

# MASTER'S AND DOCTORAL PROGRAM RESEARCH GUIDELINES

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## Overview of the Master's Essay

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### Guidelines for the Master's Essay

#### Difference between a master's essay and master's thesis

A master's thesis must describe original research conducted by the student. It also involves two oral exams. MS students must do a thesis.

A master's essay can describe the student's original research, but it does not have to do so – other options include a literature review, a grant proposal, or a surveillance report. The essay may be in the same format and of similar content as a master's thesis, but it does not have to be. No oral exams are required for an essay. MPH students must do an essay.

#### Criteria for an acceptable essay

The acceptable formats for a master's essay are the following:

- a journal article reporting on original research, much like a master's thesis
- a review of the literature on a specific public health topic
- a grant proposal describing an hypothetical epidemiologic study to be conducted
- a surveillance report based on local or national surveillance data
- another format agreed upon in advance by the student, advisor, and essay readers

If the student is to conduct original research, this can be done in the following ways:

- Collecting new data – e.g., the student adds data to an existing study or executes a small study on his or her own
- Doing something novel with existing data such as applying a new analytic technique, making novel use of an existing technique, or combining datasets
- Overseeing data collection or management
- Developing a new protocol or way of collecting data
- Executing additional laboratory assays or genetic evaluation of existing samples

#### Timing of committee formation, first draft, and revisions

MPH students should form their essay committees at least 3 months before their expected graduation date. A committee must consist of at least two readers (see "Essay Committee Composition" under "Master's Degree Programs" in the Student Handbook). The student's academic advisor should send an e-mail to Cathy Sobocinski in Student Services listing the essay readers. Readers must be approved by the Department Chair and the Student Affairs office. The student should describe the nature of his essay to each reader at the time of committee formation so that readers can determine whether the essay topic is suitable.

An outline of the essay should be given to readers two months before the end of term. The first draft of the essay should be submitted to readers at least one month before the last day of term. Readers should return comments within 2 weeks of receiving an outline or a manuscript.

Milestone	Fall term due date	Spring term due date
Select readers, notify Dept.	September	January
Submit outline to readers	Mid October	February
Submit first draft to readers	November 6	March 16
Submit second draft to readers	November 30	April 6
Submit final draft	December 16	April 22

### Guidelines for the written format of the essay

- Original research

Use journal article format, with the goal of publication in a journal (this is the standard to strive for, but actual publication or submission is not required). The length of the article should be that of an original research journal article.

- Literature review

The introduction should include the research question and its importance to public health. The methods section should explain how the literature review was conducted, the results section should summarize the current literature on the topic, and the discussion section should summarize what is currently known and what further research is needed. Suggested length is 20-40 pages.

- Grant application

A hypothetical grant proposal should be in the format of a standard NIH grant application. Suggested length is 20-30 pages.

- Surveillance report

A surveillance report should include text, tables and graphs in a format similar to those used by CDC and state health departments (see MMWR article “[Surveillance for Acute Viral Hepatitis --- United States, 2006](http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5702a1.htm)” at website <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5702a1.htm> or other MMWR surveillance reports as examples). Suggested length is 20-30 pages.

The abstract of an essay is limited to 350 words as per GSPH policy. For other format requirements, see instructions provided by Joanne Pegher in the GSPH Student Affairs office. Please pay attention to formatting requirements early in the process so as to save time and frustration at the end.

### Final written paper

There is usually work to be done after the first draft is submitted. If readers indicate that changes to the essay should be made, they should not sign the Report on Requirements form or the essay signature page until they have seen and approved those changes.

### Grading

Readers will grade the essay on a 3-point scale (3=exceeds expectations, 2=meets expectations, 1= does not meet expectations). Readers should assign an overall score, as well as scores for various components: understanding of public health importance, review of the literature, grasp of study design and statistical analysis, strength of conclusions and recommendations, and quality of writing (see attached grading form). The readers should not approve the essay unless it is worthy of an overall score of 2 or 3. After all revisions to the essay are made, the readers should reach a consensus about the final scores, and the academic advisor should complete the grading form. A copy of the grading form should be given to the student and to the Student Services Office (A536 Crabtree).

