdue University, and the need for a new manual to guide students pursuant to preparing their masters or doctoral manuscripts.

With the dawn of a new century, the increasing shift of institutions toward electronic thesis deposits (ETD) since the late 1990s has necessitated development of new formatting and submission procedures and policies for graduate degree candidates. These changes, among other things, reflect the ability of candidates to now include complementary multimedia presentations, to submit their theses directly to departmental format advisors as well as Thesis/Dissertation Office administrators for review, which, in turn, allows the Graduate School to forward their accepted theses to ProQuest Information & Learning for rapid microfilming, digitization, and distribution to interested researchers.

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## CHAPTER ONE: PURPOSE OF THIS GUIDE

A primary component of graduate study at Purdue University is participation in research. As a student in a doctoral program, and in some master's degree programs (those with a thesis option), you will be required to do more than simply participate in research. You will also create research. There is, however, more to the research process than learning to design significant and original problems. You must also acquire the literary skills necessary to communicate that research to other scholars. The preparation of a thesis or dissertation is one avenue through which these skills are acquired.<sup>1</sup> This manual is a guide to a subset of the skills; namely, the preparation of an acceptable manuscript.

In all fields of scientific and creative endeavor, scholars write articles and books, generate research proposals, or engage in artistic enterprises (activities that are not mutually exclusive). An effective novel, as well as an experiment in human genetics, relies on comprehensive and diligent research. The end of that process, or at least a pause in an ongoing process, is the preparation of an acceptable manuscript or work of art conforming to some set of rules and guidelines (usually specific to an individual's field of study). Adherence to such a set of guidelines is a necessary prerequisite to the typical review or analysis leading to publication or public display. Following such a set of guidelines while preparing a thesis/dissertation document, therefore, is an important learning experience helping prepare graduate students to participate more fully in their professional activities.

Journal editors and publishers have their own stylistic requirements for review and publication of manuscripts. In most cases, manuscripts not consistent with those stylistic constraints will be automatically rejected and returned to the author. This seeming rigidity regarding style is a necessary fact of life for an author. Editors who review many manuscripts cannot afford to spend time deciphering obscure stylistic referents or bad

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<sup>1</sup> The term "thesis" will be generically used throughout this manuscript when referring to doctoral dissertations as well as master's theses, except in cases specifically applying to Ph.D. dissertations.

grammar. Peer reviewers who read and comment on the quality of journal articles should not have to endure misspelled words or misplaced clauses. A thesis may be your first encounter with such prescriptive (and occasionally restrictive) rules. Therefore learning at the outset of one's career that consistency, accuracy, and adherence to stylistic rules is paramount for prior to publicly displaying publishable manuscripts or other intellectual products.

As a graduate student, you should realize that your accepted thesis is a published document and Purdue University is the nominal publisher. Purdue's graduate faculty has authorized the Theses and Publication Committee to develop style and appearance requirements for all theses/dissertations submitted to the University in partial fulfillment of its requirements for an advanced degree. These requirements are detailed in this manual. You will find considerable flexibility in the University specifications since academic disciplines have differing stylistic requirements and formatting conventions. Logic dictates that having one set of format requirements is often impractical; therefore, your department or discipline has been delegated the responsibility to provide many details pertaining to the appearance and format of your thesis.

Local or discipline-oriented autonomy in format specifications is not unlimited. The Graduate School Theses and Publication Committee does impose some requirements for the preparation of theses. The Graduate School Thesis/Dissertation Office has been delegated the responsibility for monitoring these University format requirements. The remainder of this manual describes these requirements as well as the procedures involved when submitting your completed thesis to the University.

## CHAPTER TWO: UNIVERSITY FORMAT REQUIREMENTS

The copy of a thesis submitted to the Thesis/Dissertation Office is called the *Deposit* copy. The *Deposit* copy of a thesis cannot be altered or edited after acceptance by the Thesis/Dissertation Office except with the express approval of the Graduate School. Accordingly, special care must be taken in producing this copy. The *Deposit* copy cannot be produced until after you have orally defended your research, made any required revisions, and have had them approved. The *Deposit* copy must conform to all University format specifications described below.

### University Format Requirements

#### Paper Requirement

- Standard 20-pound weight (24-pound is also acceptable), 100 percent rag or cotton content, non-acidic, 8 ½ x 11, white paper must be used for the *Deposit* copy.
- Oversize pages up to 11 x 22 ½ inches are acceptable if the folded edge is at least 1 ½ inches from the left edge, to permit unfolding, and the right edge lines up evenly with the standard 8 ½ x 11 sheets. Oversize pages should not be used unless necessary. Note: See page 15 for procedures relating to Electronic Thesis Deposit.

#### Font and Quality

- Only one font may normally be used throughout the thesis. All text, page numbers, table numbers, figure numbers, captions, references, and footnotes as a rule must be in the same font. For general text, type size should neither be less than 10 points (12 characters per inch) nor more than 12 points (10 characters per inch). Font and font size may be varied for symbols or emphasis when appropriate (e.g., for scientific or mathematic terms).
- Well-crafted text usually does not require font variations for emphasis. Avoid underlining, bolding, or italicizing text purely for emphasis only. Avoid the use of

unusual fonts (e.g., Comic Sans or script). If you must use them, do so sparingly and consistently. However, use of these variations for special symbols or words with special meaning is acceptable.

- Font sizes larger than 12 points waste space and paper. Avoid using these unless you are required to do so by your department.

### Spacing

- Vertical spacing of all text, including bibliographic references, should be 1.5 (four lines per vertical inch). Double-spacing (three lines per inch) is also acceptable.
- Long quotations, headings, and captions may be single-spaced (six lines per inch). Multilined and subdivision headings, figure and table captions, footnotes, and endnotes are normally single-spaced.

### Page Margins

- Left: 1.5 inches
- Right: 1 inch
- Top: 1 inch
- Bottom: 1.25 inches
- Avoid ending pages with one-line paragraphs or with only the first line of text from a paragraph continuing on the following page (these are commonly called “orphans”). Paragraphs ending pages of text must contain at least two lines of text or be moved to the top of the following page. This rule also applies to “hanging” subdivision headings.
- New pages of text must not begin with the last line of paragraphs carried over from previous pages (these are commonly called “widows”). Instead, extend the bottom margin slightly on the previous page to accommodate the remainder of the paragraph, footnote, or figure caption.
- All tables and figures, including their captions, must conform to margin requirements. If facing pages are necessary, the right and left margins are reversed.

### Pagination

- All pages of theses containing text or figures/tables are numbered. Except for the title page and cover pages, page numbers must be placed on each page of manuscript.

- Preliminary pages (e.g., ACKNOWLEDGMENTS, TABLE OF CONTENTS, etc.) are numbered consecutively in lowercase Roman numerals. Text and all reference pages, including appendices, are numbered consecutively in Arabic numerals beginning with 1 on the first page of text.
- Pagination should be placed in the upper right corner, ½ inch below the top edge of the page. The last digit of the page number is even with the right margin. Page numbers must be in the same font and font size as your text.
- Title pages are technically the first numbered pages (Roman numeral “i”). However, the numeral “i” does not appear on the title page. The first page following the title page (usually the dedication or ACKNOWLEDGMENTS) is numbered “ii.”
- Text pages beginning chapters may have the pagination placed at the bottom, centered. The word “page” never accompanies the number. Pages numbered with a suffix (e.g., 2b) are not permitted.

#### Title Page

- The title page must include the full, official title of your thesis, your full name as it appears in University records, the full title of the degree awarded, the date the degree is to be awarded, and the city of the campus at which the student’s degree is to be awarded as well as its location.
- Degree title for all doctoral candidates is “Doctor of Philosophy.” Specific degree titles for master’s candidates are listed under “Degrees Offered” in the *Graduate School Bulletin*. The date shown on your title page is always the month (May, August, or December) and year the degree is to be actually awarded.
- The degree-granting campus and location will be completely spelled out. *Do not* use contractions (e.g., use “Fort Wayne” instead of “IPFW” and “Indiana” instead of “IN”).

#### Abstract

- An abstract consisting of no less than two paragraphs is required. The first paragraph contains your name as it appears on the title page but with the last name first, the abbreviation of the degree title (e.g., M.S., Ph.D.), the name of the institution granting the degree, the month and year of degree award, the exact title of the thesis, and the name(s) of your major professor(s).

- The remaining paragraph(s) summarizes your research and may be of any length. However, Ph.D. candidates must ensure that the abstract they submit to ProQuest, either in hard form or via ETD, is identical to that in their manuscript.
- The first paragraph is single-spaced (six lines per inch). The spacing in the remainder of the abstract is the same as in your thesis text. The 350-word limit does not include the first paragraph. Mathematical formulas, diagrams, and other illustrative materials are neither normally used nor recommended for your abstract.

## CHAPTER THREE: DEPARTMENTAL THESIS REQUIREMENTS

The first steps of your graduate program of study begin in your department. The final steps necessary to graduate with a master's or doctoral degree also begin, appropriately, in your department. When you register for the session in which you are expecting to complete a degree, check "yes" next to the candidate status line on your *Course Request* (Registrar Form 23). See Appendix A for the sequence of steps. When you are ready to schedule the final examination for the degree, your departmental Graduate Studies Office will provide a form for you to request the appointment of an examining committee and schedule an examination date (Request for Appointment of Examining Committee, GS Form 8).

Each degree-granting department at Purdue has adopted specific format requirements relevant to its discipline. Your Graduate Studies Office will provide the specific departmental format requirements. However, when departmental and University style specifications overlap, University requirements must be satisfied. The information below details the steps your department will take to ensure successful completion of mandatory degree requirements and graduation.

### Departmental Format Approval

Two options are available to departments when determining if a thesis complies with departmental format requirements.

#### Approval by a Departmental Representative

Many departments have a designated thesis format adviser. This individual will examine your thesis prior to your final deposit appointment at the Thesis/Dissertation Office. Departmental thesis advisors will mark and sign the appropriate line at the bottom of the *Thesis Acceptance* (GS Form 9).

## Approval by Advisory Committees

Departments may also delegate authority to chairs of final examining committees to determine compliance of your thesis with departmental format requirements. If your department has opted for this route, your final examination committee chair will mark and sign the appropriate line at the bottom of the *Thesis Acceptance* form.

