THE OHIO STATE UNIVERSITY

COLLEGE OF PUBLIC HEALTH

2020-2021

Culminating Project Guidelines

for all MPH programs

- **Biomedical Informatics**
- **Biostatistics**
- **Clinical Translational Science**
- **Environmental Health Sciences**
- **Epidemiology**
- **Health Behavior and Health Promotion**
- **Program for Experienced Professionals**
- **Veterinary Public Health**

Practicum and Culminating Project guide for the MPH with Specialization in Biomedical Informatics

2020-2021

THE OHIO STATE UNIVERSITY
COLLEGE OF MEDICINE

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COLLEGE OF PUBLIC HEALTH

Revised 8/17/2018

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PRACTICUM AND CULMINATING PROJECT FOR THE MASTER OF PUBLIC HEALTH IN BIOMEDICAL INFORMATICS

Overview

The objective of the practicum and culminating project in the Master of Public Health with a specialization in Biomedical Informatics (MPH-BMI) is to provide the student with a continuum of experiences that constitute the foundation for a career in applied biomedical informatics with a specific focus on addressing population-level health. These experiences range from the initial identification of motivating information needs, to the generation of informatics-based intervention strategies targeting such requirements, to the evaluation of the impact and outcomes of ensuing technologies and methods. Accordingly, the practicum and culminating project encompass different stages of the spectrum of experiences but are, in fact, a continuum in the process of new knowledge discovery and application.

The Practicum

Practicum Content and Requirements

For the MPH-BMI, the practicum represents an opportunity for the student to work closely with a research and/or operational mentor who serves as the preceptor to guide the student through a series of experiences. The student's academic advisor collaborates in designing and approving the learning content to ensure the content is biomedical informatics focused in nature.

Because of the multi-disciplinary nature of the BMI program, practicum projects can vary widely from student to student, depending on their respective interest in the field. Given this diversity, it is expected that students establish a base knowledge of BMI principles and theories by taking Introduction to Biomedical Informatics (BMI 5710), Introduction to Research Informatics (BMI 5740) and the biostatistics sequence (PUBHBIO 6210 & 6211) before starting their practicum projects. By establishing this foundation, the student will be able to identify appropriate projects and use informatics applications in all aspects of their topic selection, study design, planning, and project implementation. Finally, given the unique computational dimensions of the intersection between Public Health and Biomedical Informatics, a foundational acculturation to computer science is strongly encouraged prior to engaging in this practicum. Students should be active participants in the arrangements for a practicum, working closely with their advisor, other BMI and CPH faculty, and staff in

BMI and CPH-OAPSS to learn of important college deadlines and required paperwork.

As its name implies, the practicum comprises the practical skills involved in any biomedical informatics research project. In addition, the student should have the opportunity to consider the research and its accompanying issues in a larger public health context. The typical MPH-BMI practicum should include the following elements:

1. Participation in the generation of an informatics-focused research project, working in collaboration with the research and/or operational mentor;
2. Design of a study (often as part of a broader project), including recognition of the classification of the study design and evaluation needs;
3. Appropriate consideration of the ethics of the study design including participation in the submission of the protocol to the Internal Review Board (IRB) as appropriate;
4. Appropriate planning for study design implementation including performance of pilot studies;
5. Design of data management instruments in support of the study evaluation plan, including the selection and codification of ensuing data sets, and the incorporation of appropriate measures to protect personal health information if applicable;
6. Data acquisition, implementation, and downstream analysis of study data, based upon of the final study design.

Students may select additional components for the practicum. These include experiences related to the conduct of biomedical informatics practice or research in its many aspects, such as participation as a member of a multi-disciplinary research team or an experience at an external site performing public health or medical informatics. These departures from the standard practicum format should be discussed and approved by the faculty academic advisor and the Department of Biomedical Informatics' Graduate Studies Coordinating Committee (BMI-GSCC).

Practicum Procedures

The Master of Public Health requires a minimum of two credit hours of practicum for students in any MPH specialization. Students must spend at least 120 hours focused on the practicum to meet the minimum requirement (60 hours of work equals one credit hour). The hours may be distributed in whatever way makes sense for the student's schedule and the requirements of the work (e.g., 10 hours per week for 12 weeks, a varying schedule over multiple semesters, etc.).

BMI students are encouraged to begin discussions of possible practicum opportunities with their academic advisors and potential research/operational mentors as soon as possible after beginning the program. This will help the student's faculty academic advisor to suggest any courses they should take that might be critical to the success of their project in anticipation of the practicum. Once a practicum has been identified the Online Practicum Learning Agreement must be completed and submitted. Once submitted it will be routed to the preceptor and faculty advisor designated on the learning agreement for review and signatures. When all electronic signatures have been obtained the practicum course will be added to the student's schedule.

Please note that the practicum is not complete until the activity log, evaluation forms, demonstration product, and final report has been submitted and approved. The expectation for the MPH-BMI is that most students will complete the coursework required for the practicum within their first year and begin their practicum project the summer following the first year.

A maximum of two credit hours of practicum credit (7189) may count towards the degree. In some cases, BMI students may receive approval from the BMI-GSCC and their academic advisor to begin supervised research work before the normally expected timeframe. This can only occur with the express written permission of your academic advisor, who should work with the BMI-GSCC to confirm the exception.

The practicum is graded S/U. The grade is assigned by the academic advisor and posted by the CPH-OAPSS staff. Final grades are based on evaluations of the student's experience and final practicum report by both the academic advisor and the research mentor.

Practicum Report Guidelines

All MPH students are required to complete and submit the following components for their practicum to CARMEN: All practicum forms can be found online on the CPH Practicum Page.

1. Activity log
2. Evaluation Links for student, preceptor and faculty advisor evaluations
3. Demonstration product in the form of
    a. Presentation (e.g., power-point, research poster)
    b. Written (e.g., manuscript, data collection instrument)
    c. Audio/visual (e.g., recorded presentation, application development).

4. Final report (see below for more details)

Final Report

The final written report should focus on sharing information on the practicum experience. At the conclusion of the practicum, BMI students will prepare a brief report discussing the relationship of their research to diagnosis, prevention, or treatment of disease and the overall relevance of their work to the mission of public health. You should discuss the expectations of your report carefully with your advisor.

The report's length needs to be sufficient to cover the expected content carefully, usually around ten pages in length.

The final report must represent your own individual work. Permission is required from your research mentor and faculty advisor to participate in a project with other BMI students. If you are working on a collaborative project, explain your area of responsibility and describe your contribution to the project.

The final report must present a clear picture of your practicum with details of your research or practice experience and how this practicum is important to the field of public health.

Please see the CPH Practicum student handbook for more information on the structure of the final report. For the BMI Practicum final report, be sure to address the following:

1. Underlying driving problems as well as corresponding information needs. What problem are you trying to address and how will Biomedical Informatics theories and methods satisfy corresponding information needs? How will you evaluate the desired outcome?

2. What is your overall study design or project plan? Classify the design in terms of methodology and evaluation plans/approaches?

3. What bioethical issues are relevant to this project? What was your participation in the IRB process (if one was in place simply state; but discuss the ethical and human subject issues relevant to this project, if any).

4. Describe your plans for data collection, codification, and management.

5. What biostatistical and/or qualitative methods do you anticipate for the analysis of your any data collected?

6. Briefly discuss the public health and informatics relevance of your project or experience.

7. Indicate the 5 MPH competencies you focused upon and how you addressed them, utilizing competencies from the Integrative & Interdisciplinary list as well as the specialization list for Biomedical Informatics. The list of updated competencies can be found on the CPH website https://cph.osu.edu/students/competencies.

8. Include a description of your demonstration product within the practicum report and list the 5 competencies demonstrated by that product.

Your title page should consist of your name, division, cohort year (year you entered the College), practicum title (as stated in your learning agreement), research mentor (preceptor) and organization, your faculty advisor, and date of submission.

Both the faculty research mentor and the faculty academic advisor will be responsible for verifying the achievement of the practicum objectives and your performance. A final copy of the final written report and demonstration product should be provided to your faculty advisor and research mentor. Once approved, these should be uploaded to Carmen along with the log and evaluations.

Sample practicum reports are available for your review in OAPSS in 100 Cunz Hall, 1841 Neil Ave.

For advice on fulfilling the above requirements, please consult your faculty advisor.

CHECKLIST OF REQUIREMENTS FOR THE BMI PRACTICUM

*To be sure you are meeting all practicum requirements, **PLEASE** follow this checklist carefully!!*

Prior to beginning the Practicum:

___ Attend a Practicum Orientation or meet with Dawn Williams in OAPSS to discuss paperwork and deadlines.

___ Review the Integrated Practicum and Culminating Project Guidelines (*explains rules, contains forms).*

___ Submit your protocol to IRB if appropriate.

___ When Practicum is confirmed complete Online Practicum Learning Agreement found on the CPH Practicum website. Submission of the online practicum learning agreement will electronical route the agreement to the faculty and preceptor designated on the form by the student for approval. When signatures have been obtained by both the practicum course will be added to the student's schedule.. Practicum forms can be found on the CPH website at https://cph.osu.edu/mph/practicum/forms-documents.

During the Practicum:

___ Document progress on Practicum Log (*you must spend at least 120 hours on the research project).*

___ Keep your faculty advisor and research mentor informed of your progress.

___ Schedule a mid-practicum progress review with your advisor and research mentor; have any changes in

the project approved by both.

Final Preparation:

___ Submit one copy of your final Practicum Report to your advisor and each member of your committee and to CARMEN.

___ Submit an electronic copy of the final approved Practicum Report, Practicum Log, Demonstration Product, and Evaluations to the Carmen Practicum course site by the first day final examinations for the semester.

Contact the Assistant Director/Coordinator of Practice Education and Career Services, Dawn Williams, with any questions or concerns: **Williams.3388@osu.edu** **(614) 247-4380**

Note: All Practicum forms and semester deadline dates can be found on the CPH website: https://cph.osu.edu/mph/practicum/forms-documents

The Culminating Project

Culminating Project Overview

MPH-BMI students can satisfy the Culminating Project (CP), by completing a combined practicum and CP or as a stand-alone CP where the skills learned in the practicum can be applied to a separate culminating project. In a stand-alone CP, the student completes an appropriate informatics project including relevant data analysis. In the combined practicum and CP the research process initiated in the practicum continues and consists of the appropriate statistical analysis of the data collected within the practicum. These analyses are then reported in a final paper, which is to be prepared in scientific journal format. Though students may collaborate with others on the project, the final report must represent the student's own work

The Master's examination committee should consist of the faculty advisor and a second CPH or BMI faculty member (chosen after discussion with your faculty advisor). Both committee members must have category M or P Graduate Faculty status in the College of Public Health and at least one committee member must have a primary appointment in the College. An additional graduate faculty member may serve on the committee if the research mentor does not meet these criteria. Completion of the culminating project involves review and approval of the final report by the committee in addition to an oral presentation of the work to the committee. This presentation should be approximately 20-30 minutes, followed by discussion and questions from the committee.

Students may present their final work at the annual Graduate Student Research Day. In addition, they are encouraged to submit abstract summaries of their work at national meetings and to publish their findings in an appropriate peer-reviewed scientific journal.

Culminating Project Report Guidelines

The final report for the culminating project must represent your own individual work. If you are working on a collaborative project, your final report must be some aspect of the project that you completed yourself and must be in the format of a peer-reviewed journal article.

The MPH-BMI culminating project final report should include the following elements:

1. Title Page
2. Abstract – brief summary of the project
3. Introduction and Background – rationale for the project; what is the basic research and why is it of interest
4. Literature Review – synthesize information written by other researchers and evaluation it according to the guiding concept that you have identified for your project
5. Methods – what were the methods and procedures used to collect and analyze data, what were the key variables of interest, and how were those variables measured
6. Results – describe the results of the data analyses and refer to any tables and figures within the text; reference any tables used from other sources
7. Discussion – interpret the data as they relate to project questions, goals, and objectives; discuss the implications of the findings and how they may impact public health

For more details on the culminating project report, consult your faculty advisor.

TIMELINE AND CHECKLIST OF REQUIREMENTS

FOR THE BMI CULMINATING PROJECT

OHIO STATE UNIVERSITY COLLEGE OF PUBLIC HEALTH

Two semesters prior to the semester of completion:

___ Discuss your culminating project with your faculty advisor.

___ Provide your advisor with an outline of your culminating project that includes the draft title, the public

Health and informatics question that will be addressed and the methods for addressing the question.

The semester prior to completion:

___ Submit the electronic permission form to register for PUBHLTH 7998 for 3 credit hours during your second to last semester. This form will get electronically routed to your faculty advisor.