If the student fails to meet passing standards after two rounds of comments from readers, the advisor can ask the student to either continue the editing process or embark on a different essay topic.

### **Authorship**

If the essay is to be submitted for publication, readers may be included as authors on the paper, but this is not a requirement. The primary advisor and student should make this decision and it should be based on the degree to which a given reader influenced or contributed to the paper.

Time limits should be set so that publication is not delayed if the graduate does not submit the paper following graduation. For example, the advisor and student may decide that if the work is not submitted for publication within 6 months of graduation, the materials will be turned over to the advisor so that the advisor can move forward with the publication.

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## **Overview of the Master's Thesis**

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### **Guidelines for the Master's Thesis**

#### **Difference between a master's essay and master's thesis**

A master's thesis must describe original research conducted by the student. It also involves two oral exams. MS students must do a thesis.

A master's essay can describe the student's original research, but it does not have to do so – other options include a literature review, a grant proposal, or a surveillance report. No oral exams are required for an essay. The essay may be in the same format and of similar content as a master's thesis, but it does not have to be. MPH students must do an essay.

#### **Definition of a good thesis**

A good thesis topic provides the student with an opportunity to apply epidemiology concepts and develop research skills. The thesis should advance knowledge and, ideally, answer one or more important questions. The thesis is an important step in training the student to ask good questions as well as learning how to go about answering them. A good thesis is of publishable quality.

#### **Criteria for an acceptable thesis**

The thesis should report on original research by the student. This requires that the student take total "ownership" of at least a piece of the thesis work. Examples of ways that this can be done include the following:

- Primary data collection – e.g., the student adds data to an existing study or executes a small study on his or her own
- Doing something novel with existing data such as applying a new analytic technique, making novel use of an existing technique, or combining datasets
- Overseeing data collection or management
- Developing a new protocol or way of collecting data
- Executing additional laboratory assays or genetic evaluation of existing samples

Through these activities, the student should understand the basic process of data collection and should gain experience in collaborating with others.

### Timing of committee formation and oral exams

An MS student should form his thesis committee at least 3 months before his expected graduation date. The student's academic advisor should send an e-mail to Cathy Sobocinski in Student Services listing the thesis committee members. Committee members must be approved by the Department chair and the Student Affairs office (see "Thesis Committee Composition" under "Master's Degree Programs" in the Student Handbook) The student should describe his proposed thesis project to each committee member at the time of committee formation so that committee members can determine whether the thesis topic is suitable.

MS students are required to have two oral exams, the **Comprehensive** and the **Final Defense**. The exact timing of these exams is at the discretion of the committee chair. The Comprehensive Exam ideally takes place 2 months before the last day of term in which the degree is to be granted (it **must** take place at least one month before the last day of term according to GSPH policy). A written outline should be given to committee members before this exam. The Final Defense should take place at least 2 weeks before the last day of term. A draft of the written thesis should be given to committee members at least 2 weeks before this exam. All committee members should be reasonably comfortable with the student's progress before allowing the Final Defense to go forward. Comments on the draft and the Final Defense should be given to the student within a few days following the exam.

Milestone guidelines	Fall term due date	Spring term due date
Select committee members, notify Dept.	Early September	Early January
Submit outline to committee	Mid September	Mid January
Submit intro/methods to committee	Early October	Early February
Comprehensive exam	Mid October	Mid February
Submit first draft to committee	November 6	March 16
Submit second draft to committee	November 30	April 6
Final defense	Early Dec	Mid April
Submit final draft to committee	December 16	April 22

### Content of exams:

**Comprehensive:** Generally, the student presents the literature review and demonstrates how the proposed thesis will fill a void in the existing literature. Preliminary data may be presented. The committee should focus on whether or not the student has the skills to move forward with the thesis work.

The purpose of this exam is to discuss with the committee issues related to project design and analysis. Enough information should be presented so that any concerns of the committee will be raised at this stage.