## Procedures

Each departmental Graduate Studies Office maintains *Request for Appointment of Examining Committee* (GS Form 8) which is used for both master's and Ph.D. candidates to appoint an examining committee as well as schedule the final examination. You must submit this form at least two weeks prior to the date of your examination. The Graduate School, in turn, ensures members of the examining committee are eligible to serve. Final examinations must be held before the last week of classes. When the Graduate School approves your *Request for Appointment of Examining Committee*, it forwards a copy to your departmental Graduate Studies office with the appropriate examination report form and a *Thesis Acceptance* (GS Form 9). Master's candidates will obtain and complete a *Master's Thesis Agreement* (GS Form 19) to be bound in their *Deposit* copy directly after their *Thesis Acceptance*.

In the case of Ph.D. candidates, the Graduate School will also send a ProQuest microfilm agreement form booklet, an *Addendum to the ProQuest Doctoral Dissertation Agreement Form* (GS Form 14), an *Earned Doctorates Awarded in the United States* survey form (this is conducted by the National Research Council), and a Graduate School exit questionnaire.

Doctoral candidates must complete the ProQuest microfilm agreement and *Addendum* forms, as well as their *Deposit* and unbound theses, and submit them to the Thesis/ Dissertation Office at their scheduled final deposit appointment. The microfilm agreement forms pertain to publication of your doctoral dissertation in microfilm format and Adobe pdf by ProQuest Information and Learning. NOTE: Candidates submitting via Electronic Thesis Deposit (ETD) will, instead, follow the procedures stated on page 15 and elsewhere in this manual.

Once you have passed the final examination for your degree, your chair and examining committee members will sign the *Graduate School Examination Report* (GS Form 7 for

master's candidates or Form 11 for doctoral candidates). The examination report will then be forwarded to your departmental Graduate Studies Office. Once any other required signatures are secured, the report is sent to the Graduate School. Prepare the final version of your thesis after your committee meets.

The *original*, signed *Thesis Acceptance* is bound as the first item in your *Deposit* copy. Reproduced copies of the *Thesis Acceptance* are placed in all other copies as well. Your departmental thesis advisor or examining committee chair, as appropriate, must also sign the format approval section at the bottom of the *Thesis Acceptance*. Please note that the Manager, Graduate School Thesis/Dissertation Office *does not* sign this form!

If your thesis has been designated "Confidential" (e.g., due to potentially patentable research), your major professor must check the appropriate block on the *Thesis Acceptance*, as well as sign it, and initiate a *Request for Confidentiality of Thesis* (GS Form 15). This form must be presented at the time of your final thesis deposit.

Candidates will then schedule a final deposit appointment through the Thesis/Dissertation Office, 4-2600, 170 Ernest C. Young Hall, [gradinfo@purdue.edu](mailto:gradinfo@purdue.edu).

Master's candidates will submit the following:

- *Deposit* copy containing original, signed *Thesis Acceptance* and *Master's Thesis Agreement*
- Departmental copy, if a thesis is declared "Confidential"
- *Request for Confidentiality of Thesis*, when appropriate
- Copyright permission(s), if applicable

Doctoral candidates will submit the following:

- *Deposit* copy containing original, signed *Thesis Acceptance*
- Unbound copy for microfilming by ProQuest
  - Please include an ETD Form 9, which is typed (no signatures). This will replace the *signed* Form 9 since ProQuest no longer desires signed acceptance forms.
- One (1) extra title page (*both* title pages are needed in cases of multi-volume dissertations)

- One (1) extra abstract (this may be paginated)
- ProQuest Information and Learning Doctoral Dissertation Agreement Form, completed and signed
  - NOTE: Due to recent Indiana legislation governing disclosure of Social Security numbers to third-parties, candidates desiring payment of royalties *will not* include their SSAN's at the bottom of the 2004 edition. ProQuest will directly contact candidates for any required information.
- *Addendum to the ProQuest Doctoral Dissertation Agreement Form*, completed and signed
- Copyright permission(s) if applicable.
- *Request for Confidentiality of Thesis*, when appropriate
  - Department copy, if a thesis is declared "Confidential." This policy *also* applies, until further notice, to candidates submitting their theses via Electronic Thesis Deposit (see page 15).
- The only other required document to accompany ETD deposits will be the *Addendum to the Doctoral Dissertation Agreement*, which will be sent separately to ProQuest Information and Learning after processing.
- Candidates submitting via Electronic Thesis Deposit (ETD) must follow the procedures stated on page 15.

Checklists stating the above items are linked on the Thesis/Dissertation Office website.

Final deposit appointments will consist of a review for adherence to University format requirements and to ensure you have submitted all required forms. Once your thesis is accepted, the Thesis/Dissertation Office will issue a *Thesis/Dissertation Receipt* (GS Form 16) which you will take to Graduate School Student Records, 170 Ernest C. Young Hall, along with your completed National Research Council and Graduate School questionnaires. You must deposit your thesis no later than 5 p.m. on the deadline date established by the Graduate School for the term in which you wish to graduate (i.e., the last day of classes). Please submit your thesis in a timely manner since most thesis deposits occur within the last two weeks prior to the Graduate School deadline!

## CHAPTER FOUR: UNIVERSITY THESIS DEPOSIT PROCEDURES

Submission of the *Deposit* copy of your thesis to the Thesis/Dissertation Office usually satisfies the final prerequisite for receiving a graduate degree. Theses, as a rule, may not be altered or edited after their acceptance by the Thesis/Dissertation Office. *Deposit* copies must not be submitted to the Thesis/Dissertation Office until after all revisions, recommended by your committee and department have been accomplished, and departmental format approval has been secured. Submission of your manuscript must follow the procedures listed below (A summary of the necessary steps toward degree completion is in Appendix A).

### University Procedural Requirements

#### Printing Your Master Copy

- The *Deposit* copy, the unbound copy (Ph.D.s only), and the department head, and major professor copies of your thesis must be produced using a laser printer or photocopier. These methods produce copies that will remain legible indefinitely.
- Draft copies may be printed using any procedure producing satisfactory, legible versions for review by your examining committee.
- Printing services are available through Boiler Copy Maker, 157 Purdue Memorial Union, 6-3888.

<http://www.purdue.edu/printingservices>

#### Copies

- Three (3) bound copies, and one (1) unbound copy, (Ph.Ds only) of the final draft of your thesis are required. NOTE: Candidates submitting via Electronic Thesis Deposit (ETD) will follow the procedures stated on page 15.
- One, the *Deposit* copy, is submitted to the Thesis/Dissertation Office. Doctoral students must also submit one unbound copy to the Thesis/Dissertation Office

which will, in turn, be forwarded to ProQuest Information and Learning for microfilming and digitization. ProQuest recycles the paper of this copy afterwards.

- The second bound copy is delivered to your department head for inclusion in your departmental library. However, if your thesis is confidential, this copy must be submitted to the Thesis/Dissertation Office at your final deposit appointment.
- The third bound copy is given to your major professor.

### Thesis Binding

- Deposit copies must be bound prior to deposit in black, three-hole screw-post binders with backing strips.
- The second and third copies may be bound by any method suggested or required by your department.
- Binding services are available at Boiler Copy Maker or University Printing Services for a reasonable cost.
- Candidates are usually also required to provide final versions of their theses to members of their examining committees. These may also be bound using any method agreeable to the examining committee.

### Thesis Submission

Theses are reviewed by the Thesis/Dissertation Office to ensure compliance with University format requirements. Approval is signaled by issuance of a *Thesis/Dissertation Receipt*. Deadlines for deposition are established by the Graduate School for each term and are normally the last day of classes prior to final examination week (always ending on a Friday).

- Final deposits should be scheduled as far ahead of the Graduate School deadline as possible—flexibility and planning are important!
- Non-compliance with University and departmental format requirements can result in needless delays and inconvenience to the candidate.
- The Thesis/Dissertation Office operates on a scheduled-appointment basis. Please call 4-2600 or e-mail [gradinfo@purdue.edu](mailto:gradinfo@purdue.edu) *at least 24 hours prior* to your requested appointment date to ensure scheduling.
- “Courtesy prechecks” are no longer performed as these have been replaced by departmental format advisor reviews, the online tools available on the Thesis/

Dissertation Office website, and scheduled presentations offered by the T/D Office. Thesis format and deposit workshops are offered each term. These are scheduled and publicized by the Thesis and Dissertation office. Special presentations can be also scheduled upon request by departments, organizations, and interested individuals. To schedule a presentation, please contact the Thesis/Dissertation Office.

#### Materials for Inclusion with the Deposit Copy

- Completed/signed *Thesis Acceptance*, bound as the first page of the thesis
- Completed *Master's Thesis Agreement* (signature is optional), bound as the second page of the *master's* thesis
- If “Confidential,” completed/signed *Request for Confidentiality of Thesis*
- ProQuest Information and Learning Doctoral Dissertation Agreement
- Completed/signed *Addendum to the ProQuest Doctoral Dissertation Agreement Form*
- One (1) extra title page or one (1) additional title page for each volume in the case of multi-volume theses
- One (1) extra abstract (this can be paginated)
- Copy of ETD Form 9 (only typed, since it will replace the signed copy.)
- Copyright permission(s) (if applicable)
- Candidates submitting Electronic Thesis Deposits (ETD) will follow the procedures stated on page 15 and elsewhere in this manual.

All required forms are forwarded to your departmental Graduate Studies Office upon receipt and approval of the *Request for Appointment of Examining Committee*. Your *Thesis Acceptance* must be signed by all members of your examining committee. A *Request for the Confidentiality of Thesis* is submitted only if your department desires confidentiality.

#### Vita

Ph.D. candidates are required to include a vita in their dissertation; however, this is optional for master's candidates. The vita is normally the last major division of the dissertation (unless followed by a publication) and should be separated from the preceding material by a cover sheet that is neither numbered nor counted. The content of

this section will be largely driven by departmental requirements; in some cases, you may be asked to provide a curriculum vitae, detailing your professional and academic resume.

#### Forms to be Taken to Graduate School Student Records after Successful Deposit

- *Thesis Receipt* issued by the Thesis/Dissertation Office
- National Research Council (NRC) questionnaire (Ph.D. only)
- Graduate School exit questionnaire (This may be instead completed online via SSINFO.)

Purdue University strongly encourages Ph.D. candidates to complete the NRC questionnaire. This survey is part of an important data collecting process monitoring the production of doctorates in the United States. Survey data is important for statistical studies by federal agencies regarding national trends in doctoral education and of manpower supply and demand. Such studies may influence research program and doctoral fellowship funding, so candidate input is greatly desired by the Graduate School.