___ Work with your advisor to identify a second reader with appropriate Graduate Faculty status to serve

on your master's exam committee ***at least one semester prior to the semester of graduation.***

___ Submit the application to graduate online to the Graduate School the tenth Friday of the semester ***prior*** to the semester of graduation.

The final semester:

___Meet with your faculty advisor and agree upon a timeline to complete the requirements for your project and schedule a time convenient for your committee for the presentation of your findings

___ Submit your final paper to your committee members at least 1 week prior to your scheduled presentation

___ The results of the Master's Exam must be submitted via Gradforms by all Committee members by Graduate School deadlines

___ Keep your advisor updated on your progress.

___ Submit an electronic copy (PDF or Word) of your approved project to OAPSS the Friday before graduation

Responsible Research Practice Requirements

(Appendix H of the CPH Handbook)

Many students in the College of Public Health and College of Medicine are involved in research, either for their own degree requirements or in work assignments with faculty members or others. It is essential that students learn and abide by the applicable rules concerning research involving human or animal subject. This topic will be covered in some courses as appropriate. This summary is intended to provide an overview. You are strongly advised to contact your faculty advisor or employer about the procedures described below.

What research is covered by this policy?

All research that collect data from human subject needs to be approved by the OSU Institutional Review Board (IRB). All research involving animals needs approval from OSU Institutional Animal Care and Use Committee (IACUC). This includes culminating project, these and doctoral dissertations. In a few rare cases, practicum placements might also need approval if it involves collecting research-type data. When IRB or IACUC approval are necessary, such approval must be obtained before any data collection begins. Allow 6 weeks or more from submission to approval.

Research with human subject

When do project need IRB approval?

The linked document from Ohio State's Human Research Protection Program defines clearly what constitutes "research" and what types of research require IRB oversight. The document can be found here: http://orrp.osu.edu/files/2012/02/Research-Involving-Human-Subjects.pdf. Pages 5, is very useful to help determine when IRB oversight is required. If your research seems to fall into a "gray area" not clearly covered by this document, contact Ohio State's Office of Responsible Research Practices for help.

Procedures for human subject research approval

Students should work closely with their faculty advisors to complete the necessary materials to secure approval for research with human subject. Guidance, forms, and directions are available through the Office of Responsible Research Practices: http://orrp.osu.edu/irb/buck-IRB/

All faculty, staff and students participating in human subject research at Ohio State are required to complete the Collaborative Institutional Training Initiative (CITI) web-based course on human subject available at http://orrp.osu.edu/irb/training/citi. The Office of

Responsible Research Practices also offers regular training for researchers. Additional information is available on the Web at http://orrp.osu.edu/irb/training/. In addition to completing CITI training, everyone (faculty, staff, and students) involved in sponsored research or other research which is reviewed by the IRB must also complete a Conflict of Interest disclosure, which can be found at http://go.osu.edu/coi.

Some low-risk research may qualify for “exemption” from full IRB review; however, the determination that the research is exempt must be made by the university’s Office of Responsible Research practices (ORRP), and cannot be assumed by the student or investigator. Students who will be using data previously collected by faculty members for a theses, dissertation, or culminating project will also need to obtain IRB approval, frequently via the exempt status form. The form for requesting an exemption determination is available at http://orrp.osu.edu/irb/irbforms/exempt/

One aspect of student research which should be noted is that for purposes of the IRB application, the student’s advisor must be listed on the form as the “Principal Investigator,” i.e., the person responsible for the research. The student is a “co-investigator.” Both the student and the advisor must have completed the on-line human subject training (CITI). The IRB will not review an application unless everyone listed as principal or co-investigator has completed the on-line training.

Research with animals

All animal protocols should be submitted in via the university’s e-Protocol system. Directions to secure approval for research with animals are available through the Office of Responsible Research Practices. Approval requires completion of the Animal Usage Orientation Course (either classroom or online) and the Occupational Health and Safety Training Course (online only). Information regarding these courses is available online at http://orrp.osu.edu/iacuc/.

Need assistance?

You are encouraged to contact your faculty advisor or employer about research, including the requirements for responsible research practices. You may also speak with Bill Miller, PhD, Senior Associate Dean for Research in the College of Public Health, if you have questions or concerns.

If you have additional questions or need to discuss specific issues concerning research you are undertaking, contact:

Office of Responsible Research Practices
The Ohio State University
300 Research Administration Building
1960 Kenny Road Columbus, Ohio 43210-1063
Phone: (614) 688-8457
Fax: (614) 688-0366
http://orrp.osu.edu/

[Template for Practicum Report Cover Page]

Practicum Final Report

Student Name

MPH in Biomedical Informatics

Entering Class of 20xx

Title

Research Mentor: Name

Department, Organization

Faculty Academic Advisor: Name

Date Submitted

[Template for Culminating Project Cover Page]

Title

Student Name

Entering Class of 20xx

Culminating Project for

Master of Public Health in Biomedical Informatics

Committee Members:

Faculty Academic Advisor’s Name

Research Mentor’s Name

Additional Graduate Faculty Member’s Name

The Ohio State University College of Public Health and

College of Medicine’s Department of Biomedical Informatics

Submitted on Date

DIVISION OF BIOSTATISTICS

Culminating Project Guidelines for MPH Students

Effective starting Academic Year 2019-2020 and for students admitted AU18-AU19

APPLIED RESEARCH PROJECT

Research projects will be one of two types: (1) investigation of an applied research question with a significant statistical component, or (2) evaluation of a statistical method in a new setting or comparison of a newly-proposed statistical model to a traditional method. In addition, the research project must integrate content from at least one area of public health outside biostatistics.

Potential topics must be discussed with and approved in advance by your advisor and second reader. All students are required to write a report and provide an oral presentation of their culminating project. The presentation time and location will be advertised in the Division and other faculty, staff and students will be invited to attend. The advisor and second reader must receive the document at least two weeks prior to the presentation. The final document will be due to the advisor and second reader on the date all graduation materials are due in the Graduate School.

The content of the report should include:

Abstract/Executive Summary

An abstract is a brief summary of approximately 250 words. The major components are: Purpose, Methods, Results/Outcomes, Conclusions, and Implications. An executive summary is an expanded version of the abstract and is typically one to two pages in length.

Table of Contents

The table of contents lists all the major topical areas of the document with the corresponding page numbers.

Introduction/Purpose/Background

The introduction should state the rationale for the project and introduce the background. What is the basic research question and why is it of interest? How does the research question relate to epidemiology, health behavior and health promotion, health services management and policy, or environmental health? Alternatively, what are the statistical methods being compared and why is this comparison of interest?

Literature Review

A literature review is a synthesis of what researchers/scholars have written about a topic in the past. The purpose is not to list as many articles as possible, but rather to demonstrate your ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that you have identified for your project. The literature review should include relevant statistical methods used in the specific field of research, critiques of methods, and any gaps in the literature that you have identified.

Study Design

What is the research question? What are the specific aims to be addressed by this research? What study design was used to answer the questions? Was that design sufficient? Any sample size or power consideration? What are the major threats to validity in the design? How might those threats be dealt with in follow-up studies?

Statistical Analysis

What methods and models were used to collect and analyze data? What were the key variables of interest? How was the model identified? What statistical software was used to analyze the data? How the model was justified?

Results

The findings should be presented in this section. Describe the results of the data analyses. All tables and figures should be referred to within the text. If a table or a figure is used from another source there needs to be a reference citation. If possible, tables and figures should be placed within the text; larger tables and figures may be included in an appendix. All tables and figures should have appropriate titles and legends.

Discussion

Discussion of the findings (interpretation of the data) as they relate to the project questions, goals, and objectives should be presented in this section. Findings should be described in context as they relate to epidemiology, health behavior and health promotion, health services management and policy, or environmental health. Any potential drawbacks of the method should be discussed and propose future research directions should be proposed

References

All literature and personal communications cited in the proposal must be listed in the reference section. References should follow a standard citation format.

Appendices

Anything not included in the text of the project report that is important for the understanding of the design, implementation, or conclusions of the project should be attached as an appendix (e.g. tables, plots, simulation results, etc.) All appendices must be referred to within the text of the project report and must be included as part of the table of contents.

Additional Written Report Requirements

1. Report should be about 15-20 double-spaced pages in length not including tables, figures or appendices.

2. Hard copy of the report should be single or double-side printed on white paper (8.5 x 11 inches) and bound or stapled.

3. For text, 12 point font should be used; however tables and footnotes may be in 10 point font if necessary.

4. The Title Page should include the title of the project, the student's name and degrees, the committee members' names, The Ohio State University, the month and year of the final project.

5. Page numbers should be inserted on each page except the Title Page and the Table of Contents.

6. All Figures and Tables must be numbered and be accompanied by descriptions that allow the reader to understand their content without referring to the text, and all appendices must be labeled appropriately.

7. References should follow a consistent format.

8. A hard copy and an electronic copy of the final approved report should be provided to your advisor and second reader, the Division Coordinator, and the Office of Academic Programs and Student Services.

Revised: 9/2018

Integrated Practicum and Culminating Project guide for the MPH in Clinical Translational Science

2019-2020

THE OHIO STATE UNIVERSITY

COLLEGE OF PUBLIC HEALTH

Table of Contents

INTEGRATED PRACTICUM AND CULMINATING PROJECT FOR THE MASTER OF PUBLIC HEALTH IN CLINICAL TRANSLATIONAL SCIENCE

Overview

The objective of the integrated practicum and culminating project in the Master of Public Health with a specialization in Clinical Translational Science (MPH-CTS) is to provide the student with a continuum of experiences that constitute the foundation for a career in investigative biomedical science. These experiences range from the initial generation of a testable hypothesis to study design, data collection, data analysis, and ultimately oral and written presentation of results. Accordingly, the practicum and culminating project encompass different stages of the spectrum of experiences but are, in fact, a continuum in the process of new knowledge discovery.

The Practicum

Practicum content

For the MPH-CTS, the practicum represents an opportunity for the student to work closely with a research mentor who serves as the preceptor to guide the student through a series of experiences. The student's academic advisor collaborates in designing and approving the learning content.

Because of the special nature of the CTS program, many students begin their practicum earlier than would be typical in other specializations, engaging in a research apprenticeship experience. Ideally, this will allow the student to participate in all aspects of the topic selection, study design, planning, and implementation of an appropriate research project. In addition, the student should be exposed to the public health issues and ethical concerns that arise in the research. Students should be active participants in the arrangements for a practicum, working closely with their advisor, other college faculty and staff in OAPSS to learn of important college deadlines and required paperwork.

As its name implies, the practicum comprises the practical skills involved in any clinical research project. In addition, the student should have the opportunity to consider the research and its accompanying issues in a larger public health context. The typical MPH-CTS practicum should include the following elements:

7. Participation in the generation of a testable study hypothesis in collaboration with the research mentor;
8. Design of the study including recognition of the classification of the study design (e.g. observational, case control, cohort, prospective clinical trial, etc);
9. Appropriate consideration of the ethics of the study design including participation in the submission of the protocol to the IRB as appropriate;
10. Appropriate planning for study design implementation including performance of pilot studies;
11. Design of data archives including appropriate measures to protect personal health information;
12. Data acquisition and implementation of the final study design.

Students may elect additional components for the practicum. These include experiences related to the conduct of clinical research in its many aspects, such as participation as a student intern in the Institutional Review Board, participation as a biostatistical and study design consultant, or short term investigations related to health care delivery and disease outcomes. In unusual cases, the entire practicum might be composed of these alternative experiences. These departures from the standard practicum format should be discussed and approved by the Director of the MPH/CTS and the MPH/CTS Oversight Committee.

Practicum Procedures

The Master of Public Health requires a minimum of two credit hours of practicum for students in any MPH specialization. Students must spend at least 120 hours focused on the practicum to meet the minimum requirement (60 hours of work equals one credit hour). The hours may be distributed in whatever way makes sense for the student's schedule and the requirements of the work (e.g., 10 hours per week for 12 weeks, a varying schedule over multiple semesters, etc.).

CTS students are encouraged to begin discussions of possible practicum opportunities with their advisors and potential research mentors as soon as possible after beginning the program. Once a practicum has been identified, a Online Practicum Learning Agreement must be completed. The Online Learning Agreement can be found on the CPH Practicum Site https://cph.osu.edu/mph/practicum/forms-documents. This is the verification that the practicum has the approval of both the research mentor and the advisor, and notifies OAPSS that the student will be accumulating practicum hours.

