

GUIDELINES FOR MASTER OF ARTS IN MEDICAL SCIENCES THESIS
PREPARATION AND SUBMISSION

Division of Graduate Medical Sciences
Boston University School of Medicine

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INTRODUCTION

The completion of a thesis is a major requirement for the Masters of Arts in Medical Sciences (MAMS) degree at Boston University School of Medicine (BUSM). A thesis is a scholarly work that must be approved by a minimum of two faculty members in the field of study and must have an original conclusion. A Master's thesis project is to be well-conceived and of modest scope. The research project may involve library research alone, a laboratory research project alone, or may be a combination of library and laboratory research. The First Reader for the MAMS thesis must be a faculty member of the Division of Graduate Medical Sciences (GMS) at BUSM. The Second Reader does not need to be a member of GMS.

Any student working with a Second or Third Reader who is not a member of GMS must complete the Special Service Appointment Form and submit a copy of the non-GMS reader's CV to GMS for approval. This rule applies to all non-GMS readers whether from other BU schools (i.e., BUSM, SPH, BUSDM, or CAS) or from another institution outside of the BU community. The Special Service Appointment form provides temporary faculty appointment for qualified mentors. The function of the "in-house" Division faculty member as First Reader assures and assumes responsibility that the work is conducted appropriately.

For readers outside of the BU community, the "*Guideline Letter for Mentors Outside Boston University*" which provides information about the MAMS program, the thesis process, and thesis requirements is available at <http://www.bumc.bu.edu/gms/home/mentorletter-2/>

All students should provide their readers the document entitled "*Thesis Reader Responsibilities*" available under *M.A. in Medical Sciences Thesis Information* at <http://www.bumc.bu.edu/master-arts-medical-sciences/current-students/thesis-information-and-forms/>

Students should review the format, content and style of the sample theses that are available in the GMS office (L-315) or at BUSM Alumni Medical Library (L-12).

REQUIRED FORMS

All forms are due to the GMS Registrar approximately 6 months prior to submission of the final thesis. For exact due dates, check the current Graduation Calendar available at <http://www.bumc.bu.edu/gms/current-students/thesis-and-dissertation-deadlines/>

- The Thesis Title Form must be signed by both the First and Second Readers and include a preliminary thesis title. This title can be altered before the final submission of the thesis. This form is available at: <http://www.bumc.bu.edu/gms/home/thesistitle/>

- Students who choose to pursue an “A” grade for completing a laboratory thesis (rather than Pass/Fail credit as for a library thesis) must submit the Thesis Agreement Form signed by both the First and Second Readers. This form is available at: <http://www.bumc.bu.edu/master-arts-medical-sciences/files/2009/08/Thesis-Agreement-Form.pdf>
- A Special Service Appointment Form and your mentor’s C.V. are required if the thesis is completed at an institution other than BUSM or if one of the readers is not a GMS faculty member. This form is available at <http://www.bumc.bu.edu/gms/files/2008/08/special.pdf>
- Students must submit a Diploma Application Form prior to thesis submission. The deadline can be found on the Graduation Calendar and is usually 3 months prior to the thesis submission deadline. The Diploma Application Form is available at : <http://www.bumc.bu.edu/gms/home/madipapp/>

LENGTH OF THESIS

A *library* thesis should be approximately 50 but not less than 45 pages in length, excluding the Prepages, Appendices (if any), References and Vita. It should not be a collection of abstracts on a particular scientific area; rather, the writer should evaluate relevant scientific information and develop an original conclusion based on the literature. A library thesis generally includes the following sections: Introduction, Published Data, Discussion, Conclusion, Future Plans and/or Proposal. A library thesis is graded on a pass/fail basis only.

A *laboratory* thesis may be submitted in publication format or in conventional thesis format and must be a minimum of 35 pages, excluding the Prepages, Appendices (if any), References and Vita. The format generally includes the following sections: Introduction, Methods, Results and Discussion. A Laboratory thesis may earn a Grade of “A” following review by the Thesis Committee and upon the recommendation of the research mentor who indicates that the student’s contribution and quality of work performed are deserving of an “A” grade. Laboratory theses that do not earn a grade of A will receive a Pass/Fail grade similar to a Library thesis.

DEADLINES FOR SUBMITTING MA IN MEDICAL SCIENCES THESES

Theses must be submitted to the GMS office prior to the established deadlines in December, April and August in order to graduate in January, May, or September, respectively. Refer to the current Graduation Calendar for specific deadlines.