#### Graduation and Commencement

- The Purdue Registrar will send you a letter regarding graduation and commencement approximately four to six weeks prior to end of the term in which you expect to graduate.
- If you are participating in commencement, the Purdue Graduate School will review your records after final grades are posted to ensure you have completed all requirements of the degree you are seeking. If you have satisfied all prerequisites, you will receive a diploma at the commencement ceremony.
- If you are not participating in commencement, the Graduate School will immediately review your records afterwards to ensure you have fulfilled all requirements of the degree you were seeking. Once this is accomplished (usually a four to six week process), your diploma will be mailed to your forwarding address.

#### Extensions and Waivers

- Extensions and waivers of Graduate School deadlines are considered only on a case-by-case basis. Candidates are expected to plan for sufficient time to make revisions arising from their defense as well as print required copies of their theses.

- Requests for waivers or extensions must be fully justified in writing and routed through your major professor and department head to the Graduate School.  
*Requests will be considered on a case-by-case basis.*
- Candidates who fail to fulfill final examination and thesis formatting requirements will not graduate and must register for the following term. University regulations governing registration can be found in *Policies and Procedures Manual for Administering Graduate Student Programs*. Graduate School Student Records, 170 Ernest C. Young Hall, can also provide information.

#### Submission of Electronic Thesis Deposits (ETD) – Ph.D. Candidates Only

Prior to submitting, you are encouraged to try out the ProQuest ETD demonstration website:

<http://dissertations.umi.com/marin/>

You may also review the Purdue ETD site in advance, *but please do not use it as a “test site.”* The Purdue site is “live” and will *only* be used for actual ETD submissions!

Once you’ve been approved to submit your ETD, the following procedures apply:

1. Access the Purdue ETD site and establish a personal account:  
<http://dissertations.umi.com/purdue/>
2. Choose “Submit Your Dissertation/Thesis” at the bottom of the page.
3. Read submission guidelines. Be especially careful when inputting all data since you may not be able to go back and revise it afterwards. Post-facto data changes require action by the Thesis and Dissertation Office!
4. Read ProQuest Information & Learning (PQIL) release.
5. Enter personal contact information.
6. Enter requested thesis and academic information (e.g., title, advisor, abstract, etc.).
7. Upload full text.

**NOTE:** Candidates must ensure they receive, complete, and attach the special Graduate School ETD Form 9, “Thesis Acceptance,” as the front (i.e., first) page of their thesis prior to submission to the Graduate School Thesis/Dissertation Office. Unlike the paper versions used for “hard copies,” the G. S. ETD Form 9 is *never*

signed—*only typed*. The Form 9 must also be properly re-saved as a pdf document so it *cannot* be edited afterwards! You must perform this task on a computer loaded with Acrobat Professional since computers loaded only with “Reader” will *not* be sufficient. Acrobat Professional should be available on most, if not all, Purdue computer lab machines.

8. Select whether or not ProQuest/University Microfilms International will file optional “copyright registration” and enter additional data (if applicable).
9. Choose whether to order additional copies of their thesis (this is optional).
10. Review your order and enter credit card information as requested. This will show any copyright or publication fees charged.
11. If applicable, fill out any feedback surveys required by ProQuest.
12. Review uploaded data and revise submission as needed.
13. The ETD will be sent to the Administrator (Thesis/Dissertation Office) who will review it. Candidates will be notified by e-mail if they have either been approved or if they need to make revisions and resubmit.

**Effective 17 November 2006, candidates will no longer need to turn in one “hard copy” on “cotton paper” at their scheduled final thesis deposit appointment.** They will, however, still need to turn in the following items at their deposit appointment, which must be scheduled *at least 24* hours in advance of their requested day and time:

1. *Original, signed* G. S. Form 9 “Thesis Acceptance.” G. S. Form 9’s are still needed to confirm that theses have been accepted by departments and will be permanently filed at the Graduate School.
2. Completed and signed G. S. Form 14 “Addendum to the Doctoral Dissertation Agreement.” These will be forwarded to ProQuest Information & Learning, along with electronic submissions, by the Graduate School.
3. If applicable, copyright permissions (e.g., in “hard” form—letter, e-mail, or fax). These will be forwarded to ProQuest Information & Learning by the Graduate School.

**NOTE: Candidates who include copyrighted material in their thesis/ dissertation not qualifying for an exemption under the copyright law *must* submit written permission from the copyright holders to the Thesis/Dissertation**

**Office. The T/D Office forwards the permissions to ProQuest Information & Learning to ensure theses are published in their original and complete forms. *Failure to provide required permissions will result in identified material being expunged prior to publication by ProQuest.***

4. If applicable, completed and signed G. S. Form 15, *Request for Confidentiality of Thesis*. This form is filed at the Graduate School.

**NOTE:** Candidates submitting confidential theses *must also submit their “hard,” departmental copies at their final deposit appointment!*

5. *Survey of Earned Doctorate* and Grad School exit survey. Please complete and turn them in to the Graduate School prior to commencement.

6. You must also still pay the mandatory \$73.00 ProQuest microfilming fee at the Bursar’s Office, Hovde Hall, in a timely manner prior to commencement!

- Questions? Please contact the Thesis/Dissertation Office: [markj@purdue.edu](mailto:markj@purdue.edu), 6-3157, or [www.gradschool.purdue.edu/thesis.cfm](http://www.gradschool.purdue.edu/thesis.cfm)

## CHAPTER FIVE: GENERAL INFORMATION

There is more to a thesis than satisfying the University and departmental format and procedural requirements described in the previous sections of this manual. Your major professor as well as your departmental faculty and staff will help you meet the tangible requirements of an advanced degree. They will also help you with the intangible basics of conducting and communicating the results of your original research in your specialized area. The information in this chapter focuses on other, but no less important, aspects of the research process including copyright protection and infringement, additional publication of your thesis, and use of unusual materials in your thesis.

### Publication by ProQuest Information and Learning

In the case of master's theses, Purdue University is the entity which publishes them in their complete form. However, doctoral dissertations are published not only by Purdue but are also issued as microform and Adobe pdf documents by ProQuest Information and Learning, Ann Arbor, MI. The dissertation microform fee paid by Ph.D. candidates covers the cost of producing the microform negative, of producing a positive microform copy for the Purdue University Library thesis collection, and of publishing the dissertation abstract in *Dissertation Abstracts International*. This monthly journal, subscribed to by leading libraries in this country and abroad, advertises the availability and prices of abstracted dissertations. Copies of the dissertation, in microform, Adobe pdf or as hard copies, are sold only by ProQuest Information and Learning, 789 East Eisenhower Parkway, P.O. Box 1346, Ann Arbor MI 48106-1346, (800) 521-0600 ext. 7020, [www.proquest.com](http://www.proquest.com). You are eligible for a royalty payment in the event your thesis is purchased by another party therefore you should ensure both ProQuest and Purdue University have your current contact information. Publication of your dissertation in microform does not prevent you from publishing your dissertation as a monograph or journal article(s) (See the section on copyright information below).

## Copyright Information/Intellectual Property Issues

### Thesis Copyright Protection

*Purdue Executive Memorandum B-10* established that copyright ownership now resides with you, the author. The copyright symbol © is no longer required for works to be copyrighted. Ph.D. candidates have the additional option of applying for registration of their copyright: This establishes a public record of theses/dissertations and confers additional legal rights, enabling individuals to file infringement suits and seek statutory damages as well as attorneys' fees. University Microfilms International will, for a reasonable fee, act as your agent with the Library of Congress Copyright Office ([www.loc.gov/copyright/](http://www.loc.gov/copyright/)) in securing copyright registration.

Specific questions regarding your rights and responsibilities under U.S. copyright law may be addressed to the Purdue University Copyright Office, 1530 Stewart Center, (765) 496-3864, [www.lib.purdue.edu/uco](http://www.lib.purdue.edu/uco).

### Using Material Protected by Copyright

Purdue University promotes compliance with U. S. copyright law and understanding of the appropriate use of copyrighted works. *Purdue Executive Memorandum B-53*, 10 July 2001, addresses the use of copyrighted materials for educational and research purposes ([www.adpc.purdue.edu/VPBS/b-53a/htm](http://www.adpc.purdue.edu/VPBS/b-53a/htm)).

When quoting extensively from copyrighted material, you must obtain written permission from the copyright holder. There is no precise relationship between the amount of text quoted and the requirement for written permission to use the material. The law governing copyright infringement is based on the "fair use" principle. Ordinarily, if you plan to quote more than 150 words of continuous text from copyrighted material, you should ask for permission from the author. If the work you are quoting has significant commercial value (e.g., a standardized test instrument), you should obtain permission to quote any complete or nearly complete text item or section. When your quotation of copyrighted material could have a negative impact on the existing commercial value of that material, obtain the copyright holder's permission. Figures or other graphical material, including Web pages, should not be reprinted in your thesis without the author's consent. Permission to use copyrighted material is usually granted on condition that acknowledgment is made. You are responsible for any required payments!

ProQuest Information and Learning requires certification that any extensive use of copyrighted material in a doctoral dissertation is made with written permission of the copyright holder. If extensive copyrighted quotations will be part of your dissertation, written confirmation (e.g., letter, e-mail) from the copyright holder approving use of their copyrighted material must be submitted with the unbound copy of your manuscript.

### Important Note for Doctoral Candidates

When using copyrighted material in a thesis, the importance of obtaining written permission from the copyright holder, as stated above, cannot be overemphasized. Permission may come in the form of a written letter, e-mail, facsimile or other tangible, “hard-copy” communication. These communications must specifically state that the copyright owner understands that ProQuest Information & Learning may supply copies on demand.

Non-tangible communications (e.g., handwritten notes or verbal permissions) cannot, and will not, be accepted under the current publication policies established by ProQuest Information & Learning, which is the commercial entity responsible for microfilming and digitizing all Purdue doctoral theses. Furthermore, if candidates are either unable or unwilling to furnish appropriate permissions for apparently copyrighted material, then ProQuest *will expunge* any identified text, figure, table, etc. from the published version of the theses and will not make it available to the public.