Recognizing the unique requirements specific to the integrated practicum and culminating project in the MPH-CTS, students are permitted, with permission of their faculty advisors and research mentors, to begin the practicum after completing PUBHBIO 6210 and PUBHEPI 6430 or equivalent or concurrent with enrollment in those courses. Thus, a student taking the typical course schedule may begin the practicum as early as the first semester of regular course work, two or more semesters earlier than is typical for students in other MPH specializations; however, the practicum is not complete until the final report has been submitted and approved. The expectation for the MPH-CTS is that most students will complete the course work and begin their research during the first year, and then continue their research under the guidance of the research mentor after that year.

A maximum of two credit hours of practicum credit (PUBHLTH 7189) may count towards the degree. In some cases, CTS students may receive approval from the Director of the MPH-CTS program to begin supervised research work with a mentor in the summer before required core course work is initiated. This is an excellent opportunity to gain awareness of the process and challenges characteristic of Clinical Translational Science and add relevance to subsequent didactic training, although these hours may not be counted as part of the practicum.

The practicum is graded S/U. The grade is assigned by the advisor based on evaluations of the student's experience and final practicum report by both the advisor and the research mentor.

Assessment Products of the CTS MPH Practicum

There are four products that are required to be completed and submitted at the conclusion of the practicum: 1) daily activities log, 2) self/preceptor/faculty evaluations, 3) demonstration product, 4) final report.

Practicum Activity Log.

A log of the activities pursued (e.g., dates, hours, setting, persons, and subjects) should accompany the final report that is posted to the students CARMEN drop-box once it is reviewed by the faculty advisor.

Evaluation forms.

Three evaluation forms are required: student, preceptor, and faculty evaluations. All evaluation links for the student, preceptor, and faculty advisor can be found on the CPH Practicum forms and documents page. All parties are required to complete the evaluation in order for the student to fulfill the requirements for the practicum. When the student and preceptor evaluations have been completed they will be routed electronically to the faculty advisor.

Demonstration Product.

The purpose of the demonstration product is to have a written or visual illustration of the attainment of one or more competencies during the practicum experience(s). The selected demonstration product is expected to be original work led or contributed to in the practicum process. Students can select from the following types:

1) Presentation: Examples include a PowerPoint, Prezi, research poster, infographic;

2) Written: Examples include a manuscript (entire or relevant excerpt), policy brief, program plan, community assessment, fact sheet, brochures, data collection instrument;

3) Audio/Visual: Examples include recorded presentations, multi-media content, social media campaigns, webinar sessions, web/app development, podcasts.

Consult with your faculty advisor about concerns or questions about the choice of demonstration product or upload format.

Final Report Requirements

All students are required to complete a final written report that will focus on sharing information on the practicum experience.

The final report will summarize the student’s practicum experience with details of specific experiences and how the practicum is important to the field of public health. Students are expected to follow the guidelines below in structuring their report. The student should discuss the expectations of their report carefully with their advisor. The report length must be sufficient to cover the expected content carefully. The best recent reports have usually been five to ten pages in length.

The report should contain the following sections.

TITLE PAGE

- Your title page should consist of your name, division, cohort year (year you entered the College), project title (as stated in your learning agreement), research mentor (preceptor) and organization, your faculty advisor, and date of submission.

INTRODUCTION

- Describe the nature of the practicum (e.g., whether it is a descriptive project, experimental project, research project, or survey).
- Very briefly, describe the organizational unit where the practicum took place, its primary mission, and its relationship to the overall organizational structure of the agency. Describe services provided, programs and public health objectives, and specific population groups targeted.
- Describe the duties specifically related to the practicum in the context of the entire organization.
- The practicum report must represent your own individual work. Permission is required from your research mentor and faculty advisor to participate in a project with other CTS students. If you are working on a collaborative project, explain your area of responsibility and describe your contribution to the project.

GENERAL PROJECT GOALS AND OBJECTIVES

- State the purpose of the practicum (e.g., proving a hypothesis, analyzing a problem, completing an evaluation, etc.). What was the significance of the issue worked on? Why did this need to be addressed?
- Describe how your planned learning objectives align with the program competencies you selected for the practicum. List the practicum activities that link to each competency.
- The final report must present a clear picture of your practicum with details of your research and how this practicum is important to the field of public health.

ADDITIONAL CTS MPH PROJECT GOALS AND OBJECTIVES TO BE ADDRESSED

- Hypothesis and its motivation. What is your study hypothesis and what findings or unmet needs in medical knowledge contributed to its generation?

- What is your overall study design? Classify the study design in terms of retrospective, prospective, case control, cohort, etc.

- What bioethical issues are relevant to this project? What was your participation in the IRB process (if one was in place simply state, but discuss the ethical and human subjects issues relevant to this project).

- Describe your plans for data collection and data archiving.

- What biostatistical methods do you anticipate for the eventual analysis of your data?

- Briefly discuss the public health relevance of your research project.

- Indicate the MPH competencies you addressed and how you addressed them.

RESULTS

- Describe the outcome(s) or product(s) of the practicum
- What were the most important or surprising findings?
- How does this work impact the future of this public health issue?
- Summarize recommendations

EVALUATION

- Provide a careful evaluation of the practicum.
- Was it a valuable learning experience? Why or why not?
- How did it compare with your expectations?
- What types of classroom skills were you able to employ in the field?
- What did the experience teach you about the world of public health practice?

DESCRIPTION OF DEMONSTRATION

- Describe the demonstration product
- Describe your role in the creation of the demonstration product
- List the competencies demonstrated by your chosen product.

OPTIONAL APPENDIX

- Other relevant materials may be included as an appendix

The student will post all assessment products that they create (daily log, demonstration, and final report) to Carmen. Students with questions about any assessment products should consult with their faculty advisor.

Both the faculty research mentor and the faculty academic advisor will be responsible for verifying the achievement of the practicum objectives and your performance.

One copy each of the final written report, log, and outcomes of the practicum (e.g., questionnaires, fact sheets, etc.) should be provided to your faculty advisor and your research mentor. Once your advisor approves your report, submit an electronic copy of the final document to the CARMEN Drop-Box.

Sample practicum reports are available for your review in OAPSS in 100 Cunz Hall, 1841 Neil Ave.

For advice on fulfilling the above requirements, please consult your faculty advisor.

THE OHIO STATE UNIVERSITY
COLLEGE OF PUBLIC HEALTH

Checklist of Requirements for the CTS Practicum

Prior to beginning the Practicum:

___ Attend a Practicum Orientation or meet with Dawn Williams in the Office of Academic Programs and Student Services (OAPSS) to discuss paperwork and deadlines.

___ Review the Integrated Practicum and Culminating Project Guidelines (*explains rules, contains forms).*

___ Submit your protocol to IRB if appropriate.

___ When Practicum is confirmed complete Online Practicum Learning Agreement found on the CPH Practicum website. Submission of the online practicum learning agreement will electronically route the agreement to the faculty and preceptor designated on the form by the student for approval. When signatures have been obtained by both the practicum course will be added to the student's schedule. Practicum forms can be found on the CPH website at https://cph.osu.edu/mph/practicum/forms-documents

During the Practicum:

___ Document progress on Practicum Log (*you must spend at least 120 hours on the research project).*

___ Keep your faculty advisor and research mentor informed of your progress.

___ Schedule a mid-practicum progress review with your advisor and research mentor; have any changes in the project approved by both.

___ Discuss your Demonstration Project with your research mentor and faculty advisor for their suggestions and approval.

Final Preparation:

___ Submit one copy of your final Practicum Report to your advisor and each member of your committee and to CARMEN

___ Submit an electronic copy of the final approved Practicum Report, Practicum Log, Demonstration Product, and Evaluations to the Carmen Practicum course site by the first day final examinations for the semester.

Contact the Assistant Director/Coordinator of Practice Education and Career Services, Dawn Williams, with any questions or concerns: **Williams.3388@osu.edu** **(614) 247-4380**

NOTE: All practicum forms and semester deadline can be found on the CPH website: https://cph.osu.edu/mph/practicum/forms-documents.

The Culminating Project

MPH-CTS students satisfy the Culminating Project (CP), by completing a combined practicum and CP. The CP will flow from the research process begun during the practicum, continuing onto complete the appropriate statistical analysis and prepare a manuscript in scientific journal format describing and interpreting the findings. Though students may collaborate with others on the project, the final report must represent the student's own work.

The culminating project continues the research process initiated in the practicum and consists of the appropriate statistical analysis of the data. This analysis is then reported in a final paper, which is to be prepared in scientific journal format. Completion of the culminating project is contingent upon review and approval of the final report by a committee of the faculty advisor and a second CPH faculty member. Both committee members must have category M or P Graduate Faculty status in the College of Public Health and at least one committee member must have a primary appointment in the College. An additional graduate faculty member may serve on the committee if the research mentor does not meet these criteria. Students may present their final work at the annual Graduate Student Research Day. In addition, they are encouraged to submit abstract summaries of their work at national meetings and to publish their findings in an appropriate peer-reviewed scientific journal.

Culminating Project Report

The final report for the culminating project must represent your own individual work. If you are working on a collaborative project, your final report must be some aspect of the project that you completed yourself and must be in the format of a peer-reviewed journal article.

The MPH-CTS culminating project final report should include the following elements:

8. Title Page
9. Abstract – brief summary of the project
10. Introduction and Background – rationale for the project; what is the basic research and why is it of interest
11. Literature Review – synthesize information written by other researchers and evaluation it according to the guiding concept that you have identified for your project

12. Methods – what were the methods and procedures used to collect and analyze data, what were the key variables of interest, and how were those variables measured
13. Results – describe the results of the data analyses and refer to any tables and figures within the text; reference any tables used from other sources
14. Discussion – interpret the data as they relate to project questions, goals, and objectives; discuss the implications of the findings and how they may impact public health

For more details on the culminating project report, consult your faculty advisor.

Timeline and Checklist of Requirements for the CTS Culminating Project

Two semesters prior to the term/semester of completion:

___ Discuss your culminating project with your faculty advisor.

___ Provide your advisor with an outline of your culminating project that includes the draft title, the public

health question that will be addressed, and the methods for addressing the question.

The term/semester prior to completion:

___ Submit the registration form to register for PUBHLTH 7998 for 3 credit hours during your second to last term/semester.

___ Work with your advisor to identify a second reader with appropriate Graduate Faculty status to serve

on your master's exam committee ***at least one term/semester prior to the semester of graduation.***

___Submit the electronic application to graduate by the 10th Friday prior to the semester you intend to graduate. The application is online: https://gradforms.osu.edu.

The final semester:

___Meet with your faculty advisor and agree upon a timeline to complete the requirements for your project.

___ The Master Exam Report will be submitted and signed electronically by your advisor and second reader to the Graduate School by Graduate School deadlines. Therefore, your project should be completed by the 4th week of the semester. **A first draft of the culminating project must be submitted to your advisor and second reader no later than 1 month prior to Graduate School deadline.**

___ Keep your advisor updated on your progress.

___ Submit the final copy of your project to your committee by the deadline specified.

___ Submit an electronic copy of your approved project to OAPSS by Graduate School deadlines.

Responsible Research Practice Requirements

(Appendix H of the CPH Handbook)

Many students in the College of Public Health are involved in research, either for their own degree requirements or in work assignments with faculty members or others. It is essential that students learn and abide by the applicable rules concerning research involving human or animal subjects. This topic will be covered in some courses as appropriate. This summary is intended to provide an overview. You are strongly advised to contact your faculty advisor or employer about the procedures described below.

What research is covered by this policy?

All research that collects data from human subjects needs to be approved by the OSU Institutional Review Board (IRB). All research involving animals needs approval from OSU Institutional Animal Care and Use Committee (IACUC). This includes culminating projects, these and doctoral dissertations. In a few rare cases, practicum placements might also need approval if it involves collecting research-type data. When IRB or IACUC approval are necessary, such approval must be obtained before any data collection begins. Allow 6 weeks or more from submission to approval.

Research with human subjects

When do projects need IRB approval?

The linked document from Ohio State's Human Research Protection Program defines clearly what constitutes "research" and what types of research require IRB oversight. The document can be found here:
http://orrp.osu.edu/irb/osupolicies/documents/ResearchInvolvingHumanSubjects.pdf Table 1, on pages 6-8, is a very useful guide to when IRB oversight is required. If your research seems to fall into a "gray area" not clearly covered by this document, contact Ohio State's Office of Responsible Research Practices for help.

Procedures for human subjects research approval

Students should work closely with their faculty advisors to complete the necessary materials to secure approval for research with human subjects. Guidance, forms and directions are available through the Office of Responsible Research Practices: http://orrp.osu.edu/irb.