You may not submit your thesis to the GMS office until you have completed **all** academic requirements including the remediation of incomplete grades. Thesis submission is the last requirement you fulfill at the University before you are awarded your degree.

In order to ensure that you complete the revisions and modifications that are suggested by your readers, you should plan to submit a complete draft of your thesis to your readers at least 6-8 weeks prior to the thesis submission deadline. The exact due date for the draft should be determined by the student and readers well in advance to ensure that all parties are aware of the deadlines.

Once your first and Second Readers have approved the text of your thesis, you need to arrange for format review by the GMS Registrar, Ms. Millie Agosto. Provide a hard copy and an electronic copy (on CD) of the complete thesis draft to the GMS office and Ms. Agosto will review it for adherence to formatting guidelines. The hard copy with Ms. Agosto's comments will be available for you to pick up at the GMS office 1 to 2 days later. Special arrangements can also be made directly with the Registrar if you intend to complete your thesis outside of the Boston area. Do not prepare the final thesis copies until you have received Ms. Agosto's approval of your thesis format.

PREPARATION OF THE THESIS

This document is intended to explain the thesis standards and required formats established by both GMS and Mugar Memorial Library. This guide does not provide directions on *HOW* to research or write a thesis. Nor does this guide set major stylistic rules for the author. Your readers may suggest or require you to follow a specific journal or other style for your work and this should be discussed with them. Additional information can be found under *M.A. in Medical Sciences Thesis Information* available at <http://www.bumc.bu.edu/master-arts-medical-sciences/current-students/thesis-information-and-forms/>

Spacing, Font and Margins. All textual material in the body of the thesis and its preliminary pages must be double-spaced, and printed single-sided, unless otherwise indicated.

- The Table of Contents, Abstract Page, List of Tables List of Figures and List of Abbreviations must be double spaced.
- Figure legends and long quotations may be single-spaced.
- The References section may be single-spaced with one double space between citations.
- Long quotations must be single-spaced and indented 0.5 in from the right/ left margins.
- Limit your font to Arial or Times with a font size between 12 and 10 points.
- Font type and point sizes must be consistent throughout the thesis.
- Footnotes or tables may be in a smaller font than the main text, but not smaller than 10 pt

The required margins are:

Top Margin:	1.5 inches to first line of text or heading
Left Margin:	1.5 inches
Right Margin:	1 inch with or without right margin justification
Bottom Margin:	1 inch from the bottom of the page

These margins must be used **at all times** and apply not just to the text, but to footnotes, figures, tables, illustrations, references and vita. The only printed material that can be outside of the margins is the page number. If a table or figure is too wide to fit within the left and right margins, rotate the page 90 degrees (i.e., print the page in landscape format). If a page is printed in landscape format, the margins and page numbers do not move along with the figure. The page number on any landscape page *must be in the portrait position*.

Pagination. Every page, starting with the title page and ending with the last page of the vita, must be assigned a number. The preliminary pages must have lower case Roman numerals (e.g., iii, iv, xii) placed at the bottom center of the page. The main text of the thesis must have Arabic numerals (e.g., 1, 2, 3) which may be placed at the bottom center, top center, or top right of the page. The title page and approval page must have page numbers assigned to them, but these numbers should **NOT** be printed on the pages themselves. The preliminary pages should appear in the following order:

Title Page	i (counted, number not printed)
Copyright Page (optional- see below)	ii (counted, number not printed)
Readers' Approval Page (counted, not printed)	ii (counted, number not printed)
Dedicatory Page (optional)	iii
Acknowledgments (optional)	iv
Abstract (maximum 3 pages)	v
Preface (optional)	vii
Table of Contents (may be more than 1 page)	viii
List of Tables (if any)	ix
List of Figures (if any)	x
List of Illustrations or Schemes (if any)	xi
List of Abbreviations (if applicable)	xii
Glossary (if applicable)	xiii
Introduction (first page of body of thesis)	1

Each section of the preliminary pages starting with the Acknowledgments can be more than one page in length, if necessary. If you do not include a particular optional section, simply continue the pagination with the next section that is included in your thesis. The Table of Contents must

include the number of the page where each entry occurs. The Lists of Tables, Figures, Illustrations or Schemes must include the number of the page where each respective table, figure, etc. begins.

The main body of thesis follows the preliminary pages. The body of the thesis is numbered with Arabic numerals starting at 1 and is assembled in the following order:

Main Thesis Body (page 1)
Appendices (if applicable)
List of Journal Abbreviations (if applicable) – This list should be in the same format as the List of Abbreviations in the preliminary pages.
References
Vita (last numbered page(s))

PRELIMINARY PAGES:

Title Page. The thesis title should be a short, meaningful description of the work. The use of acronyms is discouraged, but not prohibited. For terms such as α or β , students should write out the terms as alpha or beta. A sample title page is included on page 14.