**In short, failure by candidates to obtain proper copyright permissions will result in significantly different, and lesser quality, published theses than the versions originally submitted to the Graduate School.**

### Thesis Confidentiality

Special circumstances, contractual obligations, patent or proprietary rights, or other factors may require that publication and distribution of theses be delayed. In such cases, you should submit a completed *Request for Confidentiality of Thesis* (GS Form 15) with your thesis at your final deposit appointment. You must also submit your deposit copy, unbound copy (Ph. D’s only) and the departmental copy to the custody of the Graduate School. Withholding or delaying publication of research findings in a thesis is a serious

matter and should be considered carefully by you and your major professor. Initial requests for confidentiality are normally granted for one (1) year.

Once your thesis has been released from confidentiality by the Graduate School, the *Deposit* copy will be placed in the Purdue University Library collection, the departmental copy will be sent to the department head, and, in the case of doctoral dissertations, the unbound copy will be forwarded to ProQuest for microfilming and digitization.

### Foreign Language Theses

Occasionally, thesis texts are written in foreign languages. In these cases, title pages and abstracts must be in English. However, thesis titles may appear on the title page and in the first paragraph of the abstract in the same language as the text. English translations of titles may be included in parentheses immediately following titles in thesis abstracts (but not titles on title pages).

### Use of Nonprint Materials

When the content of theses consist primarily of other than printed material (e.g., sound recordings, video recordings, motion picture films, slides, etc.) include written accounts of the development, location, and use of such materials. Report your plans to use these unusual materials to your major professor as early as possible in your graduate program. Consult the Graduate School to obtain tentative approval of any extraordinary format. Proposals involving these must be supported by letters of approval from your major professor.

### Nontext Materials

Tables are generally used to list tabulated numerical data, while figures are generally used to present nonverbal material (e.g., graphs or illustrations). Graphic materials may also be presented with photographic reproductions. Produce tables, figures, or photographs with an appropriate software program. Printing should be accomplished with either a laser printer or graphics plotter.

- Color figures or photographs are acceptable for all *bound* copies of your thesis. However, until further notice from ProQuest, only black and white or gray-scaled figures, photographs, and tables can be used for unbound copies to be microfilmed. ProQuest does not, at this time (2006), produce color microfilmed copies.
- Candidates submitting via Electronic Thesis Deposit (ETD) may use color figures in the Adobe pdf version they submit to the Thesis/Dissertation Office.
- Freehand symbols or numbers are generally not acceptable. Exceptions to this rule are considered on a case-by-case basis.
- Tables, figures, and printed representations of photographs must be printed on paper meeting format requirements. Nontextual presentations should be placed adjacent to the related text (i.e., usually either on the same page or the page immediately following).
- In some cases, you may have computer programs or large amounts of data too voluminous to easily incorporate in to your appendices. If so, you may attach a CD-Rom, placed into a plastic sleeve with an adhesive back, to the inside back cover of your thesis. Plastic CD-Rom sleeves are available at either campus bookstores or at local office supply outlets. Material contained on the CD-Rom should be referenced in your text as appropriate.

#### Facing Page

- Figures too large, or captions too lengthy, to meet normal margin restrictions can be addressed via “facing pages.”
- Insert a new page with the caption approximately centered on the middle of the page (this applies to both “landscape” and “portrait” captions).
- Facing pages are numbered in the upper left corner, and the reverse of the page is blank and not numbered. See Appendix B for an example of a facing page.

#### Oversize Page

- Oversize pages up to twenty-two and a half (22 ½) inches are acceptable provided the folded edge is at least one and a half (1 ½) inches from the left edge to permit unfolding.
- The right edge of the oversize page must be even with the right edge of the standard eight and a half by eleven (8 ½ x 11) page.

- Pagination on an oversize page appears in the upper right corner as usual. See Appendix E for an example of an oversized page.

#### Table and Figure Captioning and Numbering

- Tables and figures, including those in the appendices, are each assigned a unique Arabic number and caption. Tables and figures are numbered consecutively; one sequence for tables (e.g., Table 1; Table 2.1; Figure 6.4; etc.) and a separate sequence for figures (e.g., Figure 1; Figure 2; etc.).
- Tables and figures in the appendices may continue the numbering sequence used in the text or may be numbered A1, A2, A3, etc.
- Captions must be as concise as possible. The complete caption must be included in the LIST OF TABLES or LIST OF FIGURES.
- Vertical spacing for table or figure captions containing more than one line of text is six lines per inch (single-space).

#### Multi-Volume Thesis

- Length of theses may require using two or more binders. The standard rule is, due to the thickness of cotton paper to be bound, theses containing 350 pages or more must be divided.
- Separation of thesis pages into volumes should come at the end of a major division or, at least, a “logical” place.
- Each volume will have its own separate title page. These will be identical except for the words VOLUME II, VOLUME III, etc. just below the title (the first volume does not need to be identified as such since this is “understood.” These pages, as with the first, are neither numbered nor counted.
- All other preliminary pages appear only in the first volume. Pages are numbered consecutively starting with page 1, of the first volume, through the end of the last volume.
- For more information, see the explanatory figure in the Appendix.
- Candidates submitting via Electronic Thesis Deposit (ETD) *will submit one single file regardless of the length of the “hard” copy.* The electronic copy will be identical to any other copies in “hard” form and will also include the slightly different table of contents and title pages as described above.

## Suggested Style Manuals

The publications listed below provide additional, general information regarding the preparation of theses. Some of these have been adopted as official style manuals by some Purdue departments. When information in these or other sources varies from University requirements, *Purdue requirements must be satisfied*.

There are also a variety of style manuals published by and for professional societies of scholarly disciplines. These include the *Council of Biology Editors Style Manual*, distributed by the American Institute of Biological Sciences, the *MLA Handbook for Writers of Research Papers*, published by the Modern Language Association, and the *Publication Manual of the American Psychological Association*.

These style manuals provide information and stylistic information about the constituent parts of a manuscript. They also list specifications for preparing footnotes or endnotes, italicization and bolding, as well as the preparation of bibliographies and reference lists.

## Formatting Your Thesis in L<sup>A</sup>T<sub>E</sub>X

L<sup>A</sup>T<sub>E</sub>X is a high-quality typesetting program, with features designed for the production of technical and scientific documents. It is especially good at typesetting mathematics.

Free versions of L<sup>A</sup>T<sub>E</sub>X are available for Macintosh for Purdue staff and students, Linux and Unix, Windows, and many other operation systems. It is already installed on many Purdue computers and comes with many operating systems.

Purdue's Engineering Computer Network offers L<sup>A</sup>T<sub>E</sub>X-related short courses on a scheduled basis. If you would like more information about L<sup>A</sup>T<sub>E</sub>X, please contact the Engineering Computer Network (ECN), [www.ecn.purdue.edu/~mark/latex](http://www.ecn.purdue.edu/~mark/latex) or at 494-5450.

## Protecting the Integrity of Research Data and Documents

The research enterprise is a public process. You and other researchers in your discipline should be willing to share sources of information and findings. This is primarily why you write and publish your research results. Protecting and preserving your research data is paramount. In many disciplines, personal notebooks are used to document experiments and experimental operations. Should you ever be charged with scientific misconduct, your laboratory notebooks can verify your work. Take special precautions when storing electronic data—regularly backup data files. Use passwords to protect your files whenever possible. “An ounce of prevention is worth a pound of cure”: Take precautions now so

documenting your research, and claims of primacy of ideas or other work, will be easy in the future.

Manuscripts require similar protection. Regular backups and password protection are essential in safeguarding your thesis. These will help ensure computer failures and “crashes” won’t interfere with completion of your degree. Keep your manuscript in short, manageable files to preclude potential loss of your work.

Maintaining intermediate copies of your manuscript is another important step in protecting your research claim since your case for originality is strengthened if you can produce early versions of your work. These show development of your ideas and thought processes. These rough drafts of your thesis can be crucial evidence in the unlikely event you are accused of plagiarism.

These precautions may seem excessive but, given your research data is quite valuable, necessary. Scientists often find themselves going back to earlier data sets to confirm ideas and test new hypotheses. There are likely to be more important reasons to preserve data and manuscripts than the risk of scientific misconduct or plagiarism allegations. Researchers can rarely predict when new data will shed further light on previous findings, or when previous research may be used to support novel hypotheses. Failure to maintain early manuscripts containing previously collected data can deprive you of a valuable resource!

## CHAPTER SIX: UNIVERSITY FORMAT

This section describes the format specifications in *A Manual for the Preparation of Graduate Theses*. Some departments may adopt these format specifications for candidates preparing theses and dissertations in their programs. For others, this chapter may serve as a guide and example of how to construct a thesis. You may use the title page and abstract descriptions as guides, for example, in preparing your own title page and abstract. Furthermore, the presentation order of preliminary material, text, and appendices must apply to all theses. This being said, some of the specific format requirements adopted by your department may differ from what is described below. Consistency and simplicity are key things to remember!

### Preliminary Pages

#### Title Page

- This section is applicable to all theses.
- Title pages are not numbered but are technically counted as page “i” of the preliminaries.
- Information is centered between the right and left margins, not the edges of the sheet.
- See example for spacing, capitalization, and punctuation.
- The title shown must be the complete, official, finalized title of your thesis.
- Your full name as it appears in University records appears on the title page.
- Degree title for all doctoral candidates is “Doctor of Philosophy.”
- Specific degree names for master’s candidates appear in the list of “Degrees Offered” shown in the *Graduate School Bulletin*.

- Title page date is the month and year your degree is actually awarded (not your defense date!). If you have registered for “degree only,” revise the thesis title page to reflect the new date on which the degree is to be awarded.
- Ensure you include the correct location of the degree-awarding campus (e.g., West Lafayette, Indiana — spell out “Indiana”)<sup>2</sup>, do not use the postal code.

#### Dedication Page

- These are optional. They should be brief and centered on the page. *No heading is used.* Number this page “ii.” Your dedication is not listed in the TABLE OF CONTENTS.

#### Acknowledgments Page

- An acknowledgments page is optional; however, most theses include brief statements of appreciation or recognition of special assistance. This page is not listed in your TABLE OF CONTENTS.
- The heading ACKNOWLEDGMENTS, in capital letters, is centered between the left and right margins, without punctuation or underlining, two (2) inches from the top of the page, with the text beginning three single-space lines below.
- Vertical spacing of the text must be the same as in the rest of your thesis.
- Pagination is in lowercase Roman numerals.

#### Preface

- This is optional. Appropriate examples of prefaces can be found in various style manuals. Prefaces are not listed in the TABLE OF CONTENTS.
- The heading PREFACE, in capital letters, is centered between the left and right margins, without punctuation or underlining, two (2) inches from the top of the page, with the text beginning three single-space lines below.
- Vertical spacing of the text must be the same as in the rest of your thesis (eg., 1.5 or double space).
- Pagination is in lowercase Roman numerals.