All faculty, staff and students participating in human subjects research at Ohio State are required to complete the Collaborative Institutional Training Initiative (CITI) web-based course on human subjects available at http://orrp.osu.edu/irb/training/citi. The Office of Responsible Research Practices also offers regular training for researchers. Additional information is available on the Web at http://orrp.osu.edu/irb/training/. In addition to completing CITI training, everyone (faculty, staff, and students) involved in sponsored research or other research which is reviewed by the IRB must also complete a Conflict of Interest disclosure, which can be found at http://orc.osu.edu/regulations-policies/coi/ecoi/.

Some low-risk research may qualify for "exemption" from full IRB review; however, the determination that the research is exempt must be made by the university's Office of Responsible Research practices (ORRP), and cannot be assumed by the student or investigator. Students who will be using data previously collected by faculty members for a theses, dissertation, or culminating project will also need to obtain IRB approval, frequently via the exempt status form. Requests for exempt determinations are made using the Buck-IRB online system.

One aspect of student research which should be noted is that for purposes of the IRB application, the student's advisor must be listed on the form as the "Principal Investigator," i.e., the person responsible for the research. The student is a "co-investigator." Both the student and the advisor must have completed the on-line human subjects training (CITI). The IRB will not review an application unless everyone listed as principal or co-investigator has completed the on-line training.

Research with animals

All animal protocols should be submitted in via the university's e-Protocol system. Directions to secure approval for research with animals are available through the Office of Responsible Research Practices. Approval requires completion of the Animal Usage Orientation Course (either classroom or online) and the Occupational Health and Safety Training Course (online only). Information regarding these courses is available online at http://orrp.osu.edu/iacuc/.

Need assistance?

You are encouraged to contact your faculty advisor or employer about research, including the requirements for responsible research practices. You may also speak with Christopher Weghorst PhD, Associate Dean for Research in the College of Public Health, if you have questions or concerns.

If you have additional questions or need to discuss specific issues concerning research you are undertaking, contact:

Office of Responsible Research Practices

The Ohio State University

300 Research Administration Building

1960 Kenny Road Columbus, Ohio 43210-1063

Phone: (614) 688-8457

Fax: (614) 688-0366

http://orrp.osu.edu/index.cfm

[Template for Practicum Report Title Page]

Practicum Final Report

Student Name

MPH in Clinical Translational Science

Entering Class of 20xx

Title

Research Mentor: Name

Department, Organization

Advisor: Name

Date Submitted

[Template for Culminating Project Title Page]

Title

Student Name

Entering Class of 20xx

Culminating Project for

Master of Public Health in Clinical Translational Science

Committee Members:

Faculty Advisor’s Name

Research Mentor’s Name

Additional Graduate Faculty Member’s Name

The Ohio State University College of Public Health

Submitted on Date

THE OHIO STATE UNIVERSITY
COLLEGE OF PUBLIC HEALTH

Guidelines for MPH Culminating Projects
Academic Year 2019-2020

Division of Environmental Health Sciences

The purpose of a culminating project (CP) is to address an environmental health problem or issue and can take the form of 1) an applied research project; 2) a grant proposal; or 3) a critical review. Other forms are possible with the approval of your advisor. The applied research project will entail either the collection of primary data or acquisition of secondary data for the purpose of answering an environmental health question and/or making a case for change. Ideally, this applied scholarly/research project will be suitable for submission as a peer-reviewed journal publication. The grant proposal option addresses a practical public health issue and can take the form required by the targeted funding agency, but must include a clear statement of the problem and methods for addressing the problem. The critical review will provide an in-depth analysis of a problem or issue relying on published literature.

Projects that involve human subjects must adhere to policies and procedures of the University's Institutional Review Board (IRB) (http://orrp.osu.edu/irb/).

1. **How Does Your Practicum Relate to the CP?** The relationship between your CP and practicum may vary from extensive to none. The purposes of these two MPH experiences differ. The practicum is largely externally directed and is intended to provide real-world environmental health experience with government, private industry, or NGO. In contrast, the CP is self-directed and defined (with faculty advice). However, there can be synergy between the practicum and CP in that ideas and opportunities for the CP can arise from the Practicum. Data from the practicum can be used to develop the CP. Synergy between the Practicum and CP can enhance both experiences.

2. **CP Report Requirements.** Your CP will be evaluated based on your written report and oral presentation. The written report requirements typically include 20-25 pages, double spaced, with 25 references (Table 1). The oral presentation occurs in two parts. The first part may be a public seminar that is 30-40 min in duration and includes 10 min for Q&A. Although not mandatory, this oral presentation is typically scheduled as a part of the Division's weekly seminar series. Students are to work with their CP and academic advisor in developing their

presentations. It is the student's responsibility to schedule the seminar at a time when both the CP advisor and 2nd reader are available to attend. Both the advisor and second reader must attend the public seminar. The second part of the oral presentation typically follows the public seminar and includes the student, CP advisor, and 2nd reader. Faculty will "discuss" the project with the student to evaluate the student's mastery of the project and the underlying environmental health principles and concepts. This portion of the exam typically lasts from 30 to 60 minutes. The culminating project is graded S/U.

3. **Timeline Considerations.** It is the student's responsibility to plan their efforts so that faculty have adequate time to review their CP draft submissions well before the deadline for signing-off on the Master's Examination form. Students should plan to submit two complete drafts of their report to their CP advisor before their final draft is submitted to both their CP advisor and 2nd reader. Students should allow a minimum of one week for Faculty to review and comment on draft reports.

The outline below is the format for BSPH-EPH and MPH-EHS proposals and projects. The format also may be used to for MS and PhD proposals too, but these students are encouraged to follow a NIH proposal format. The final project may follow this format or may be in form of a journal article and therefore would follow the applicable journal guidelines. However, for an MS thesis and PhD dissertation, even if student opts for journal submissions, both require an introduction section as shown below.

<Title Page>

ABSTRACT

TABLE of CONTENTS

INTRODUCTION

<u>Background</u>

<u>Purpose and Rationale</u>

<u>Objectives</u>

<u>Hypothesis</u> (if applicable)

LITERATURE REVIEW

<u><Applicable Subheadings to Organize Content></u>

MATERIAL AND METHODS

*****************Above for *Proposal*…Also add below for *Project********************

RESULTS

<u><Applicable Subheadings to Organize Content></u>

DISCUSSION

<u><Applicable Subheadings to Organize Content…include Limitations></u>

CONCLUSIONS and RECOMMENDATIONS

REFERENCES

THE OHIO STATE UNIVERSITY
COLLEGE OF PUBLIC HEALTH

DIVISION OF EPIDEMIOLOGY
Culminating Project Proposal Instructions and Guidelines
Academic Year 2019-2020

CULMINATING PROJECT PROPOSAL INSTRUCTIONS

The purpose of the culminating project proposal in Epidemiology is for the student to describe their planned culminating project topic and methods and get feedback from their faculty advisor and other committee members. To allow time for a thorough and thoughtful project to be carried out, this proposal should be completed by 7th week of the term prior to the term of graduation. During this time, students will be enrolled in the Culminating Project Seminar in Epidemiology (PUBHEPI 7998). The instructor of that course will provide more detail about the culminating project in general, and, specifically, the culminating project proposal. The proposal will be one of the Seminar course required assignments.

The culminating project proposal should include the following elements.

Topic Description
1. Describe the broad objective or purpose of the project.
2. Describe the source of the data. Describe the agency or organization that will provide the data, or if an existing source of data is used indicate whether the data are publicly available or if you will need to request access to the data. If applicable, request a letter of support from the agency/organization and include a copy with your proposal.
3. State your specific research questions and hypotheses, or the goals and objectives for your study.
4. Describe what need your proposed project addresses.

Methods
1. Describe the data that will be analyzed to address the study question or: If you will collect data for the project describe your data collection plans. If you will analyze existing data describe the variables (measures) you will use to address the research questions.
2. Describe how you will analyze the data. What comparisons will you make and/or what statistical tests will you use? Do you have sufficient training in the analytic methods your analyses will require? If not, describe how you will acquire this training.

Timeline for IRB approval
1. Provide a plan for IRB approval of the culminating project, as required.

Have your project advisor and second reader sign and date the proposal, and give them each a copy to keep. Keep one copy for your own records.

CULMINATING PROJECT GUIDELINES

Potential topics must be discussed with and approved in advance by your advisor and second reader. All students are required to schedule an oral defense, at which they will present the culminating project. The presentation time and location will be advertised in the Division and other faculty, staff and students will be invited to attend. After the presentation the oral defense will be closed to the public and only the student, advisor and second reader will continue the discussion. This oral defense is the “oral component” of the Master’s Examination and students must therefore follow the rules outlined in the Graduate School Handbook, Section 6.2 (https://gradsch.osu.edu/handbook/all#6-2)

The advisor and second reader must receive the document at least two weeks prior to the oral defense. The final document will be due to the advisor and second reader on the date all graduation materials are due in the Graduate School (will vary with each term).

While each student should discuss the precise format of the written document with his/her advisor, two suggested formats for the Culminating Project are below:

Option 1:

Abstract/Executive Summary
An abstract is a brief summary of approximately 250 words. The major components are: Purpose, Methods, Results, Conclusions, and Implications. An executive summary is an expanded version of the abstract and is typically one to two pages in length.

Table of Contents
The table of contents lists all the major topical areas of the document with the corresponding page numbers.

Introduction/Purpose
The introduction should state the rationale for the project. What is the basic study question and why is it of interest?

Literature Review
A literature review is a synthesis of what researchers/scholars have written about a topic organized according to a guiding concept. The purpose is not to list as many articles as possible, but rather to demonstrate your ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that you have identified for your project. The literature review should include relevant epidemiological information about the target population, critiques of methods, and any gaps in the literature that you have identified.

Agency Description
Only if relevant, describe the agency/organization involved in the project. This should include a graphic presentation of the organizational structure and a discussion of how the project relates to the mission and other programs of the agency.

Methods
Overview
What are the specific questions to be addressed by this research? What design was used to answer the questions?

Procedures and Key Variables
What methods and procedures were used to collect and analyze data? What were the key variables of interest? How were those variables measured?

Human Subjects
Please note that if human subjects are involved in any way in your research, you will need to have your proposal reviewed and approved by the OSU Institutional Review Board before you begin any data collection or analysis.

Results
The findings should be presented in this section. Describe the results of the data analyses. All tables and figures should be referred to within the text. If a table or a figure is used from another source there needs to be a reference citation. If possible, tables and figures should be placed within the text; larger tables and figures may be included in an appendix.

Discussion, Implications, and Recommendations
Discussion of the findings (interpretation of the data) as they relate to the project questions, goals, and objectives should be presented in this section. Implications of the findings for the agency/organization should be included and how the findings may impact policy, if applicable. Recommendations for use of the findings and for future research should also be presented in this section.

References
All literature and personal communications cited in the proposal must be listed in the reference section. References should follow a standard citation format.

Appendices
Anything not included in the text of the project report that is important for the understanding of the design, implementation, or conclusions of the project should be attached as an appendix. For example: instruments, consent forms, timeline, etc. All appendices must have references within the text of the project report and must be included as part of the table of contents.

Option 2:
Option 2 is similar to Option 1 with the following important difference. In Option 2, the project structure should follow the structure of a publishable manuscript, with Abstract, Introduction (2-4 paragraphs), Methods, Results, and Discussion. This manuscript format is followed by an Appendix with a Literature Review, comparable to that in Option 1. The intention of this format is to provide you with the opportunity to convert the project to a publishable manuscript more easily.

The Culminating Project Timeline is found on the Culminating Project CPH website.

1. As noted in the Timeline Checklist, which is found on the CPH website, it is expected that your advisor will be kept fully appraised of your progress and will see drafts of your project write-up as it develops. The project advisor may require multiple changes before the draft is ready to be presented. Your project advisor and second reader must see a complete draft of your final Culminating Project report a minimum of one month before your expected review meeting date. You must provide both of your committee members with a correctly formatted (refer to page 6), clean and final hardcopy of your manuscript at least two weeks prior to the review meeting date.

2. Graduation applications are required to be submitted the 10th Friday prior to the term you intend to graduate. The application is on-line, and available at https://gradforms.osu.edu. Please note: the application is valid for that term only.

3. The final date for completing all requirements (including the project presentation) and submitting the Master's Examination Report to the Graduate School is generally about 3-4 *weeks before* the end of the term. A specific calendar of dates is available on the Graduate School website (https://gradsch.osu.edu/graduation-calendar). If your committee fails to electronically submit the Master's Examination Report by the Graduate school deadlines, it will result in a delay of your graduation.