Copyright Page. It is your decision whether or not to have your work copyrighted. Most MAMS students do not. You may want to ask your advisors for their opinion on this issue and, if necessary, refer to Mugar Library's guidelines at <http://www.bumc.bu.edu/gms/home/thesisgd/> There may be fees associated with the procurement of a copyright. If you decide not to obtain copyright protection for your thesis, then you do not include a copyright page.

Readers' Approval Page. Every MAMS thesis submitted to GMS and Mugar Library must have a Readers' Approval Page with the original signatures of all readers. Photocopied or faxed signatures are not acceptable. A sample approval page is provided on page 14. Authors should place each reader's highest degrees and official title after his/her name (e.g., Professor of Biochemistry, Associate Professor of Physiology, etc.). If your readers are not BUSM faculty members, you should place the names of their institutions after their official titles.

Dedicatory Page. This page is optional and can be written in the format of your choice.

Acknowledgements. This page is optional. Candidates often insert a brief acknowledgement to those who assisted in the thesis work and/or their graduate education. This page is the first numbered page and must be listed in the Table of Contents.

Preface. This page is optional. Format must be similar to the rest of thesis (i.e., double-spaced).

Abstract. Each thesis must include an abstract, regardless of whether the document is a library or laboratory thesis. The abstract should contain a clear and brief statement of the problem, the procedure(s) and/or method(s) used, the results and the conclusions. The abstract should be a succinct account of the entire thesis. A sample abstract page is provided on page 15. Graphs, charts, tables, references and illustrations should not be included in the abstract. Symbols, abbreviations and acronyms should be minimized. The length of the abstract is not limited, but most abstracts do not exceed 3 pages.

Table of Contents. The Table of Contents must list the sections of the thesis from the Title Page to the last page of the Vita. Page numbers should be indicated for all entries. Even though no page numbers are included on the Title Page and Readers' Approval Page, they should be numbered (i) and (ii) in the Table of Contents.

Lists of Tables, Figures, Illustrations and Schemes. A List of Tables including table number, title and page number must follow the Table of Contents. A List of Figures, in the same format, should follow the List of Tables. A List of Illustrations or Schemes, if they are included in the thesis, should follow the List of Figures.

List of Abbreviations. If you use abbreviations in your thesis, you must include a List of Abbreviations after the last List of Figures, Tables, or Illustrations and Schemes. The List of Abbreviations must be arranged alphabetically according to the abbreviation, not according to the order of appearance in the text, and should be prepared using the following format:

AD	Alzheimer's disease
β-amyloid	beta amyloid
PBS	phosphate-buffered saline
SDS-PAGE	sodium dodecyl sulfate polyacrylamide gel electrophoresis

Glossary: A glossary (if applicable) should follow the List of Abbreviations and be in a similar format.

BODY OF THESIS:

Specific Aims, Current Study, or Objectives: Both library and laboratory theses should include a section called Specific Aims, Current Study or Objectives, as appropriate. This length of this section is variable and can be included as part of the Introduction or as a separate section that is positioned before the Methods section at the end of the Introduction. The Specific Aims, Current

Study or Objectives section states why you undertook the study, what your hypothesis and goals were, what you planned to do specifically (in list or paragraph form) and what you hoped to learn from the study. This section is approximately one page in length.

Appendices: Appendices should precede the References section and can be single-spaced or 10 point font provided they are readable and have the correct margins.

List of Journal Abbreviation: If you use abbreviated journal titles in the References section, then you must include a List of Journal Abbreviations, in alphabetical order, with the corresponding complete titles (available at <http://www.ncbi.nlm.nih.gov/journals>). The List of Journal Abbreviations should be placed before the References section. The format for the List of Journal Abbreviations is as follows:

BMJ	British Medical Journal
EMBO J.	EMBO Journal
JAMA	Journal of the American Medical Association
Proc. Nat. Acad. Sci. USA	Proceedings of the National Academy of Sciences of the United States of America

References: You may single-space your citations, but leave one double-space between citations. Standard format for MAMS theses is the APA format. Students may cite articles by authors' last name(s) and year such as (Jones, 2009; Smith et al., 2008; Ryan and Williams, 2006) or by numerical designations such as (33) or (1, 3-5) where the numbers correspond to the number of the citation in the References section. All citations regardless of format should be placed at the end of the sentence but before the period. If footnotes are used, then the number of the footnote should be placed at the end of the sentence after the period.