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<sup>2</sup> Please note that line spacing will vary according to font size used. You may adjust the width of spacing slightly to present a more uniform and aesthetic appearance. This applies to all headings.

### Table of Contents

- This section is required.
- The heading TABLE OF CONTENTS, in capital letters, is centered between the right and left margins, without punctuation or underlining, two (2) inches from the top of the page. The list begins at the left margin, three single-space lines below the heading.
- All material following the TABLE OF CONTENTS is listed. No preceding material is listed.
- Headings of parts, sections, chapters, and their principal subdivisions are listed in the TABLE OF CONTENTS and must be worded exactly as they appear in the body of your thesis. When listing the subdivisions, list the same levels of headings and subheadings consistently for each chapter.
- Dotted leaders are required between headings and page numbers.
- If your TABLE OF CONTENTS continues beyond one page, allow a one (1) inch top margin on successive pages.
- The word “Page” should be placed above the listing of the page numbers on all pages in your table of contents.
- Pagination for this section is in lowercase Roman numerals.

### List of Tables

- This section is optional but strongly recommended. The format for the LIST OF TABLES is generally the same as for the TABLE OF CONTENTS.
- The heading LIST OF TABLES, in capital letters, is centered between the right and left margins, without punctuation or underlining, two (2) inches from the top of the page. The list begins at the left margin, three single-space lines below the heading.
- Dotted leaders are required between captions and page numbers.
- This section contains exactly the same numbers and captions appearing above the tables in the text and appendices.
- If your LIST OF TABLES continues beyond one page, allow a one (1) inch top margin on successive pages.
- The word “Table” should be placed above the listing of the table numbers and captions on all pages of your list of tables. “Page” should be placed above the listing of the page numbers on all pages in your list of tables.

- Pagination for this section is in lowercase Roman numerals.

#### List of Figures

- This section is optional but strongly recommended. The format for the LIST OF FIGURES is generally the same as for the TABLE OF CONTENTS.
- The heading LIST OF FIGURES, in capital letters, is centered between the right and left margins, without punctuation or underlining, two (2) inches from the top of the page. The list begins at the left margin, three single-space lines below the heading.
- Dotted leaders are required between captions and page numbers.
- This section contains exactly the same numbers and captions appearing below the figures in the text and appendices.
- If your LIST OF FIGURES continues beyond one page, allow a one (1) inch top margin on successive pages.
- The word “Figure” should be placed above the listing of the figure numbers and captions on all pages of your list of figures. “Page” should be placed above the listing of the page numbers on all pages in your list of figures.
- Pagination for this section is in lowercase Roman numerals.

#### Lists of Symbols, Abbreviations, Nomenclature, or Glossary

- Lists of symbols, lists of abbreviations, nomenclature, or glossary may be appropriate for some theses. If needed, these appear after lists of tables and figures. If a glossary is more than two pages, it may be placed in the back of your thesis between the notes and bibliography.
- Follow a form acceptable in your field of study.
- Pagination is in lowercase roman numerals (except in cases when they are placed in the back of thesis).
- One and a half (1.5) or double-spacing, as appropriate, is used between entries and single-spacing *within* entries.

#### Abstract

- Abstracts are required.
- The heading ABSTRACT, in capital letters, is centered between the left and right margins, without punctuation or underlining, two (2) inches from the top of the

page. The first paragraph begins three single-space lines below the heading, is single-spaced, and begins at the left margin.

- The first paragraph must contain your name as it appears on the title page but with the last name first, the abbreviation of the degree title, the name of the institution granting the degree, the month and year the degree is awarded, the title of the thesis, and the name(s) of your major professor(s).
- Follow the first paragraph with a statement of the thesis problem, a brief exposition of the research and a condensed summary of your findings.
- The vertical spacing must be the same as the spacing in the rest of your text.
- Mathematical formulas, diagrams, and other illustrative materials will not be used in your abstract since they generally cannot be updated “as is” by ProQuest Information and Learning into its database.
- Your abstract may be of any length. However, Ph.D. candidates must ensure that the abstracts they submit, either in hard copy or electronically, are *identical*.
- Paginate abstract pages in lowercase Roman numerals.

#### Publication

- Some departments require that a publishable paper, based on your thesis, be included. Your major professor will direct your preparation of this paper.
- Incorporation of papers is handled in two ways:
  - It may be placed in your thesis immediately following the abstract. Pagination is in lowercase Roman numerals, continuing the sequence of the preliminary pages.
  - Journal articles may also be placed after the VITA, in which case Arabic pagination is continued to the end of the article.
- In either case, the journal article is preceded by a cover sheet with the heading PUBLICATION, in capital letters, without punctuation or underlining, centered on the page. The cover sheet is neither numbered nor counted.
- Articles should be listed in the TABLE OF CONTENTS as PUBLICATION (or, if more than one, PUBLICATIONS). If the article title is listed in the TABLE OF CONTENTS, it should be shown as a first order subdivision. Journal article pages must conform to margin requirements stated for the rest of your thesis.

- Scanned versions of original journal articles are acceptable, as long as they are fully legible and meet Purdue page formatting guidelines.

### Body Text

- Body text of your thesis follows the preliminaries. A standard, and consistent, organizational scheme must be adopted and used throughout your thesis.
- For theses divided into parts, there are special instructions:
  - If several chapters are grouped to form a part, the heading (e.g., PART ONE, PART TWO, etc.) and title are written in capital letters and centered on a separate divider sheet. The divider sheets are numbered and counted.
  - The names of the parts are listed in the TABLE OF CONTENTS as major headings with their page numbers. Immediately following each divider sheet is the first page of the first chapter of each part. This page must carry the chapter number and title printed in capital letters, centered, and placed two (2) inches from the top of the page.
  - Chapters should be numbered consecutively throughout your thesis regardless of subdivision. For theses divided into major divisions and subdivisions, format and positioning of text and titles for each division through fourth order subdivisions is shown in Figure 5.
  - MS Word has a tendency to add extra spacing after tables and figures, which, in turn, pushes down text on subsequent pages. Please watch for pushed down text and correct accordingly.

### Introduction

- Introductions may precede the first chapters or major divisions of theses.
- In these cases, the heading INTRODUCTION, in capital letters, is centered without punctuation or underlining, two (2) inches from the top of the page. Text begins three (3) single-space lines below the heading.
- Begin pagination with Arabic numeral 1 on the first page of text.
- Introductions may also be first chapters of theses, in which case INTRODUCTION is the title of the first chapter or major division, and its placement is consistent with other chapter titles.

- A third approach is for introductions to be opening statements of the first chapter and require no special treatment or heading.
- If your thesis is divided into parts or sections, and if the introduction serves to introduce the entire work, it precedes the divider sheet for PART ONE. The title on the divider page is PART ONE, and is centered without punctuation or underlining on the page. Divider pages must be paginated and listed in your TABLE OF CONTENTS.
- If each part has its own introduction, any one of the first three ways described above can be used for each part.

### Body Content

- The body of the thesis is the substance of your dissertation, the comprehensive statement of your research.

### Summary and Conclusions

- The summary and/or conclusions are often the last major division(s) of your text.

### Recommendations

- You may include recommendations as a major division if your subject matter and research dictate.

### References

- The bibliography or list of references contains sources consulted during the course of your research.
- The heading BIBLIOGRAPHY or LIST OF REFERENCES, in capital letters, is centered without punctuation or underlining on the cover sheet, which is neither counted nor numbered.
- The heading is repeated on the first page of the bibliography, two (2) inches from the top of the page, centered and without punctuation or underlining.
- Vertical spacing of the bibliography or list of references is the same as the rest of the text between entries.

- Within entries, vertical spacing is the same required for the publishing style in your discipline.
- Reference entries must not be divided between pages. To preclude this, either slightly extend your bottom margin to accommodate the entire entry or shift the entire entry to the top of the next page and leave the bottom of the previous page blank.
- Bibliographies or lists of references may also be placed at the end of each thesis chapter and are then treated as first order subdivisions. Each heading begins one (1) inch from the top of page.
- In some departments, theses are composed of separate and distinct parts. Each part has a bibliography or list of references placed at the end of each part. Accordingly, bibliographies or lists of references are treated as major divisions and listed in the TABLE OF CONTENTS. The heading BIBLIOGRAPHY or LIST OF REFERENCES is in capital letters, without punctuation or underlining, and is centered two (2) inches from the top of the page.
- Standards for presentation of bibliographies are set forth in style manuals or will be prescribed by your major professor.

#### Appendices

- Appendices are not necessarily part of every thesis. Appendices are used for supplementary illustrative material, original data, computer programs, and other material not necessarily appropriate for inclusion within the text of your thesis.
- Appendices must meet the margin requirements of one and one-half (1 ½) inches, but not necessarily the top, bottom, or right margin requirements.
- Appendix sections are separated from preceding material by cover sheets with the heading APPENDIX (or, if more than one, APPENDICES) in capital letters, centered, and without punctuation or underlining.
- This sheet is neither counted nor numbered.
- If there is only one appendix, it will be treated as a major division in the TABLE OF CONTENTS and in the APPENDIX section. The heading APPENDIX (and title, if any) is listed in the TABLE OF CONTENTS as a major division heading.
- Within the appendix section, the heading APPENDIX is centered and placed two (2) inches from the top of the page.

- If the appendix has a title, place it below the word APPENDIX, centered, and in capital letters.
- If there is no room for the appendix heading on the first page, the cover sheet will suffice.
- When there are two or more appendices, each is treated as a first order subdivision in the table of contents and in the appendices section.
- List each appendix heading (the word APPENDIX and, if applicable, the title) in the Table of Contents under the major heading APPENDICES.
- Within the APPENDICES section, each appendix heading is shown one inch from the top of the first page of the individual appendix. Treat each appendix heading as other first order subdivision headings are treated in the text.
- If separate sheets are used to identify individual appendices, they are numbered and counted.
- Appendix headings are centered on the page.
- Appendix tables and figures must be included in the LIST OF TABLES and LIST OF FIGURES. They are numbered and are uniquely captioned. Appendix tables and figures are subject to the same rules covering tables and figures in your text (see pages 26 and 27).