**Final Defense:** The purpose of this exam is to present the completed thesis work. Note that it is termed "defense" for a reason. The student must be prepared to defend the research against any and all questions, some of which may not have been raised before. This requires the successful candidate to be fully versed in all aspects of the research. To be ready, the candidate must demonstrate a complete understanding of the material in the thesis, be polished in presentation skills and be able to fluently answer questions about the research. He must be able to put material in perspective relative to the existing literature. Knowing the answer to all questions is not as important as knowing how to go about answering them.

## Conduct of the Oral Exams

When all committee members have convened, the chair asks the candidate to leave the room for a few minutes. At this time, the Chair provides a brief description of the candidate's strengths and weaknesses. It is important for the Chair to be honest with any concerns that he or she has. This is the chance for the Chair to get opinions and suggestions from other committee members. The Chair may wish to bring along the candidate's school record which can be signed out from the Student Services office (please request these materials in advance). Permission for this is granted only to the Chair of the committee. When the review of the candidate is completed, the candidate is invited back into the room and the exam begins.

The candidate presents materials that have been prepared in consultation with the committee chair. It is important to realize that sufficient time must be left for discussion. While the length of the presentation will vary and is at the discretion of the committee chair, 20 slides usually leaves sufficient time for discussion. After the presentation and question and answer period, the Chair asks the candidate to leave again, and the committee privately discusses their decision. Recommendations on how to address weaknesses are provided to the Chair who relays the comments to the candidate. Committee members are encouraged to provide input directly to the candidate as well.

If the committee indicates that the candidate is not ready to pass the exam, the deficient areas are noted and the criteria for a success are provided to the candidate. This rarely happens because the committee chair should have a reasonable sense of where the candidate is and should make sure that he or she is ready for a given exam before it is scheduled. Students who insist on an exam against the advice of their Chair should recognize the potential consequences of such an action.

Assuming the candidate passes, committee members sign the "Report on Requirements" form. The Chair is responsible for bringing this form to the meeting. The form can be downloaded from the Department's web site from the Student Handbook's "Frequently Used Forms and Documents" section.

## Guidelines for the written portion of the thesis

The thesis should be written in the format of a journal article such that it can be published if of sufficient quality. The abstract is limited to 350 words as per GSPH policy. For other format requirements, see instructions provided by Joanne Pegher in the GSPH Student Affairs office

## Options when the masters candidate is not performing at a sufficient level

**Comprehensive Exam:** If the committee has concerns about the ability of a student to complete his or her thesis work, then it will not pass the candidate on the Comprehensive Exam. It can recommend switching the subject matter of the thesis. It is critical that the committee be honest with the student and also open with one another. If the probability of the student completing the work is judged to be low, then it is best for all involved for an alternate path to be identified at this time, such as providing the student with more time or switching topics.

**Final Defense:** If a student fails the final defense, this represents lack of preparation by the student and lack of guidance by the committee. Thus, all committee members should be reasonably comfortable with progress before allowing the defense to be scheduled. If the student insists on going forward without the recommendation of the committee chair, failure is a possibility. If a student fails, he/she may be granted a second attempt at the discretion of the committee chair.

## **Final written paper**

There is often work that must be done after the Final Defense. If committee members indicate that changes to the thesis should be made, they should not sign the thesis signature page until they have seen and approved those changes.

## **Grading**

Committee members will grade the thesis on a 3-point scale (3=exceeds expectations, 2=meets expectations, 1= does not meet expectations). The committee should assign an overall score, as well as scores for various components: understanding of public health importance, review of the literature, grasp of study design and statistical analysis, strength of conclusions and recommendations, quality of writing, and clarity of oral presentation (see attached grading form). The committee should not approve the thesis unless it is worthy of an overall score of 2 or 3. After all revisions to the thesis are made, the committee should reach a consensus about the final scores, and the committee chair should complete the grading form. A copy of the grading form should be given to the student and to the Student Services Office (A536 Crabtree).

## **Authorship**

If the thesis is to be submitted for publication, committee members are often included as authors on the paper, but this is not a requirement. The primary advisor and student should make this decision and it should be based on the degree to which a given committee member influenced or contributed to the paper.

Time limits should be set for publication of the material following graduation. For example, the advisor and student may decide that if the work is not submitted for publication within 6 months of graduation, the materials will be turned over to the advisor so that the advisor can move forward with the publication.