Vita: This is a short description of your professional life up to the point at which your degree is awarded. Your vita may be written in either résumé or narrative format but must include your full name, year of birth (**not** your birth date), and a contact address where you can be reached for at least the next 1–2 years. A vita may also include (but is not limited to) your previous education, degrees, awards or honors, professional positions held, employment and publications. Please limit your vita to no more than three pages.

Figures and Tables: Figures and tables may be included within the text of the thesis or at the end of the thesis. All figures and tables must be numbered sequentially and be referred to in the text. Color in charts, graphs, or figures is acceptable provided it is of high quality. Each figure or table must include a clear title (which is included in the List of Tables or List of Figures in the

preliminary pages) followed by a detailed descriptive legend. The table or figure should be clear to the reader in the absence of the description in the text.

- A figure reproduced from a publication should be cited in the legend as follows:
“Figure taken from Smith et al., 2008” or “Table amended from Jones, 2009”.
The full citation should be included in the References section.
- A figure that was downloaded from a website should be cited in the legend as follows:
“Figure downloaded from “American Cancer Society at <http://www.cancer.org>”.
The full citation should be included in the Reference section as “American Cancer Society. *Title of Figure*, Retrieved September 28, 2008 from <http://www.cancer.org>.”

If references are cited numerically, designate the website by name in the figure legend to give credit.

Permission to Use Copyrighted Material: If you directly reproduce material from a copyrighted source in your thesis, you may need to obtain written permission for its use and indicate that permission in a footnote or caption with the material. Such material may include graphs, charts, figures, photographs, computer programs, etc.

For most MAMS theses, this is not necessary because a student can quote up to 1.5 single-spaced pages from one source without asking for permission. If you quote the same source several times throughout the thesis, you must determine the total number of lines that you have cited to make sure that you are within the allotted 1.5 single-spaced pages. All reproduced content *MUST* be given proper credit and cited to avoid acts of plagiarism.

When reproducing figures from websites or publications, a limit of three figures per publication is strictly enforced. Reproduce only the figure itself and write your own figure legend. Legends reproduced from the original text often have fonts that are too small for the thesis.

For further details, please review *Research Guide for Writers of Theses and Dissertations* at <http://www.bumc.bu.edu/gms/home/thesisgd/>

Quality of Paper: High quality 8.5” x 11” white bond paper should be used for final copies. 20 lb-weight paper with 25% cotton or rag content is required. Acid-free, non-yellowing paper, sometimes referred to as Archival Bond, is recommended. Many students purchase Southworth brand paper such as Southworth Fine Business Paper, 25% Cotton, 20 lb, White, watermarked. Other types of paper are also acceptable provided they meet these requirements and have a watermark.

Delayed Circulation: In rare circumstances, a student may not want his or her thesis to be placed on reserve or be circulated after it is submitted to Mugar Library. Students should discuss this issue with their thesis advisor initially before choosing a thesis project as delayed circulation is strongly discouraged. Circulation restrictions are granted only in limited circumstances, but may be allowed by the University if the author plans to sell the work to a publisher, apply for a patent, or if the material covers a sensitive subject that cannot safely or appropriately be published at the time of thesis submission. In such circumstances, you may request a restriction of the circulation of the thesis for a period not to exceed five years. You must submit a letter to request delayed circulation to the Associate Provost of the Division of Graduate Medical Sciences in 8 weeks in advance of the final thesis submission deadline. The letter must contain your reason for the request for delayed circulation, the time limit for the restriction, an address where you can be contacted when the time limit expires, and must contain signatures of the student, his/her major thesis advisor and additional reader(s). Further details about delayed circulation and a sample letter are provided in the *Research Guide for Writers of Theses and Dissertations* available at <http://www.bumc.bu.edu/gms/home/thesisgd/>

PROCEDURE FOR SUBMITTING A MA IN MEDICAL SCIENCES THESIS TO THE DIVISION OF GRADUATE MEDICAL SCIENCES

Students in the MAMS program should submit their theses directly to Division of Graduate Medical Sciences in Room L-315. The Registrar, Millie Agosto, will accept the thesis and deliver the copies to Mugar Library. Please follow these instructions when submitting your thesis:

Once your first and Second Readers have approved the text of your thesis, you need to arrange for format review by the GMS Registrar, Ms. Millie Agosto. Provide a hard copy AND an electronic copy (on CD) of the complete thesis draft to the GMS office no earlier than one month prior to final submission and Ms. Agosto will review it for adherence to formatting guidelines. The hard copy with Ms. Agosto's comments will be available for you to pick up at the GMS office 1 to 2 days later. Special arrangements can also be made directly with the Registrar if you intend to complete your thesis outside of the Boston area. Do not prepare the final thesis copies until you have received Ms. Agosto's approval of your thesis format.