Written Report Requirements

1. Report should be approximately 25 double-spaced pages in length not including tables, figures or appendices.

2. Include at least 25 references from the peer-reviewed literature.

3. Report should be single or double-side printed on white paper (8.5 x 11 inches) and bound or stapled.

4. For text, 12 point font should be used; however tables and footnotes may be in 10 point font if necessary.

5. Page numbers should be inserted on each page except the Title Page and the Table of Contents.

6. All Figures and Tables must be numbered and be accompanied by descriptions that allow the reader to understand their content without referring to the text, and all appendices must be labeled alphabetically

7. The Title Page should include the title of the project, the student's name and degrees, the committee members' names, The Ohio State University, the month and year of the final project.

8. References should follow a consistent format.

9. An electronic copy (Word or PDF) of the final approved report should be provided to your advisor and second reader, the Division Coordinator, and the Office of Academic Programs and Student Services by the Graduate School deadlines to submit thesis documents.

THE OHIO STATE UNIVERSITY

COLLEGE OF PUBLIC HEALTH

2019-2020 Guidelines for MPH Culminating Project

Division of Health Behavior and Health Promotion

Last revised August 2015

TABLE OF CONTENTS

GENERAL INFORMATION:

FOCUS AREAS:

GENERAL GUIDELINES

The culminating project for the Division of Health Behavior and Health Promotion is intended to provide students with the opportunity to integrate and synthesize knowledge and experience obtained during their academic course of study. For ideas of appropriate topics, review previous culminating projects in the OAPSS (Office of Academic Programs and Student Services) office (Room 100, Cunz Hall) and speak with your advisor. The culminating project is completed at the end of degree requirements, and although every project will be different, there are some general guidelines that are relevant to every project.

1. Students must choose a culminating project advisor. The culminating project advisor does not have to be your academic advisor, but needs to be a faculty member in the Division of Health Behavior and Health Promotion.

2. Students must also choose another faculty member with a primary appointment in the College of Public Health (preferably a member of the Division of Health Behavior and Health Promotion) as a "second reader." If your culminating project advisor is not your academic advisor, then you must select your academic advisor as your second reader. The culminating project advisor and the second reader constitute your Culminating Project Committee. You may add additional readers to your Committee, although this is rare.

3. The topic and format of each culminating project must be approved by your culminating project advisor. Most culminating projects will fit approximately into one of the following areas: (A) Community assessment; (B) Program planning; (C) Program evaluation; or (D) Secondary data analysis. The criteria for each of these options appear on pages 9-16. Other topics and format are possible with the approval of your advisor.

4. Before beginning work on your culminating project, write a one or two page proposal (as described on p. 6) which describes your topic; what you will do for the project; and which of the project types (above) best describes your project. E-mail your project advisor and second reader a copy of your proposal simultaneously and ask that they "reply all" with their suggested changes or approval. You need to get approval from both before beginning work on the project.

   If you subsequently decide to change your project, project advisor, or second reader, write a new proposal as above, and inform in writing, any project advisor or reader who will not be involved in the revised project.

5. Students may choose the Master's Thesis option for their culminating project (refer to page 5). If you intend to pursue a research career, discuss the Thesis option with your advisor.

6. This document assumes that most students will be completing their culminating projects for a spring semester graduation. If that does not apply to you, please discuss your projected timeline with your advisor.

7. In the Autumn semester before your intended graduation, register for the 1 credit seminar, PUBHHBP 7899.01.

   This seminar will meet a few times as a group, to get you started on a high-quality project. In addition, to earn full credit for this seminar, you are expected to meet with and work with your project adviser to begin working on the culminating project.

8. In the Spring semester in which you will graduate, register again for the 1 credit seminar, PUBHBP 7899.02, and also for 2 credits of Culminating project credit, PUBHLTH 7998, with your advisor. During spring semester, you will present your project to your advisor and second reader at a review meeting for formal approval. At the end of spring semester, all seminar participants will present their projects in a division-wide poster session.

HUMAN SUBJECTS REQUIREMENTS AND STUDENT RESEARCH

Details regarding human subjects requirements and student research are found in the CPH Graduate Student Handbook, Appendix H.

Discuss the specific requirements for your proposed project with your advisor as early as possible; remember to allow enough time for any required submission to the IRB.

THESIS OPTION

(This page refers only to students who choose to complete a Master's Thesis option for the culminating project.)

Students choosing the thesis option are usually planning to pursue a career in research and/or academia. Students will use skills in research design and data analysis. Usually, completion of a thesis option will entail working with original data. Students are expected to analyze data specifically collected for the thesis option or analyze a previously existing data set. A thesis option typically is organized as follows:

Chapter 1	Introduction to the Problem
	Hypotheses or Problem Statement
Chapter 2	Review of Literature
Chapter 3	Methods
Chapter 4	Results
Chapter 5	Conclusions and Recommendations

Topic choice and manuscript development must be completed under the supervision of an advisor. Students are required to complete a defense of their thesis option before their committee members and interested others. Students choosing a thesis option should plan to present their work at a national meeting and submit it for publication. The Graduate School has additional requirements for a Master's Thesis option and some different forms are required. These requirements can be found in the Graduate School Student Handbook: https://gradsch.osu.edu/handbook. The remainder of this document applies only to the culminating projects. If you think you are interested in completing a Master's Thesis option, discuss that option with your advisor at least two terms before you anticipate graduating.

CULMINATING PROJECT PROPOSAL INSTRUCTIONS

The culminating project proposal should describe your topic, what you will do for the project and whether your project is best described as community assessment, program planning, program evaluation, or secondary data analysis. This proposal should ordinarily be completed at least two terms before you intend to graduate to allow time for a thorough and thoughtful project to be carried out.

The proposal should include the following elements.

Topic Description

1. Describe the broad objective or purpose of the project.
2. Indicate which of the four culminating project options best describes your proposed project.
3. If applicable, describe the agency or organization that you will work with. Request a letter of support from the agency/organization and include a copy with your proposal.
4. Depending on the project option you have chosen, state your specific research questions, evaluation questions, or goals and objectives.
5. If you propose to plan a program, define your theoretical framework.
6. Explain why you want to conduct your proposed project and describe what need your proposed project addresses.

Methods

1. Describe who you will collect data from or what existing data sources you will use.
2. If you propose to plan a program describe where the program will be implemented.
3. If you propose to collect original data, describe how you will collect the data for your proposed project. List the measures you will use and/or the questions you will ask.
4. Describe how you will analyze the data. For example, if you plan to work with quantitative data, what comparisons will you make and/or what statistical tests will you use? If you plan to work with qualitative data, will you conduct a content analysis or perform another type of qualitative data analysis?

Provide your project advisor and second reader with a copy of your proposal (e-mail is fine) and ask them to suggest changes or to reply stating their approval.

TIMELINE REQUIREMENTS

Students and their culminating project advisor must agree upon a timeline for completion of their project. On the CPH website is a timeline checklist list for the requirements of the culminating project which can help guide you and your advisor through this process. In addition, your advisor may also ask that you meet other deadlines, such as submitting an outline or draft of your culminating project paper. Remember, ***you are responsible for meeting all of the deadlines***. The Graduate School deadlines for each term are available at the Graduate School https://gradsch.osu.edu/graduation-calendar.

The following requirements are especially important:

1. As noted in the Timeline Checklist, which is found on the CPH website, it is expected that your advisor will be kept fully apprised of your progress and will see drafts of your project write-up as it develops. The project advisor may require multiple changes before the draft is ready to be presented. Your project advisor and second reader must see a complete draft of your final Culminating Project report a minimum of one month before your expected review meeting date. You must provide both of your committee members with a correctly formatted (refer to page 8), clean and final hardcopy of your manuscript at least two weeks prior to the review meeting date.

2. By the tenth Friday of the term *before* you intend to graduate, complete an online Application for Graduation (found here: https://gradforms.osu.edu). Please note: the application is valid for that term only. Note that the final date for completing all requirements (including the project presentation) and delivering the Master's Examination Report form to the Graduate School is generally about *3-4 weeks before* the end of the term. A specific calendar of dates is available on the Graduate School web site (https://gradsch.osu.edu/graduation-calendar).

3. HBHP culminating projects will generally be presented in two formats: a review meeting with your advisor and second reader, and a poster session. The Culminating Project seminar will guide you through the timeline and process of preparing a poster.

4. Upon completion of the review meeting and any final revisions to your approved culminating project paper, your committee will electronically approve your Master's Examination Report. Failure for your committee to do so will result in a delay of graduation.

If you do not meet published graduation deadlines, but have completed all degree requirements by the last business day prior to the first day of classes for the following term, you may graduate the following term without registering or paying fees. Many HBHP faculty, however, are not available during break to schedule a review meeting or approve revisions to your culminating project paper. **Failure to meet these requirements may require you to enroll for an additional term.**

MANUSCRIPT REQUIREMENTS

1. Although each culminating project will vary, most manuscripts will be at least 20-25 pages, not including tables, figures or appendices.

2. Discuss with your advisor whether they want an electronic or paper copy of your manuscript. Electronic copies are generally used to deposit the final copy with OAPSS.

3. The manuscript must be double spaced, and with a margin of at least one inch on each side.

4. The manuscript must be in 12 point font; however tables and footnotes may be in 10 point font if necessary.

5. Page numbers should be inserted (center bottom) on each page except the Title Page and the Table of Contents.

6. All Figures and Tables must be numbered, and all appendices must be labeled alphabetically.

7. The Title Page should include the title of the project, the student's name and degree(s), the committee members' names, The Ohio State University, the month and year of the final project.

8. The manuscript may include:
   A) A Title Page
   B) Table of Contents
   C) Abstract or an executive summary
   D) Literature review
   E) Agency Description
   F) Methods
   G) Results
   H) Discussion
   I) References
   J) Tables
   K) Appendices

9. References should follow a standard format such as the formats used by journals. One frequently used format is the American Psychological Association format: https://www.library.cornell.edu/research/citation/apa

10. Check with your advisor to see whether they want the final copy as electronic or paper.

COMMUNITY ASSESSMENT

This option for the culminating project is to provide students with an opportunity to take a principal role in planning a community assessment. This option involves an assessment for a community agency/organization. Remember that your culminating project advisor must approve the topic for your project. In addition, it is strongly advised that you update your committee members on a regular basis. The details of the final project report for this area of concentration are provided below. The sections listed below should be followed in most cases; however, modification may be appropriate. In such cases, the student should provide some rationale for the exclusion of a particular section.

Abstract/Executive Summary
An abstract is a brief summary of approximately 250 words. The major components are: Purpose, Methods, Results/Outcomes, Conclusions, and Implications. An executive summary is an expanded version of the abstract and is typically one to two pages in length.

Table of Contents
The table of contents lists all the major topical areas of the document with the corresponding page numbers.

Introduction/Purpose
The introduction should state the rationale for the project. Why is the assessment being conducted? Exactly what do you hope to learn? What were your hypotheses before beginning?

Agency Description
The agency description presents the agency/organization involved in the project. It should include a graphic presentation of the organizational structure and a discussion of how the project fits in with mission and other programs of the agency.

Literature Review
Place the assessment in the context of what is already known about the topic by reviewing relevant research in this area. A literature review is a synthesis option of what researchers/scholars have written about a topic organized according to a guiding concept. The purpose is not to list as many articles as possible, rather, to demonstrate your ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that you have identified for your project. The literature review should include the epidemiological information, the related behavioral and environmental information, information about the target population, and any gaps in the literature that you have identified. Remember to define specific terms that will be used in the text of your report and remember to "tell a story."

Methods
This section should describe each data set used to perform the assessment, including how, when, where and why each was collected. When students collect original data, include a description of the research design and data collection methods. Also, be sure to discuss how the limitations of your design (i.e., threats to validity) may bias your results. Data collection materials (i.e. survey, interview protocol, consent forms) should be included in the appendices.

Results
This section presents the results in the same order as the purpose of the assessment was described earlier. Students are strongly encouraged to employ tables and graphs to clarify the presentation of results. The section should highlight key findings from the table and charts but need not reiterate every number from every table in narrative form.

Discussion
Discussion of the findings (interpretation of the data) as they relate to the needs assessment should be presented in this section. Be sure to discuss any limitations of the data sets and how these limitations might bias your results.

Conclusions
Discuss to what extent the results provide clear answers to the questions posed in the purpose section. Also, provide recommendations for action and suggestions for what the agency could do to learn more about the topic.