#### Notes and Footnotes

- The main requirement for these is consistency.
- When notes are placed at the end of chapters, they are treated as first order subdivisions and begin one (1) inch from the top of the page. The heading Notes is listed in the TABLE OF CONTENTS.
- When notes are deferred to the end of your text, treat them as a major division and include the major division heading NOTES in the TABLE OF CONTENTS.
- When footnotes are used, begin and end them on the same page. If necessary you can slightly reduce the font size, use single-spacing, or slightly extend the bottom page margin to accommodate the entire note on one page.

#### Vita

- These are only mandatory for doctoral candidates. Masters candidates may include them optionally or if directed by their departments.

- The vita is separated from preceding material by a cover sheet that is neither numbered nor counted.
- The heading VITA, in capital letters, is centered on the page without punctuation or underlining. The word VITA is repeated, centered, two (2) inches from the top of the first page of the section. *Do not use the heading “CURRICULUM VITAE.”*
- Your vita is the last major division of your Table of Contents and in your thesis unless followed by a publication.
- Avoid use of graphics, photographs, figures, tables, etc. in your vita. Format should follow previously mentioned guidelines (e.g., use, whenever possible, the same font and font size as is used in the main body of your text). Actual length of a vita is determined by the needs of candidates and their departments—usually a few paragraphs is sufficient. Some departments may require “curriculum vitae”; if so, these should follow University format whenever possible.

## APPENDICES

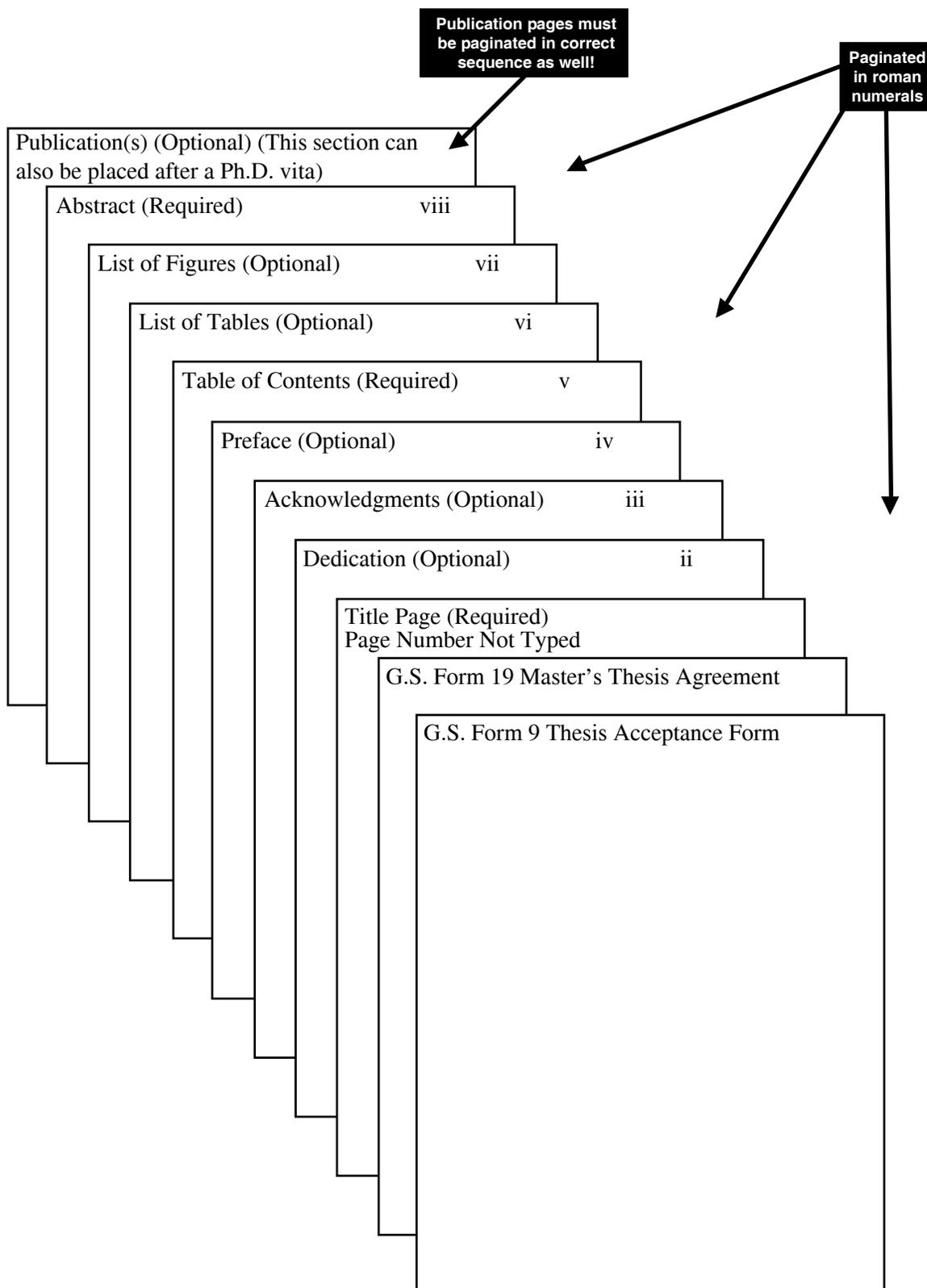
## Appendix A: Sequence of Steps to Complete a Graduate Degree

1. When you preregister or register for the session in which you expect to receive the degree, check that you will be a “candidate” on your *Course Request* (Registrar Form 23).
2. Obtain from your departmental Graduate Studies Office a copy of the format specifications for your department and a *Request for Appointment of Examining Committee* (GS Form 8). These specifications must be followed in preparing the final copy of your thesis. Request the appointment of the examining committee at least two weeks prior to the date the examination is to be held. Because the Purdue University Senate has prohibited examinations during “dead week” (the last week of classes), all final examinations must be held before the last week of classes. You are expected to give copies of your thesis to the members of your examining committee at least two weeks prior to the examination.
3. Your departmental Graduate Studies Office will receive, from the Graduate School, confirmation that the scheduled examination has been approved, the appropriate examination report form, and the *Thesis Acceptance* (GS Form 9). Dates during “dead week” will not be approved. When the examination is for the doctoral degree, your departmental Graduate Studies Office will also receive for you a copy of the agreement with ProQuest Information and Learning, an Addendum to the ProQuest agreement, a survey form on Earned Doctorates Awarded in the United States, and a Graduate School exit questionnaire.
4. Pass the final examination. All members of your committee should sign the examination report form and the *Thesis Acceptance*. Committee members may not wish to sign your *Thesis Acceptance* until requested changes have been made in the thesis.
5. When the *Deposit* copy of the thesis is prepared, have the appropriate individual (chair of the examination committee or the departmental thesis advisor) examine your thesis. That individual must sign the *Thesis Acceptance*.
6. Have the *Deposit* copy of the thesis bound and take it to the Thesis/Dissertation Office, 170 Young Graduate House, no later than close of business on the deadline date established by the Graduate School (i.e., before the end of the last day of classes). Masters candidates will ensure a completed copy of the Master’s Agreement form is bound in with their *Deposit* copy. Doctoral candidates must also present one (1 )

unbound copy of their thesis for microfilming unless they are submitting via Electronic Thesis Deposit (ETD), a completed ProQuest Information and Learning agreement, an *Addendum to the ProQuest Agreement* form, one (1) title page, one (1) abstract, and a completed ETD Form 9. The Thesis/Dissertation Office will review your thesis to determine compliance with University format requirements. Upon acceptance, you will be issued a *Thesis/Dissertation Receipt* (GS Form 16). Candidates with “Confidential” theses must submit a *Request for Confidentiality of Thesis* (GS Form 15) at your final deposit appointment. This form is available in the Graduate School, 170 Ernest C. Young Hall.

7. Take your *Thesis Receipt*, the completed National Research Council questionnaire, and the Graduate School exit questionnaire to Graduate School Records and Inquiries, 170 Ernest C. Young Hall, no later than close of business on the Monday following the thesis deposit deadline (i.e., the first working day following the last day of classes). Candidates submitting via Electronic Thesis Deposit (ETD) will follow the procedures stated on page 15 and elsewhere in this manual.
8. If your thesis does not satisfy University format requirement and is not accepted, you must register during the next session to receive your degree. No alterations or edits are normally allowed after deposition. Requests for deadline waivers or extensions, as well as post-facto alterations or edits, must be fully justified in writing and are routed through the candidate’s department to the Graduate School. Approvals are contingent on the facts of the case.

## Appendix B: Order of Preliminary Pages



Appendix C: Sample Format of Subdivisions



MAJOR DIVISION HEADING

(Text begins after three single-space lines)

First Order Subdivision

Subdivision heading starts three single-space lines below previous text, using vertical spacing of one and one-half or two lines.

Second Order Subdivision

This heading is formatted in the same manner as the first order subdivision

Third Order Subdivision

Three single-space lines separate the subdivision from the previous text, and the text begins after one and one-half or two blank lines.



Fourth Order Subdivision

Follow the same format rules as for a third order subdivision

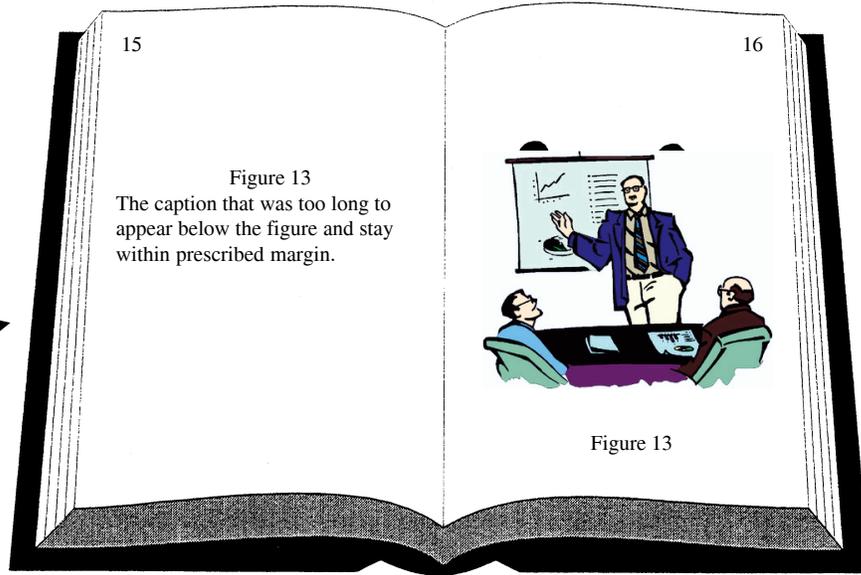


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### Appendix D: Numbering an Inserted Facing Page for Figure Caption