1. Submit two copies of the thesis with original signatures on the Readers' Approval Page. The signature pages must be printed on the same type of paper as the thesis.

Do NOT bind any of the thesis copies. Do not staple it. Do not use binder or paper clips. Put each thesis copy in a manila envelope or back into the original paper box to protect the documents while you transport them to the GMS office.

2. If you have conducted a laboratory thesis and previously submitted a Thesis Agreement Form, you should ask your mentor to write a letter that recommends your thesis for a grade of “A”. The letter should be addressed to:

Linda E. Hyman, Ph.D.
Associate Provost, Graduate Medical Sciences
Professor, Department of Microbiology
Boston University School of Medicine
72 East Concord Street – L315
Boston, MA 02118

This letter should be submitted with the thesis.

A third UNBOUND thesis copy (on REGULAR copier paper) with original signatures should be submitted for review by the Thesis committee for a grade of “A”. Additional information can be found at <http://www.bumc.bu.edu/master-arts-medical-sciences/files/2009/08/Thesis-Agreement-Form.pdf> need to change title to Graded Laboratory Thesis

3. Bring a check or money order in the amount of \$25.00 made payable to “Boston University” with you when you submit your final thesis documents. This covers the cost of archiving the two copies of the thesis. If you are leaving the area and closing your bank account, please use a bank or postal money order. The GMS office cannot accept cash for this fee.

4. Fill out the form on which you indicate how you wish your name to appear in the Mugar Library catalog. This form is provided by GMS when you submit your thesis.

5. When your final thesis copies have been prepared and your readers have examined them and signed the Readers’ Approval Page, please call (617) 638-5124 or email Millie Agosto (millie@bu.edu) to finalize the time for submission of your documents to the GMS office. The submission process takes approximately 15 minutes and you must submit your check and all all forms when you submit the thesis.

THE DEADLINE FOR SUBMITTING YOUR THESIS IS A FIRM ONE AND CANNOT BE EXTENDED FOR ANY REASON.

Additional resources for writers of theses is available at in the Mugar document *Research Guide for Writers of Theses and Dissertations* at <http://www.bumc.bu.edu/gms/home/thesisgd/> If you are having any difficulties with your thesis or have questions regarding the procedures for completing your GMS requirements, please contact Millie Agosto or the GMS office staff.

If you have additional questions about the formatting of your thesis or copyright procurement, please contact Brendan McDermott (brendan@bu.edu), Thesis/Dissertation Coordinator, Mugar Library, Bibliographic Services, Third Floor. His phone numbers are (617) 353-9387 or (617) 353-3713.

<Sample of Title Page for Final Copies of MAMS Theses>

BOSTON UNIVERSITY

SCHOOL OF MEDICINE

Thesis

THE TITLE OF THE MASTER'S THESIS IN ALL

CAPITAL LETTERS BOLD AND CENTERED

by

YOUR FULL NAME IN ALL CAPITAL LETTERS BOLD AND CENTERED

[Your name should be in order of first, middle, and last]

A.A., Fisher Junior College, 1989

A.B., Harvard University, 1993

Submitted in partial fulfillment of the

requirements for the degree of

Master of Arts

201__

[year in which degree will officially be conferred]

A Roman numeral does not appear on this page, although the page is counted in the Table of Contents.

<Sample of Approval Page for Final Copies of MAMS Theses>

Approved by

First Reader _____
Name of First Reader, Ph.D.
Professor of

Second Reader _____
Name of Second Reader, Ph.D.
Associate Professor of

Third Reader _____
Name of Third Reader, Ph.D. (if applicable)
Lecturer in
Harvard University, School of Medicine

A Roman numeral does not appear on this page, although the page is counted in the Table of Contents.

<Sample of Abstract Page for Final Copies of MAMS Theses>

TITLE

Title of Master's Thesis in all capital letters, bold and centered

NAME

Your Full Name (First, Middle, Last) in all capital letters, bold and centered and matching name on Title Page)

Boston University School of Medicine, 201__

Major Professor: Name (*of your First Reader*), Ph.D. /M.D., Professor of (*wrap around to this point if name and title are too long for one line*)

ABSTRACT

The body of the abstract begins here and is double-spaced.

A lower case Roman numeral should be placed at bottom center of this page.