References
All literature and personal communications cited in the proposal must be listed in the reference section. References should follow the American Psychological Association format.

Appendices
Anything not included in the text of the project report that is important for the understanding of the community assessment should be attached as an appendix. All appendices must have references within the text of the project report and must be included as part of the table of contents.

PROGRAM PLANNING

This option for the culminating project is to provide students with an opportunity to take a principal role in planning a health promotion project for a community agency. This must be a "real-life" plan with a partnering organization who are interested in potentially offering the program. Remember that your culminating project advisor must approve the topic for your project. In addition, it is strongly advised that you update your committee members on a regular basis. The details of the final project report for this area of concentration are provided below. The sections listed below should be followed in most cases; however, modification may be appropriate. In such cases, the student should provide some rationale for the exclusion of a particular section.

Abstract/Executive Summary
An abstract is a brief summary of approximately 250 words. The major components are: Purpose, Methods, Results/Outcomes, Conclusions, and Implications. An executive summary is an expanded version of the abstract and is typically one to two pages in length.

Table of Contents
The table of contents lists all the major topical areas of the document with the corresponding page numbers.

Introduction
The introduction should state the rationale for the project.

Literature Review
A literature review is a synthesis option of what researchers/scholars have written about a topic organized according to a guiding concept. The purpose is not to list as many articles as possible, rather, to demonstrate your ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that you have identified for your project. The literature review should include the epidemiological information, the related behavioral and environmental information, information about the target population, and any gaps in the literature that you have identified. Remember to define specific terms that will be used in the text of your report and remember to "tell a story."

Theoretical Framework
The structure and organization of the program planning process provide the framework on which to build the project. There are several different models that have been used for planning health promotion programs. In this section discuss which planning model you are using and why it applies to your project.

Agency Description
The agency description presents the agency/organization involved in the project. Include a letter or statement from the agency indicating their interest in having the proposed program planned. It should include a graphic presentation of the organizational structure and a discussion of how the project fits in with mission and other programs of the agency.

Program Content, Goals and Objectives
In this section, provide an overview of the specific program content, along with goals and objectives. The project goals and objectives define the scope and the direction of the project. Goals are broad timeless statements that include all aspects of a program. Objectives outline in measurable terms the specific changes that will occur in the target population in a designated time frame as a result of your program. Include a complete description of the program content (i.e., specific messages, slides, lesson plans or other materials) in an appendix.

Intervention Methods/ Data collection
The approach used to address the project questions or reach the goals and objectives. Examples of what this section may include are a discussion of the project target population, instruments that may be used, potential data collection methods, project implementation plans, training plans, a plan for data analysis and evaluation.

Alternatively, a “program planning” project might include focus groups or another data collection method which are designed to collect information which can be used in planning a program.

Discussion, Implications, and Recommendations

Discussion of the findings (interpretation of the data) as they relate to the project questions, goals, and objectives should be presented in this section. Implications of the findings for the agency/organization should be included and how the findings may impact policy. Recommendations for use of the findings and for future research should also be presented in this section. Be sure to discuss any limitations of the data sets and how these limitations might bias your results.

References

All literature and personal communications cited in the proposal must be listed in the reference section. References should follow the American Psychological Association format.

Appendices

Anything not included in the text of the project report that is important for the understanding of the design, implementation, or conclusions of the project should be attached as an appendix. For example: instruments, consent forms, the budget and budget justification, timeline, etc. All appendices must have references within the text of the project report and must be included as part of the table of contents.

PROGRAM EVALUATION

This option for the culminating project is to provide students with an opportunity to take a principal role in the evaluation of a health promotion project for a community agency. Remember that your culminating project advisor must approve the topic for your project. In addition, it is strongly advised that you update your committee members on a regular basis. The details of the final project report for this area of concentration are provided below. The sections listed below should be followed in most cases; however, modification may be appropriate. In such cases, the student should provide some rationale for the exclusion of a particular section.

Abstract/Executive Summary
An abstract is a brief summary of approximately 250 words. The major components are: Purpose, Methods, Results/Outcomes, Conclusions, and Implications. An executive summary is an expanded version of the abstract and is typically one to two pages in length.

Table of Contents
The table of contents lists all the major topical areas of the document with the corresponding page numbers.

Introduction/Purpose
The introduction should state the rationale for the project. Who are the key stakeholders in the evaluation and what are their unique and collective interests?

Literature Review
A literature review is a synthesis option of what researchers/scholars have written about a topic organized according to a guiding concept. The purpose is not to list as many articles as possible, rather, to demonstrate your ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that you have identified for your project. The literature review should include the epidemiological information, the related behavioral and environmental information, information about the target population, and any gaps in the literature that you have identified. Remember to define specific terms that will be used in the text of your report and remember to "tell a story."

Program/Intervention Logic Model or Theory of Change
What conditions make the program necessary? What activities are provided to address conditions? What outcomes are anticipated? What long-term impact is desirable?

Evaluation Question
What specific question or questions must be answered by the evaluation study?

Agency Description
The agency description presents the agency/organization involved in the project. It should include a graphic presentation of the organizational structure and a discussion of how the project fits in with mission and other programs of the agency.

Evaluation Design
What design was used to answer the evaluation question? Was that design sufficient? What are the major threats to validity in the evaluation design? How might those threats be dealt with in follow-up studies?

Methods, Key Variables and Instrumentation
What methods and procedures were used to collect and analyze data? What were the key variables of interest? How were those variables measured?

Results
Presentation of the evaluation findings should be included in this section. Describe the results of the data analyses. All tables and figures should be referred to within the text. If a table or a figure is used from another source there needs to be a reference citation. If possible, tables and figures should be placed within the text. Be sure to discuss any limitations of the data sets and how these limitations might bias your results.

Conclusions and Recommendations
How was the data used to facilitate decision-making or program improvement? This section should also include the student's self-reflection about the project.

Ethics
What ethical issues were presented by the evaluation study and how were they addressed?

References
All literature and personal communications cited in the proposal must be listed in the reference section. References should follow the American Psychological Association format.

Appendices
Anything not included in the text of the project report that is important for the understanding of the evaluation project should be attached as an appendix. All appendices must have references within the text of the project report and must be included as part of the table of contents.

SECONDARY DATA ANALYSIS

This option for the culminating project is to provide students with an opportunity to analyze existing data related to a public health problem. Remember that your culminating project advisor must approve the topic for your project. In addition, it is strongly advised that you update your committee members on a regular basis. The details of the final project report for this type of project are provided below. The sections listed below should be followed in most cases; however, modification may be appropriate. In such cases, the student should provide some rationale for the exclusion of a particular section.

Abstract/Executive Summary

An abstract is a brief summary of approximately 250 words. The major components are: Purpose, Methods, Results/Outcomes, Conclusions, and Implications. An executive summary is an expanded version of the abstract and is typically one to two pages in length.

Table of Contents

The table of contents lists all the major topical areas of the document with the corresponding page numbers.

Introduction/Purpose

The introduction should state the rationale for the project. Why is the analysis being conducted? Exactly what do you hope to learn? What were your hypotheses before beginning?

What is the public health importance of your proposed analysis? To whom will the results be useful?

Literature Review

Place the analysis in the context of what is already known about the topic by reviewing relevant research in this area. A literature review is a synthesis of what researchers/scholars have written about a topic organized according to a guiding concept. The purpose is not to list as many articles as possible, rather, to demonstrate your ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that you have identified for your project. The literature review should include information on what has already been done or what is already known about your topic, and any gaps in the literature that you have identified. Remember to define specific terms that will be used in the text of your report and remember to "tell a story."

Methods

This section should describe the data set(s) you propose to analyze and how they will be obtained. Include information on the strengths and limitations of the data for your proposed analysis (for example, amount of data available, quality of questions on your topic, generalizability of the sample). Describe the proposed analysis methods.

Results

This section presents the results organized around the proposed questions. Students are strongly encouraged to employ tables and graphs to clarify the presentation of results. The section should highlight key findings from the table and charts but need not reiterate every number from every table in narrative form.

Discussion

Discussion of the findings (interpretation of the data) as they relate to the hypotheses or objectives of the study should be presented in this section. Be sure to discuss any limitations of the data sets and how these limitations might bias your results.

Conclusions
Discuss to what extent the results provide clear answers to the questions posed in the purpose section. Also, provide recommendations for action and implications for the field of public health.

All literature and personal communications cited in the proposal must be listed in the reference section. References should follow the American Psychological Association format.

Appendices

Anything not included in the text of the project report that is important for the understanding of the project should be attached as an appendix. All appendices must have references within the text of the project report and must be included as part of the table of contents.

THE OHIO STATE UNIVERSITY

COLLEGE OF PUBLIC HEALTH

Master of Public Health
Program for Experienced Professionals

19-20 Guidelines for the Culminating Project

Revised August 2018

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GENERAL INFORMATION

General Guidelines

The culminating project for the MPH Program for Experienced Professionals (PEP) is intended to provide students with the opportunity to integrate and synthesize knowledge and experience obtained during their academic course of study. Although every culminating project will be different, there are some general guidelines that are relevant to every project.

1. Students beginning the MPH-PEP program in 2016 or later must begin by completing the one-credit Culminating Project Preparation Seminar course (PUBHLTH 7996) the semester before beginning your culminating project. To request approval to register for the Culminating Project Prep Seminar, complete the **Permission to Enroll** form. The program director or the faculty advisor will approve this request. Once approved, you will be added to the class by OPASS staff. See the Culminating Project Prep Seminar Section below for more information.

2. Students ready to register for two-credit Culminating Project (PUBHLTH 7998) should follow the same process as for the Culminating Project Prep Seminar and use the same **Permission to Enroll** form. Students beginning the MPH-PEP before 2016 should Complete the Permission to enroll for PUBHLTH 7998 as a three-credit course.

3. The culminating project prep seminar and culminating projected are graded S/U. Students may register for additional independent studies credit to complete their culminating projects. Increasing to a total of five hours of credit for the culminating project requires an approved proposal and a justification and approval from your culminating project advisor. The hours of credit may be taken over more than one term, with advisor approval. If a student takes more than one semester to complete the culminating project, an *Incomplete* will be assigned until the project has been completed.

4. The actual timing of registration for credit for your culminating project should be discussed with your advisor and the OAPSS staff ***before you register***. Because students are required to take three credits during the semester of graduation, students should ensure they will meet this University requirement *before* seeking permission to enroll in the Culminating Project Prep Seminar.

5. Each student will have a culminating project advisor. Students will work with the Program Director to identify a faculty member in the College of Public Health to serve as the culminating project advisor. Faculty serving as a culminating project advisor must have a primary advisor appointment in the College of Public Health, defined as receiving over 50% of salary from the College of Public Health. Students are recommended to discuss project ideas with the Program Director and appropriate faculty members at least two semesters prior to expected graduation.

6. Students must also choose another OSU faculty member as a second reader. The second reader must have M or P graduate faculty status at OSU. The second committee member is chosen with the agreement of the student and the faculty advisor. The second reader should be chosen as early as possible and no later than the 5th week of the term before intended term of graduation. The culminating project advisor and the second reader constitute your Culminating Project Committee. You may add additional readers to your Committee as appropriate, however it is not recommended to have more than three members on a Committee.

7. You should establish a clear timeline for progress and check-in meetings with your culminating project advisor. These should include the number and timing of meetings with the advisor, number and content of drafts, and other critical steps.

8. Upon completion of the project, students are required to present the project to and respond to questions from the Committee during a culminating project review meeting. With the permission of your committee, others may be invited to this meeting.

Culminating Project Prep Seminar

MPH-PEP students beginning the program in 2016 or later are required to complete the Culminating Project Preparation course the semester before you begin the Culminating Project.

The purpose of the Prep course is to give students and advisors more time to complete the required project planning components, including:

1. Culminating Project Proposal
2. Culminating Project Advisor Form
3. CITI Training Completion Certification
4. IRB or other review board application (if applicable)
5. Culminating Project Topic Description and Methods Sections
6. Project Management Plan

The Prep course is an online, asynchronous course, but must be satisfactorily completed prior to beginning the project. It is the student’s responsibility to complete all required assignments within the course’s Carmen site to satisfactorily complete the project.

The MPH-PEP program director will assign the S/U grading based on assignment completion. However, any questions related to the culminating project must be addressed to the student’s faculty or culminating project advisor. Any questions about the course requirements can be addressed through the course’s Carmen site.