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## **Overview of the Dissertation Process**

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**Guidelines for the Doctoral Dissertation, drafted by KST  
Last Reviewed April 29, 2009**

### **Definition of a good dissertation**

A good dissertation provides the student with an area of concentration that is the “spring board” for their career. The dissertation should advance knowledge and answer one or more important questions, but it should also raise more questions, thus providing the impetus for further research. A good dissertation ties together didactic coursework and allows the student to see how research is accomplished. The dissertation is an important step in training the student to ask good questions as well as learning how to go about answering them. If the process works as it should, the committee learns from the experience as well as the trainee.

### **Criteria for an acceptable dissertation**

If the process is working as it should, then by the final dissertation defense, the trainee should understand a portion of the topic better than anyone else. This requires that the trainee take total

“ownership” of at least a piece of the dissertation work. Examples of ways that this can be done include:

- Primary data collection – e.g., the student adds data to an existing study or executes a small study on his or her own
- Doing something novel with existing data such as applying a new analytic technique or making novel use of an existing technique
- Overseeing data collection or management.
- Developing a new protocol or way of collecting data
- Executing additional laboratory assays or genetic evaluation of existing samples

Through these activities, the trainee should understand the basic process of data collection and should gain experience in collaborating with others.

### **How the dissertation work progresses relative to the required oral exams**

Ph.D candidates are required to have three oral exams, the **Overview**, the **Comprehensive** and the **Final Defense**. The Overview and Comprehensive exams can be taken at the same time. For Dr.P.H. candidates, there are four exams: the Qualifying (which takes the place of the written preliminary exam), the Overview, the Comprehensive, and the Final Defense. As for Ph.D. candidates, the Overview and Comprehensive exams for Dr.P.H. candidates can be taken at the same time.

The exact timing of these exams and whether or not the Overview and Comprehensive are combined is at the discretion of the primary advisor. It should be noted that the Comprehensive and Final Defense cannot occur in the same term. Thus, if the trainee has a deadline for graduation, the primary advisor may choose to schedule the Comprehensive earlier in the course of the research. It is important to realize that dissertation work does not always fit a set schedule. The successful doctoral candidate is one who realizes that research does not always go according to plan and deadlines are secondary to accomplishing what is required of a dissertation.

Although a minimum of two, and often three meetings of the doctoral committee are required (Overview, Comprehensive, and Defense), working meetings of the committee should be considered throughout the dissertation process, but particularly between the Comprehensive and Final Defense to ensure that the Final Defense goes smoothly. If the trainee is working closely with all committee members throughout the process, then these additional meetings may not be necessary.

**Qualifying exam** (Dr.P.H students only): This exam takes the place of the written preliminary exams. As such, the meeting often includes more rote questioning of the candidate to ensure that he or she understands the basic concepts of epidemiology and is ready for dissertation work. The committee that conducts this exam is distinct from the dissertation committee. While the membership of this committee may overlap (and even be identical to) the dissertation committee, approval of both committees must be sought by the primary advisor.

**Overview:** The purpose of this exam is to approve the candidate as a doctoral candidate capable of doing meritorious research in the specific area. The candidate may identify the general area of research for the Dissertation. Generally, the trainee presents the literature review and demonstrates how the proposed dissertation will fill a void in the existing literature. The first paper of a three-paper format is at least identified, and preliminary data for this first paper may be presented. The committee should focus on whether or not the trainee has the skills to move forward with the dissertation work, whether or not the dissertation topic is feasible, and whether it will meet the criterion of filling a void in the existing literature.

**Comprehensive:** The purpose of this exam is to present data from the dissertation and to discuss with the committee issues related to project design and analysis. Ideally, if a three paper option is being pursued, all three papers will at least be outlined. The key here is that enough information should be presented so that any concerns of the committee will be raised at this

stage. This will allow these issues to be addressed by the time of the Final Defense. If this is not possible, then the primary advisor may recommend an interim working committee meeting prior to the Final Defense.