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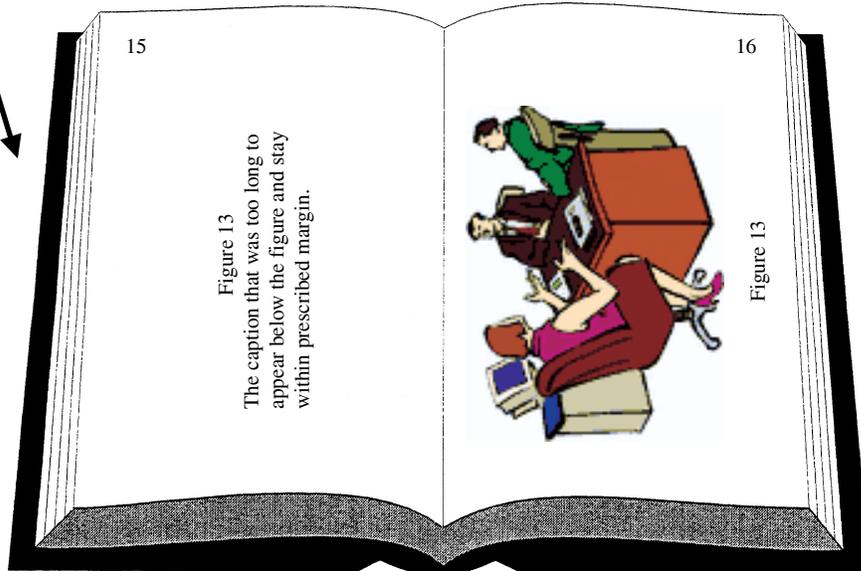
Margins and page numbers are reversed.



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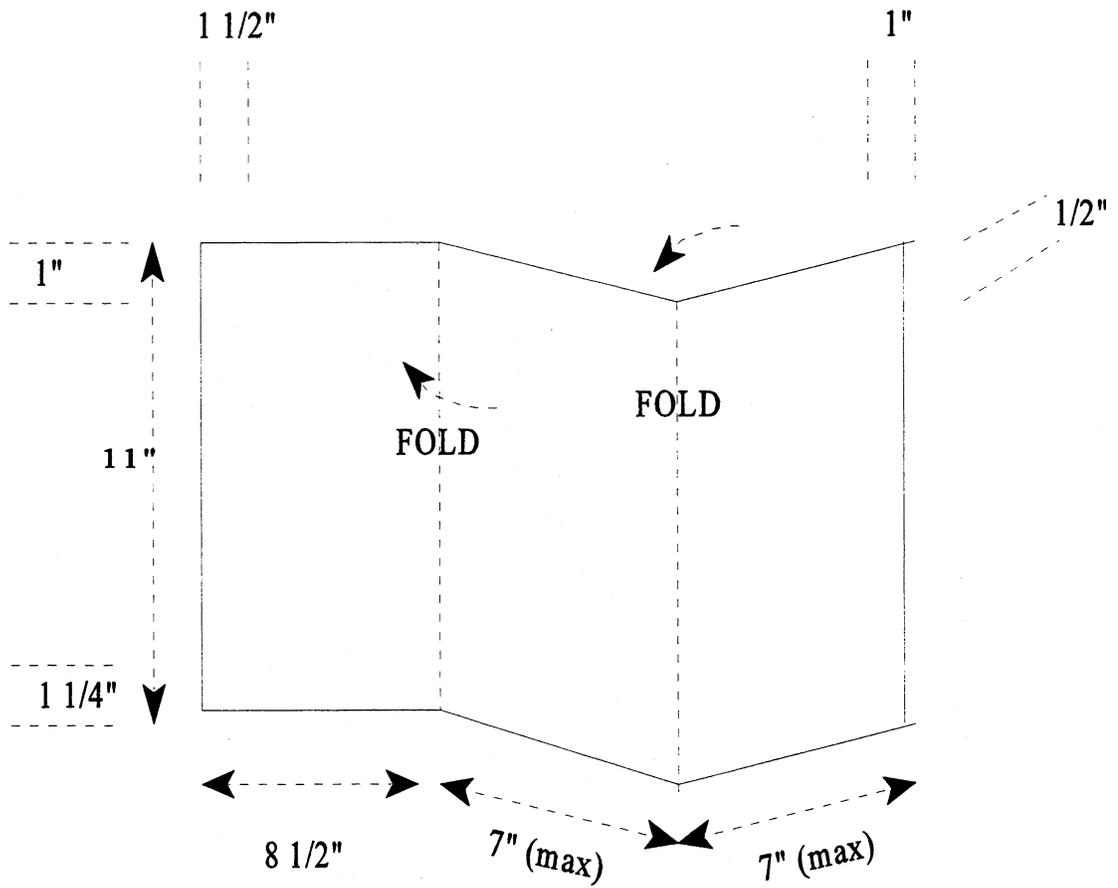
Sample A



Sample B

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Appendix E: How to Fold an Oversize Page



Appendix F: Sample Pages

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2 inches

All capital letters

THE QUICK BROWN FOX  
JUMPS OVER THE LAZY DOG

Use correct term. Master's will use "Thesis."

Spacing must be consistent

A Dissertation  
Submitted to the Faculty  
of  
Purdue University

These are not capitalized

Name per university records

by  
John Q. Smith

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In Partial Fulfillment of the  
Requirements for the Degree  
of  
Doctor of Philosophy

Correct degree title

Month of graduation. This is always May, August, or December.

December 2006

Purdue University

One of the following applicable locations must be stated.

Fort Wayne, Indiana  
Hammond, Indiana  
Indianapolis, Indiana  
West Lafayette, Indiana  
Westville, Indiana

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Do not put in a header



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Roman numeral pagination

For my wife and children.

Non-English text and fonts may be used.



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ACKNOWLEDGMENTS

Roman  
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pagination

Three single  
spaces

Use this section to offer “credit where credit is due.” There is no limitation on the number of pages you may use for acknowledgments; however, begin text on the second and subsequent pages at one inch from the top of the page. Text spacing, font, and font size must be the same as used in the main body of your thesis.

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**Roman numeral pagination**

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TABLE OF CONTENTS

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Dates will always be either May, August, or December

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### ABSTRACT

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Smith, John Q. Ph.D., Purdue University, December 2006. The Quick Brown Fox Jumps Over the Lazy Dog. Major Professor: John A. Doe.

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The purpose of the present study was to investigate the impact of age and expertise on memory performance. Poorer recall by the elderly has been explained by their failure to use elaborate encoding of information. Within expert domains, however, expertise is thought to facilitate elaborate processing. Therefore, within expert domains, recall by older experts should be improved because processing deficits should be compensated for by the beneficial effects of expertise. In the present study, younger and older bridge experts and novices were tested using bridge-like tasks and nonbridge tasks. Older experts recalled more total cards and has larger chunks than did young novices on bridge-like tasks. However, on tasks in which bridge knowledge was irrelevant the young novices' memory performance was better than that of the older experts. The beneficial effects of expertise did not compensate for all age differences because differences were found between young and older experts. These results are discussed in terms of the roles of task-specific knowledge and non-specific factors in producing age-related change in memory.

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Abstract may be of any length. However, all submitted versions must be identical.

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## Rovibrational characterization of $X^2\Sigma^+$ $^{11}\text{BH}^+$ by the extrapolation of photoselected high Rydberg series in $^{11}\text{BH}$

C. Ricardo Viteri and Andrew T. Gilkison

*Department of Chemistry, Purdue University, West Lafayette, Indiana 47907*Scott J. Rixon and Edward R. Grant<sup>a)</sup>*Department of Chemistry, University of British Columbia, Vancouver, BC V6T 1Z3, Canada*

(Received 10 November 2005; accepted 15 February 2006; published online 14 April 2006)

Optical-optical-optical triple-resonance spectroscopy of  $^{11}\text{BH}$  isolates high Rydberg states that form series converging to rotational state specific ionization potentials in the vibrational levels of  $^{11}\text{BH}^+$  from  $\nu^+=0$  through 4. Limits defined by a comprehensive fit of these series to state-detailed thresholds yield rovibrational constants describing the  $X^2\Sigma^+$  state of  $^{11}\text{BH}^+$ . The data provide a first determination of the vibrational-rotational interaction parameter  $\alpha_e=0.4821\text{ cm}^{-1}$  and a more accurate estimate of  $\omega_e=2526.58\text{ cm}^{-1}$  together with the higher-order anharmonic terms  $\omega_e x_e=61.98\text{ cm}^{-1}$  and  $\omega_e y_e=-1.989\text{ cm}^{-1}$ . The deperturbation and global fit of series to state-detailed limits also yield a precise value of the adiabatic ionization potential of  $^{11}\text{BH}$  of  $79\,120.3\pm 0.1\text{ cm}^{-1}$ , or  $9.810\,33\pm 1\times 10^{-5}\text{ eV}$ . High precision is afforded here by the use of graphical analysis techniques, narrow-bandwidth laser systems, and an analysis of newly observed, high principal quantum number Rydberg states that conform well with Hund's case (d) electron-core coupling limit. © 2006 American Institute of Physics. [DOI: 10.1063/1.2185635]

### INTRODUCTION

The five-valence-electron open-shell diatomic  $\text{BH}^+$  serves prominently as a prototype for the development and testing of advanced electronic structure theories.<sup>1-5</sup> In practice, small molecular ions, such as the boron hydride cation, form an important constituent of electrical discharges. The spectroscopy of  $\text{BH}^+$ , in particular, has been of issue in the development of diagnostic probes for the study of the hydrogen abstraction reaction,  $\text{B}^+ + \text{H}_2 \rightarrow \text{BH}^+ + \text{H}$ .<sup>6,7</sup>

Our present effort to characterize the level structure of this ionic species is motivated by a need to establish accurate limits for high Rydberg series that we have found in neutral  $\text{BH}$  converging to the  $X^2\Sigma^+$  state of  $\text{BH}^+$ .<sup>8,9</sup> Analysis of periodic trends in this structure, enabling the development of realistic multichannel quantum-defect theory models, requires precise knowledge of ionization thresholds for vibrationally excited states of the core, as well as reliable spectroscopic constants with which to describe the ionic potential surface. However, while numerous *ab initio* studies have addressed the structure and thermochemistry of vibrational ground-state  $\text{BH}^+$ , very little is known experimentally about excited states against which to gauge theoretical potential energy functions of the cation and precisely establish electron binding energies for high Rydberg states of the neutral.