Culminating Project Timeline and Graduation Requirements

Students and project advisors must agree upon a timeline for completion of the project, subject to the constraints of Graduate School deadlines. In addition, students may be required meet other deadlines, such as submitting outlines or drafts of project paper, etc. **Students *are responsible for meeting all deadlines***, some of which are:

1. Graduation applications are required to be submitted the 10th Friday **prior to the term you intend to graduate**. The application is on-line and available at https://gradforms.osu.edu. Please note: the application is valid for that term only.

2. As noted above, students must register for a minimum of three credit hours during the term of graduation. Two of these three hours typically will be credit for the culminating project (PUBHLTH 7998), but it is the student's responsibility to work with their advisor and the MPH-PEP program director to ensure this requirement is met.

3. Upon completion of the culminating project, students are required to successfully complete a Committee review. This is a one-hour oral exam, with the student giving a 30-minute presentation followed by 30 minutes of questions and answers from the Committee.

4. The review should be scheduled during the term you expect to graduate and in consideration of Graduate School deadlines for document submission. It is critical to work the project advisor to establish a timeline that leaves enough time to allow the Committee to review the document and the student enough time to revise before submitting to the college.

5. Students must provide the Committee members with a correctly formatted (refer to page 6), near-final draft of your project documents <u>at least two weeks prior to the review meeting date</u>. To do this, students generally must finish their projects by the 11th or 12th week of the Spring or Autumn term to give their Committee members ample time for review. Students completing their culminating project in the summer will be required to complete their project in the eighth or ninth week.

6. If required by the culminating project Committee, students will revise the document(s) until the committee finds it satisfactory. Once approved, the student will email the final Culminating Project to CPH-Graduation@osu.edu. Note that the final date for completing all requirements (including the project presentation) and electronically submitting the project to the Graduate School is generally about *3-4 weeks before* the end of the term. **Failure for your Committee to do so by Graduate School deadlines will result in a delay of your graduation.** A specific calendar of dates is available on the Graduate School website https://gradsch.osu.edu/calendar.

7. If you do not meet published graduation deadlines but have completed all degree requirements by the last business day prior to the first day of classes for the following term, you may graduate the following term without registering or paying fees. Please

remember, however, that some faculty members may not be available between terms to schedule a review meeting or approve revisions to your culminating project paper. If you expect to meet these "end of term" deadlines, it is your responsibility to determine whether your committee will be available. Failure to meet any of these deadlines may require you to enroll and pay tuition for an additional term.

Culminating Project Documentation General Requirements

All students are required to complete a final document for their project. This document will look different based on the type of project, but the following are general rules to follow for all documents.

- Although each culminating project will vary, most documents will be at least 20-25 pages, not including tables, figures or appendices. The length and content will obviously depend on the scope of the project and hours of credit.

- All documents must be typed on one side of the page only, double spaced, with a margin of at least one inch on each side, on white paper (8.5 x 11 inches), and bound or stapled.

- Documents must be in 12-point Arial font; however, tables and footnotes may be in 10-point font, if necessary.

- Page numbers should be inserted on each page except the title page.

- All figures and tables must be numbered, and all appendices must be labeled alphabetically.

- The cover page should include the title of the project, the student's name and degrees, the committee members' names, The Ohio State University, the month and year of the final project.

- The sections of the document will depend upon the nature of the project, as explained on the following pages. However, every project should have a title page, table of contents, abstract or executive summary, and references. The remainder of the work will vary according to the project requirements.

- Citation of references should follow a standard format, such as that used for biomedical journals or the American Psychological Association. References should be from high-quality and respected sources. You should be ready to justify the use of all resources. Helpful references for citations and references include:

    a. http://www.apastyle.org/about-apa-style.aspx *(Preferred)*
    b. OSU Libraries *Choosing and Using Sources: A Guide to Academic Research*, Section 8. *(Preferred)*
    c. http://writecite.com/

d. http://www.calvin.edu/library/knightcite/
e. https://scholar.google.com/citations?view_op=new_profile&hl=en

Additionally, staff of the OSU Prior Health Sciences Library can help if you have questions about citation styles.

Once approved by the Committee, an electronic copy (word or pdf) of your final documents must be submitted to OAPSS by the Graduate School deadline.

Report Format

The student and culminating project advisor must agree on the final deliverables for each project. Because projects will vary in format, size and scope, all students will submit a culminating report in addition to other project deliverables. Generally, the final report contents may include the following sections; **however, the contents of the report will vary based on the project, its scope, and other factors to be agreed upon by the committee**:

Abstract/Executive Summary

An abstract is a brief summary of approximately 250 words. The major components are:

Purpose, Methods, Results/Outcomes, Conclusions and Implications. An executive summary is

an expanded version of the abstract and is typically one to two pages in length.

Table of Contents

The table of contents lists all the major topical areas of the document with the corresponding page numbers.

Introduction/Purpose

The introduction should state the rationale for the project. What is primary problem the project is designed to address, and why is it of interest?

Literature Review

A literature review is a synthesis of what researchers/scholars have written about a topic organized according to a guiding concept. The purpose is not to list as many articles as possible, but rather to demonstrate your ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that you have identified for your project. The literature review should relevant information about the approach; its use in your proposed setting; information about the target population, if appropriate; a review of the use of the approach in the field or in similar fields; critiques of previous uses of the approach; and any gaps in the literature you have identified.

Agency/Organization Description

If relevant, describe the agency/organization involved in the project. This should include a graphic presentation of the organizational structure and a discussion of how the project relates to the mission and other programs of the agency/organization.

Project Design

What is the underlying model or tool being used in project? What are the specific goals and objectives to be achieved by this project? What design was used to achieve these goals? Was that design sufficient? What resources were anticipated and needed to implement the project? Which partners were involved in the project, and how were these partners involved throughout the process? If appropriate, this section should include a key driver diagram or logic model.

Methods, Key Variables and Instrumentation

What methods and procedures were used to collect and analyze data? What were the key variables of interest? How were those variables measured? What data will be used?

Results

Project outcomes should be presented in this section. The description should present the key metrics for objectives and goals. All tables and figures should be referred to within the text. If a table or a figure is used from another source there needs to be a reference citation. If possible, tables and figures should be placed within the text; larger tables and figures may be included in an appendix.

Discussion, Implications, and Recommendations

Discussion of the findings (interpretation of the project outcomes) as they relate to the project questions, goals, and objectives should be presented in this section. Implications of the findings for the agency/organization should be included and how the findings may impact policy. Recommendations for use of the findings and for future activity should also be presented in this section. This section should also include the student’s self-reflection about the project.

References

All literature and personal communications cited in the proposal must be listed in the reference section. References should follow a standard citation format.

Appendices

Anything not included in the text of the project report that is important for the understanding of the design, implementation, or conclusions of the project should be attached as an appendix. For example: instruments, consent forms, timeline, etc. All appendices must have references within the text of the project report and must be included as part of the table of contents.

CULMINATING PROJECTS

Project Types

Students should work with their advisors at the beginning of their second year to plan a culminating project. One of the first decisions will be the type of project to complete. In the past, many students completed either an applied research project tor wrote a grant proposal. However, because of the diversity of MPH PEP students, it may be appropriate to consider additional project types. The student's academic advisor will typically also serve as the culminating project advisor; however, if another faculty member within the College of Public Health is identified as more appropriate for the project, the student, with the both faculty members' consent, may name another faculty member culminating project advisor. In this case, the academic advisor will serve as the project's second reader.

Examples of potential projects include:

- Designing and completing a quality improvement project
- Writing a grant proposal
- Developing an applied research proposal or completing a research project
- Creating an online training or education module focusing on the public health, health care or community health practitioner
- Developing a policy white paper and proposal
- A comprehensive evidence review and accompanying policy brief or development of guidelines
- Evaluating a community coalition or collaborative process
- Completing a health impact assessment
- Developing a performance management system for an agency or organization

Three projects types are discussed listed below.

Quality Improvement Process

Students wishing to design and complete a quality improvement project should work closely with their committee member to ensure the scope of the project satisfies culminating project requirements. While the appropriate scope of the project will ultimately be determined by the committee, students should at a minimum be involved with the design and planning of the project, and they should lead its implementation, data collection and reporting. Students must have approval from their supervisor or the organizations quality improvement lead, and they are encouraged to work with their organization's quality improvement team, if present. Projects can use any quality improvement process; however, students must fully describe and justify the use of the process. Project can be completed in a number of settings, including governmental public health and health care.

The final report for a quality improvement project may be adapted as necessary to fit the project and with approval from the Committee. Resources to guide students in writing a quality improvement project report include:

- *Standards for QUality Improvement Reporting Excellence (SQUIRE) 2.0 Guidelines*.
- Institute for Healthcare Improvement's Publications page; and
- Brian M. Wong and Gail M. Sullivan (*2016*) How to Write Up Your Quality Improvement Initiatives for Publication. Journal of Graduate Medical Education: May 2016, Vol. 8, No. 2, pp. 128-133. http://www.jgme.org/doi/full/10.4300/JGME-D-16-00086.1?code=gmed-site.

Grant Proposal

Public health and health system professionals often rely on grant funding for design and implementation of interventions, evaluation of programs, delivery of services, or research. If chosen, a grant proposal should not be a simple "boilerplate" request for funds to continue operations of an existing program. At a minimum, the proposal should require the following elements: 1) design of the research study, program or intervention, evaluation, or new service; 2) a justification of the proposed approach based on a literature review and/or other evidence; and 3) a budget with appropriate justification.

While it is expected that the grant proposal be written as if to submit, submission is not required. As part of the proposal, you are required to provide a copy of the Request for Proposals (RFP) or similar call for proposals to which you are responding or other support for the priorities and expectations of the target sponsor. The choice of funding source is up to you, but typical choices would include federal and state agencies (CDC, NIH, ODH, etc.), national foundations (Robert Wood Johnson, Pew, Kellogg, etc.), other non-profit organizations (American Cancer Society, Red Cross, etc.), or various local foundations and organizations (Columbus Foundation, Columbus Medical Association Foundation, Osteopathic Heritage Foundation, etc.). Remember that your culminating project advisor must approve the topic for your project. In addition, it is strongly advised that you update your Committee members on a regular basis to address member questions or concerns in a timely manner.

The details of the final grant document for this type of project are provided below. The sections listed below should be followed in most cases; however, modification may be appropriate because of the nature of the proposal or the sponsor's requirements. In such cases, the student should provide some rationale for the departure from the typical contents and have the advisor's approval.

Applied Research Project

Applied Research Projects provide students with opportunities to pursue an area of interest through original research.

Research projects can be one of the following types: (1) investigation of a research question expressed in traditional hypothesis form; (2) evaluation of a program, service, intervention, etc.; (3) cost-effectiveness analysis or cost-benefit analysis; or (4) comparative effectiveness projects involving large healthcare databases. While sometimes considered a master's thesis, most projects will be somewhat different in approach and technical content from a more comprehensive thesis. Research projects should be tailored as more of a practice-based research project compared to a more rigorous academic study.

As with grant proposals, you will need to discuss potential topics with your culminating project advisor and agree on both topic and the appropriate credit hours. Because the research project need not be a response to a specific sponsor, you are not required to identify an RFP or target funding source; however, both might be helpful steps if you intend on expanding the project outside of the three-credit hour requirement.

The details of the final report for this type of project are provided below. The sections listed should be included in most cases; however, modification may be appropriate for particular topics. In such cases, the student should provide some rationale for departure from the typical structure and have the advisor's approval.

THE OHIO STATE UNIVERSITY
COLLEGE OF PUBLIC HEALTH

THE OHIO STATE UNIVERSITY
COLLEGE OF VETERINARY MEDICINE

Department of Veterinary Preventive Medicine

Master of Public Health
Veterinary Public Health Specialization

2019 - 2020
GUIDELINES FOR CULMINATING PROJECTS

August 2019

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GENERAL PROJECT GUIDELINES

The culminating project for the Masters of Public Health – Veterinary Public Health Specialization (MPH-VPH Program) is intended to provide students with the opportunity to integrate and synthesize knowledge and experience obtained during their academic course of study. For ideas of appropriate topics, students should review previous culminating projects in the MPH-VPH program, contact the Veterinary Public Health (VPH) director, or speak with their advisor. Although every culminating project will be different, there are some general guidelines that are relevant to every project.

1. Each student must choose a **Culminating Project (CP)** in conjunction with the **Faculty Advisor.**

   The Faculty Advisor must be a faculty member in the Veterinary Preventive Medicine Department, or must be a faculty member at the OSU College of Veterinary Medicine approved by the VPH committee.

2. **All CPs must have a significant veterinary component of direct importance to public health.** They must be directly related to any of the fields or areas covered by Veterinary Public Health such as: zoonotic diseases, food safety and foodborne diseases, epidemiology, environmental health, biosecurity, bioterrorism preparedness, or comparative and applied biomedical research among others.