**Final Defense:** The purpose of this exam is a final presentation of the dissertation work. Note that it is termed “defense” for a reason. The student must be prepared to defend the research against any and all questions, some of which may not have been raised before. This requires the successful candidate to be fully versed in all aspects of the research. If the committee and the trainee have worked well together, then this exam may end up being a formality and the student can revel in the accomplishment because the occasion marks the formal transition from trainee to researcher. As such, the candidate often chooses to invite other student, friends and family to the occasion so that they can share in their success. Thus, the primary advisor should not allow this exam to go forward if they do not feel that the trainee is ready. However, there should never be a complacency that the defense will, in fact, be a mere formality. Regardless of frequency of contact and familiarity of work by committee members, issues may arise, as a result of, for example, newly discovered results or something in the presentation triggering a previously unconsidered thought, so it is not uncommon for students to have to vigorously defend issues previously thought to be settled. To be ready, the candidate must demonstrate a complete understanding of the material in the dissertation and surrounding the research, be polished in their presentation skills and be able to fluently answer complex questions about the research, not all of which may even be in the dissertation. Successful candidates need to be able to think on their feet and respond to unexpected questions. They must be able to put their material in perspective relative to the existing literature. In the best cases, the presentation becomes a dynamic discussion of the research area at which the candidate demonstrates that he or she can both raise and answer questions at the same level as the committee members. Knowing the answer to all questions is not as important as knowing what questions to ask and how to go about answering them.

### **Conduct of the Oral Exams**

When all committee members have convened, the chair asks the candidate to leave the room for a few minutes. At this time, the Chair provides a brief description of the candidate’s strengths and weaknesses. It is important for the Chair to be honest with any concerns that he or she has. This is the chance for the Chair to get opinions and suggestions from other committee members. The Chair may wish to bring along the candidate’s school record which can be signed out from the Student Services office. Permission for this is granted only to the Chair of the committee. When the review of the candidate is completed, the candidate is invited back into the room and the exam begins.

The candidate executes presented materials that have been prepared in consultation with his or her advisor. It is important to realize that sufficient time must be left for discussion. While the length of the presentation will vary and is at the discretion of the primary advisor, 45 slides is a number that usually leaves sufficient time for discussion. After the presentation and question and answer period, which may include questions from anyone in attendance (Note: the Final Defense is advertised in the University Times and open to anyone), the Chair asks the candidate to leave again, and the committee privately discusses their decision. Recommendations on how to address weaknesses are provided to the Chair who relays the comments to the candidate. Committee members are encouraged to provide input directly to the candidate as well.

If the committee indicates that the candidate is not ready to be passed for the given exam, then the deficient areas and criteria for a success are explained to the candidate. This rarely happens because the primary advisor should have a reasonable sense of where the candidate is and should make sure that he or she is ready for a given exam before it is scheduled. Students who insist on a defense meeting against the advice of their Chair should recognize the potential consequences of such an action.

Assuming the candidate passes, the required form is signed. The Chair is responsible for bringing this form to the meeting. The form can be downloaded from the Departmental Web site.

## Guidelines for the written portion of the dissertation

The three paper format of the dissertation has the advantage of ensuring that the substantial work done by both the trainee and the primary advisor ends up as part of the literature. For this option, the format below is suggested. However, it should be noted that this is at the discretion of the primary advisor.

**Introduction and Background:** This section should be sufficient to identify the "hole" in the literature that the dissertation is meant to fill. While this is generally 10-20 pages in length, it should be noted that this is a processed version of the literature review and not a complete review in and of itself. The trainee will need to do a substantial literature review in order to understand how the research fits in with the literature. The only portion of this that is required to be in the written version of the dissertation is what is needed to set the stage. The idea is not only to avoid a huge document that the committee has to plow through and edit (very time consuming for candidate and committee member) but also to encourage the candidate to distill a large body of literature into a concise rationale for the proposed research. The dissertation as a whole should have a theme to which all three papers contribute.

**Three Projects:** Each project should be presented with a short paragraph introducing how the project relates to the dissertation.

### General Discussion

**Summary of Findings** – The three projects should be tied together and their place in the literature discussed. Because the three projects each contain a discussion section, this section may be on the shorter side. The purpose of this discussion is to deal with the three papers together rather than individually.