The electronically excited  $A^2\Pi$  state of  $\text{BH}^+$  fluoresces, and studies of the  $A^2\Pi-X^2\Sigma^+$  system of  $^{11}\text{BH}^+$  in emission from hollow cathode discharges by Almy and Horsfall<sup>10</sup> and by Ramsay and Sarre<sup>11</sup> have yielded molecular constants for the  $\nu^+=0$  and 1 levels of the ground state. Chemiluminescent

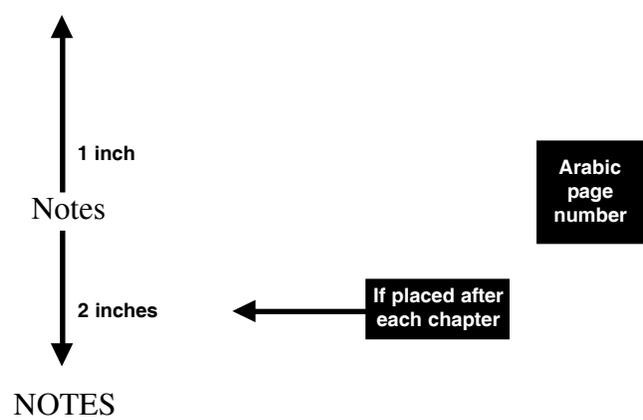
ion-molecule reactions discovered by Ottinger and Reichmuth have further stimulated theoretical interest in the  $\text{BH}^+$  ion.<sup>6</sup> Their results include a series of low-resolution  $\Delta\nu=0$  and 1 spectra of the  $A^2\Pi-X^2\Sigma^+$  system including the (2,2) and (3,3) bands.

The extrapolation of Rydberg series can provide an alternative means to determine the rovibrationally state-detailed level structure and energetics of molecular cations. In conventional practice, double- or triple-resonant excitation isolates atomiclike Rydberg series of high principal quantum number built on state-selected ion cores. In the absence of perturbations, the collection of ionization-detected absorption positions for a sufficient number of Rydberg states allows accurate extrapolation of ionization limits and determination of quantum defects.

Until recently, the Rydberg structure known for  $\text{BH}$  was confined to the few bands observed by Bauer *et al.*<sup>12</sup> in the flash photolysis of borine carbonyl. This structure consists principally of (0,0) bands originating from the  $X^1\Sigma^+$  state of  $\text{BH}$  to the final states that form the six complexes associated with the  $n=3$  and 4 members of the *s*, *p*, and *d* Rydberg series converging to the  $X^2\Sigma^+$  state of  $\text{BH}^+$ . Extrapolating the positions of these features yields an estimated ionization potential of  $9.77\pm 0.05\text{ eV}$ , where sizable error limits reflect the small number of bands in each series. Subsequent electron impact measurements by Steck *et al.*<sup>13</sup> support the Bauer result with less accuracy, placing the ionization potential at  $9.8\pm 0.5\text{ eV}$ .

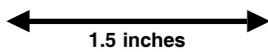
Work in our laboratory has developed a methodology for extending the range of Rydberg states observed for  $\text{BH}$  to much higher principal quantum number.<sup>8,9</sup> In initial experiments, we acquired triple-resonant spectra of Rydberg states with total angular momentum,  $N=1$  converging to the  $X^2\Sigma^+$ ,

<sup>a)</sup>Author to whom correspondence should be addressed. Electronic mail: edgrant@chem.ubc.ca

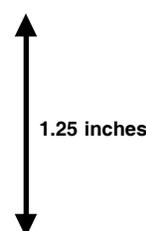
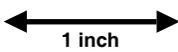


1. Candidates placing their notes at the end of their thesis should treat this section as a major-division (i.e., like a chapter). Notes pages will be appropriately numbered and counted like other pages. Individual entries will be set up and spaced in a manner appropriate to the writing style used elsewhere in your thesis.

2. You also have the option to place your notes after every chapter. However, headings for these sections will be treated as first-order subdivisions (i.e., headings will be in “title case” and begin on their own separate page 1” from the top of the page). Do *not* start your notes section in the middle of a page immediately following text!



3. If you incorporate numerous, lengthy footnotes that continue to “bleed over” to subsequent pages, despite single-spacing, reducing font size, extending bottom page margins, etc., you should consult with your major professor about converting these to *endnotes*, which can provide additional flexibility and extra space.



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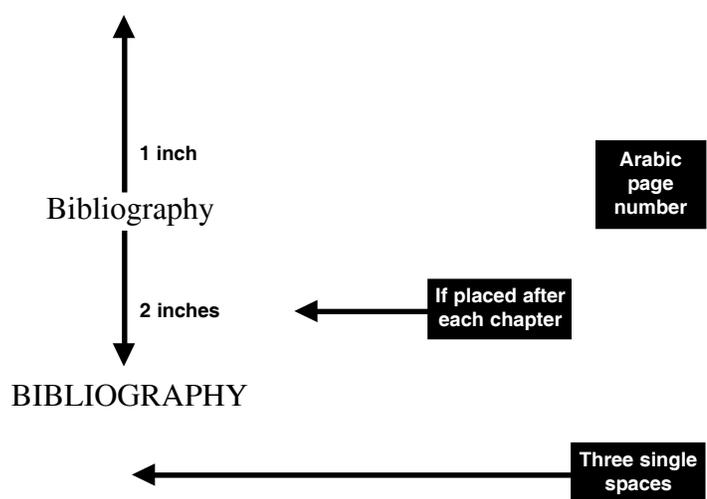
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BIBLIOGRAPHY

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Belury, M., and A. Kempa-Steczko. 1997. Conjugated linoleic acid modulates hepatic lipid composition in mice. *Lipids*. 32:199-204.

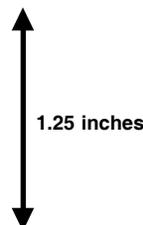
Bennett, A., M. Billett, A. Salter, and D. White. 1995. Regulation of hamster hepatic microsomal triglyceride transfer protein mRNA levels by dietary fats. *Biochemical and Biophysical Research Communications*. 212:473-478.

Chin, S. F., J. M. Storkson, W. Liu, K. J. Albright, and M. W. Pariza. 1994. Conjugated linoleic acid (9,11- and 10,12-octadecadienoic acid) is produced in conventional but not germ-free rats fed linoleic acid. *Journal of Nutrition*. 124(5):694-701.

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Dugan, M., J. Alaus, K Lien, A Schaefer, and J. Kramer. 2001. Effects of feeding different levels of conjugated linoleic acid and total oil to pigs on live animal performance and carcass composition. *Canadian Journal of Animal Science*. 81:505-510.

Eggert, J. M., M. A. Belury, A. Kempa-Steczko, S. E. Mills, and A. P. Schinckel. 2001. Effects of conjugated linoleic acid on the belly firmness and fatty acids composition of genetically lean pigs. *Journal of Animal Science*. 79:2866-2872.



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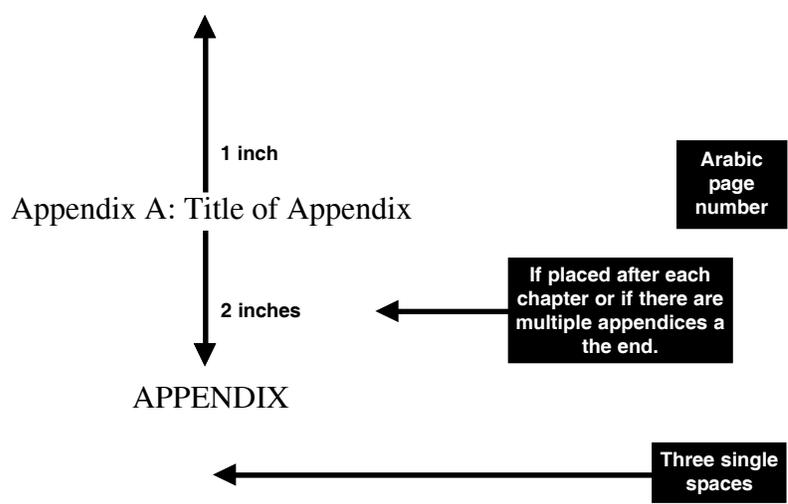
APPENDIX

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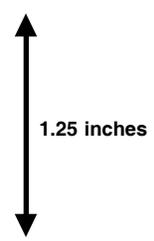
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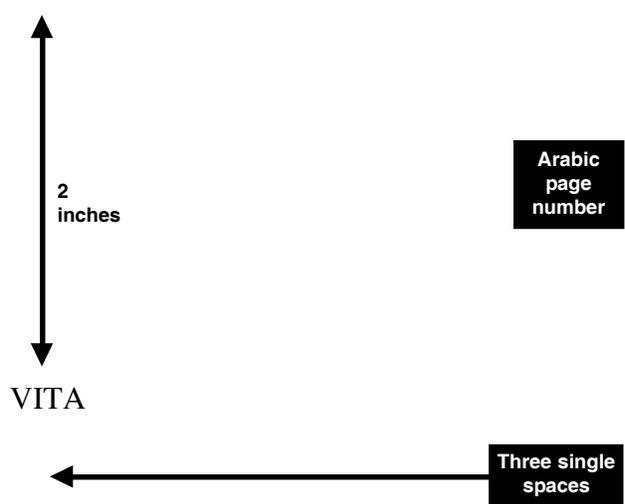
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Your appendix will incorporate additional material deemed necessary by, your major professor and defense committee, to further expand on, and illuminate, the research in the main body of your text.





The style of your vita will often be determined by your department. In most cases it will be two or three paragraphs describing where you came from, what you did at Purdue, and where you are going after you receive your degree. The Graduate School does not evaluate the content of your vita other than ensuring you use proper margins, heading, and pagination. However, logic dictates that your vita should be presented in a succinct and tasteful way.

Some departments require a *curriculum vitae*, which is a detailed summary of your academic and professional career. This normally includes all of your degrees received, academic and/or professional experience, papers delivered, books or articles written, awards received, and membership in relevant organizations. There is no limitation on the length of your *curriculum vitae*. However, the Graduate School requests you “stick to the facts” and avoid overly long *vitae*, unusual fonts, or inclusion of personal photographs.