**Public Health Significance** – How is this work important in the context of Public Health?

**Strengths and Weaknesses**

**Future Research:** what are logical "next questions" raised by the research?

**Conclusion:** What is the final conclusion from the completed dissertation work?

### Authorship

Committee members are often included on the papers produced by the dissertation work, but this is not a requirement. The primary advisor and trainee should make this decision and it should be based on the degree to which a given committee member influenced or contributed to each paper.

It is recommended that the primary advisor and trainee decide the fate of papers that are unpublished as of the time of graduation. Time limits should be set so that papers are not held up if the graduate does not submit papers following graduation. For example, the advisor and trainee may decide that if the work is not submitted for publication within 6 months of graduation, the materials will be turned over to the advisor so that the advisor can move forward with the publication.

### Options when the doctoral candidate is not performing at a sufficient level.

There are several critical points at which the primary advisor needs to be confident that the trainee is capable before allowing him or her to move forward. If the trainee successfully passes the Comprehensive exam, then it will be very difficult to justify why he or she does not finish, short of not completing the required work. Potential points at which the advisor might recommend an alternate path for the trainee are as follows:

**Preliminary exams:** If a student fails the preliminary exams twice, then he or she can only take them for a third time if the Department Chair receives permission from the School (Mary Derkach). Thus, the chair will need a well-argued rationale from the primary advisor. Careful thought must be given to this request. The advisor may recommend that the trainee complete all requirements for a Masters degree first. Upon successful completion of this, the primary advisor might consider making a case for a third try with the preliminary exams. It should be noted that it is up to the student to demonstrate to their advisor that they are capable of doctoral level work. The student can not make this sort of request if they have doubts about the ability of the student to be successful.

**Overview Exam:** A primary advisor may choose to allow a borderline student to move forward with the overview exam. The purpose of this would be to allow the committee members to help identify whether or not the trainee is considered to be of sufficient caliber to complete the dissertation work. **In the case of a borderline trainee, it is strongly recommended that the Overview and Comprehensive exams be done separately rather than combined.** If, at the end of the overview exam, the committee is in agreement that the candidate is not ready for doctoral level work, then the option of completing a Masters thesis can be discussed with the candidate. The option of switching advisors can be raised at this time as well. Sometimes the interests of the trainee and the primary advisor are not well matched and this can be the root of poor progress by the trainee. In this situation, the student is given the responsibility of identifying an alternate advisor. If the faculty member accepts, then an advisor change form is completed. It is best if the original advisor remains on the trainee's committee, although this is not required.

**Comprehensive Exam:** If the committee has concerns about the ability of a trainee to complete his or her dissertation work, then they will not pass the candidate on the Comprehensive Exam. Options at this point are, as above, recommending a Masters degree first, or switching the subject matter of the dissertation. Failing a Comprehensive Exam is rare. However, it is critical that the committee be honest with the trainee and also open with one another. If the probability of the trainee completing the work is judged to be low, then it is best for all involved for an alternate path to be identified at this time. If a primary advisor is concerned about the progress of a trainee, then this should be discussed with both the candidate and the other committee members prior to scheduling the Comprehensive Exam.

**Final Defense:** If a trainee fails the final defense, then this represents lack of preparation and guidance by the committee and primary advisor. Thus, all committee members should be reasonably comfortable with progress before allowing the defense to be scheduled. Candidates must realize that their dissertation work represents a substantial investment of time on the part of their advisor. Thus, the scheduling of the Final Defense is a commitment that the advisor does not take lightly. If the student insists on going forward without the recommendation of their advisor, the likelihood of failure is a real possibility.

Often, even with the best planning, there is work that must still be done after the Final Defense. If committee members indicate that final work or changes to the dissertation should be made, then they do not sign off until they have seen and approved those changes. It is not uncommon for committee members to defer to the Chair the decision about how adequately issues have been addressed and sign off, conditional on the Chair's approval. This may happen, for example, if a committee member will have an extended absence or upcoming responsibilities that would preclude an expeditious review of changes, and is comfortable that the Chair would make the same decision as he or she would. However, any committee chair has the right to see the changes and agree to them before signing off.