3. If the student decides upon a CP that is outside the Faculty Advisor's area of expertise, the student may identify a **Culminating Project Advisor (CPA)** with the input of the Faculty Advisor. The student must obtain the CPA's direct consent to serve on his/her project. The CPA will work with the student and the Faculty Advisor to design and/or develop the CP.

4. A minimum of three committee members are required to comprise the **Culminating Project Committee**. They are the Faculty Advisor, a College of Public Health Full Time Faculty member, and a third reader. Therefore, the student and his/her Faculty Advisor must choose a faculty member from the College of Public Health as a "**second reader**" and another faculty member of the Department of Veterinary Preventive Medicine as a "**third reader.**" These three professionals will make up the student's MPH-VPH committee.

   However, if the student has a **Culminating Project Advisor** or any other faculty or professional (with "M" status from the Graduate School) directly involved in his/her Culminating Project they could chose such a person as the third reader. The student may add additional readers to the Committee, although this should be done on a case-by-case basis. All members of the committee should be chosen as early as possible in the academic program, but no later than the beginning of the student's final semester. Many forms can be found at: https://cph.osu.edu/students/graduate/handbooks/graduate-student-handbook/appendix-j-cph-forms.

5. The Faculty Advisor must approve the topic and format of the student's project as well as the timeline referred to in the next section. For MPH–VPH students pursuing a non-thesis path, the available formats are: (1) Integrative Writing Project, (2) Grant Proposal, or (3) Applied Research Project. The criteria for each of these options appear on pages 10-18. Once the project is selected the student needs to update the **Student Control Sheet**. The **MPH-VPH director** will then assure the appropriateness of the project from the Veterinary Public Health point of view, and that such project will fulfill the requirements of the College of Public Health.

   Students also have the option to complete a traditional research-based master's thesis as their Culminating Project. Although this option is less frequently chosen, those students who expect to pursue a doctorate or a research career are encouraged to consider a thesis, and there are of course some students who are simply interested in a topic that is best approached in the thesis format. Students interested in the thesis path should discuss this with their advisers no later than the beginning of their second semester of enrollment; to be sure they understand the requirements and time line. It is expected that thesis work generates a peer-reviewed publication. Specific guidelines about this option can be seen on pages 19-21.

6. The culminating project is eligible for three to six hours of course credit, graded Satisfactory/Unsatisfactory. The level of credit is established by the scope and requirements of the project. Because the typical MPH–VPH course carries 3 credit hours, a rough guide would be that the hours should approximate the work required for either one or two regular courses. According to OSU guidelines, one hour of credit should require approximately three hours per week for fourteen weeks in order to earn an average grade. Translated for this purpose, **a 3 credit hours project should take a minimum of 120 hours of work**, and a 6 hour project a minimum of 240 hours. The student and his/her Faculty Advisor will need to discuss and agree on the appropriate hour assignment for the project. The hours of credit may be taken over more than one semester. Students can be approved for up to three hours of credit in order to begin work on the project. Increasing to a total of six hours requires that the student has an approved proposal and their adviser has agreed that it justifies the higher credit level.

7. The actual timing of registration for credit for the culminating project should be discussed with the Faculty Advisor, the MPH-VPH director, and the Office of Academic Programs & Student Services staff ***<u>before the student registers</u>***.

8. After completion of the culminating project, the student is required to present it to the student's Culminating Project Committee members at the final presentation meeting **or Culminating Project Oral Defense.** With the permission of the committee, others may be invited to this meeting (open session), otherwise only the Committee members should be present (closed session).

9. A Satisfactory/Unsatisfactory result on the culminating project and the oral defense will be reported to the Graduate School using the electronic **Masters Examination Report** provided to the Faculty Advisor, who will determine the student's eligibility to graduate by the Graduate School deadline (typically 3-4 weeks before the end of the semester).

PROJECT TIMELINE REQUIREMENTS

The student and the Faculty Advisor must agree upon a timeline for completion of the project, subject to the constraints of Graduate School deadlines, and provide a copy to the MPH-VPH director. There is a **Culminating project timeline** which can help guide the student and the advisor through this process. In addition, the advisor may require that the student meet other deadlines, such as submitting outlines or drafts of the culminating project paper. Remember, ***the student is responsible for meeting all of the deadlines***. The deadlines for each semester are available at the Graduate School: https://gradsch.osu.edu/graduation-calendar.

The following requirements are especially important:

1. The student must schedule a meeting for his/her final **Culminating Project oral defense** with their committee during the semester they expect to graduate. The meeting should be scheduled in a timely manner, so that the student has sufficient time to make the usual necessary changes after the meeting, and the committee members have time to approve the revisions and approve the Master's Examination Report by the due date. See Appendix B to obtain an idea of the time involved just in the review process.

   Note: the student should lead the arrangement of the date, time, and room for the CP defense and inform the VPH coordinator to advertise the defense at least 5 business days in advance. Only by request of the advisor will the defense be "close doors".

2. The student must provide the committee members with a correctly formatted (refer to page 7) printed **final approved draft** of the manuscript **at least two weeks prior to the date of his/her oral defense.** The final approved draft is defined as the draft that has been reviewed by the adviser and he/she has approved it to be sent to the committee members.

3. Upon completion of the final oral defense meeting and **after all the final revisions from the committee members to the student's culminating project manuscript have been included in the final version (certified by the academic advisor)** the student must provide a bound final revised version of the culminating project approved by the advisor. The student must also e-mail an electronic copy (either Word or pdf) of the CP final version to the VPH director and the Office of Academic Programs & Student Services by the Graduate School deadlines for approved thesis/dissertation documents. Once this has been completed the committee will approve the student's **Master's Examination Report**. The committee is required to adhere to the Graduate School deadline of submitting the Report. Dates and Deadlines can be found at: https://gradsch.osu.edu/graduation-calendar **Failure to do so will result in a delay of your graduation.**

   Note: the committee could also approve the Master's Examination report the day of the exam and delegate to the academic advisor to certify that their changes and suggestions have been included in

the final CP version. In either case, the advisor will not give their final approval until the student has complied with all the requirements indicated above to be released from the program.

4. If the student does not meet published graduation deadlines, but has completed all degree requirements by the last business day prior to the first day of classes for the following semester, the student may graduate the following semester without registering or paying fees (end of semester graduation). Please remember, however, that some faculty members may not be available between semesters to schedule a final oral defense meeting or approve revisions to the student's culminating project paper. If the student expects to meet these "end of semester" deadlines**, it is his/her responsibility** to determine whether their committee will be available. Failure to meet any of these deadlines may require the student to enroll and pay tuition for an additional semester.

MANUSCRIPT REQUIREMENTS

1. The manuscript should be a significant effort, but specific expectations concerning the length of the manuscript may differ because of topic, analytic approach, etc. However, most manuscripts should be at least 35 pages, not including references, tables, figures or appendices. The length and content will obviously depend on the scope of the project and hours of credit.

2. The final version of the manuscript must be typed on one side of the page only, double spaced, justified with a margin of at least one inch on each side, and on white acid-free paper (8.5 x 11 inches) and bound.

3. The manuscript must be in Times New Roman 12-point font; however, tables and footnotes may be in 10-point font if necessary. Indent the first line of each paragraph. The style must be consistent throughout your document. All paragraphs must have the first line indent.

4. Page numbers should be inserted (center bottom) on each page ***except the title page***. Major headings (i.e. Abstract, Table of Contents, Introduction, Materials & Methods, Results, Conclusion and references References) aligned in the center and bolded in 16-point font. Minor or subheadings should be aligned left, bold, and underlined in 14-point font.

5. All figures and tables must be numbered, and all appendices must be labeled.

6. The cover or title page should include the Master of Public Health, Veterinary Public Health Specialization, the title of the project, the student's name including their degrees, the committee members' names, the text "Submitted in Partial Completion of Requirements for the Master of Public Health Degree at The Ohio State University," the month and year of the final project. An example is attached to the end of this document (Appendix C).

7. The sections of the manuscript will depend upon the nature of the project, as explained on the following pages. However, **every culminating project manuscript must have a 1) title page, 2) an abstract or executive summary, 3) a table of content (and a table of figures and tables if present), and 4) references**. The remainder of the work will vary according to the project requirements.

8. An optional Acknowledgement Page may be placed before the references. This page includes a brief, sincere, professional acknowledgment of the assistance received from individuals, advisor, faculty, and institutions.

9. References should follow the standard citation format used by the Journal of the American Veterinary Medicine Association (JAVMA). They should be formatted without a hanging indent and the style must be consistent throughout the reference section. Do not double space the references.

Journals:

1. Hoet AE, Saif LJ. Bovine torovirus (Breda virus) revisited. *Animal Health Research Reviews* 2004; 5(2):157-171.

2. Hoet AE, Nielsen PR, Hasoksuz M, et.al. Detection of bovine torovirus and other enteric pathogens in feces from diarrhea cases in cattle. *Journal of veterinary diagnostic investigation*. 2003; 5(3):205-212.

Books

1. Ettinger SJ, Feldman EC. The Gastrointestinal System (Section X) In: Ettinger SJ, Feldman EC, eds. Textbook of Veterinary Internal Medicine. Philadelphia, PA: W.B. Saunders Company, 1995; 1206-1207.

A Note on Using the Internet

Most students make use of sources discovered by Web search strategies. It is particularly important that students recognize three points regarding such sources. First, the “unfiltered” character of much of this information means that it needs to be evaluated extremely carefully. Second, most topics will require some resources not readily available on the Internet. Third, simply listing an Internet address is not an adequate citation. Any information must be identified so that it is unambiguously clear who produced it, what it is, and when the student accessed it. It should be obvious that the technical possibility of “cutting and pasting” from the Internet does not lessen the expectation of complete citation of sources and avoidance of plagiarism.

Guidelines concerning appropriate citation are available both in print and at several Internet sites. The Columbia University Press web site includes excerpts and general examples from a particularly useful source:

Columbia University Press. “Columbia Guide to Online Style.” Excerpted and adapted from Janice R. Walker and Todd Taylor, *The Columbia Guide to Online Style* (Columbia University Press, 1998). http://www.columbia.edu/cu/cup/cgos/ (27 September 2004).

10. A bound, printed copy and an electronic copy of the completed final version of the CP manuscript, approved by the academic advisor, must be provided to the MPH-VPH Director. An electronic copy must also be provided to the Office of Academic Programs & Student Services by the corresponding deadlines.

GRADUATION REQUIREMENTS SUMMARY

IN ORDER TO GRADUATE, YOU MUST:

Step 1. Register for a minimum of 3 graduate credit hours of VETPREV 7998 in the semester in which you intend to defend and graduate.

Step 2. Meet with the program coordinator and complete the **Authorization to Graduate Form**. You must complete this before submitting an application to graduate online (Step 3).

Step 3. Complete an ***Application to Graduate*** form (available online: https://gradforms.osu.edu/) This must be completed no later than **<u>the 10th Friday of the semester previous to graduation</u>**, and **<u>is valid for the semester indicated in the form only</u>**. Submitting this application indicates that you expect to complete all degree requirements that semester. If you do not, you will need to complete a new *Application to Graduate*.

Step 4. Meet the requirements noted in the ***Graduate School Handbook*** :

Responsibility II.5.13.2*. . . the student:*

1. *must have earned a cumulative point-hour ratio of at least 3.0 for all graduate credit hours taken at this university (ref.II.4.1)*
2. *must have fulfilled all additional requirements published by the Graduate Studies Committee [essentially, the core and elective courses required for the degree]*
3. *must have final grades for all courses received in the University Registrar's Office by the deadline published*
4. *must have fulfilled all other requirements by the deadlines established by the Graduate School*

End of Semester II.5.13.3

A student who does not meet published graduation deadlines but who does complete all degree requirements by the last business day prior to the first day of classes for the following semester may graduate the following semester without registering or paying fees.

The Graduate School graduation deadlines for each semester are available from the Graduate School https://gradsch.osu.edu/graduation-calendar.

Step 5. A ***Master's Examination Report*** will automatically be provided to your Faculty Advisor after your *Application to Graduate* has been submitted to the Graduate School. The *Master's Examination* for the MPH-VPH is the defense of your culminating project. In response to any direction from your culminating project committee, you must revise your document until the committee finds it satisfactory; while making sure that the Graduate School deadlines are met. Upon successful completion of your culminating project, your committee will electronically approve the Master's Exam Report. Follow the instructions provided above in the section "project Timeline requirements", point 3 and 4 (page 5), in regards to the Master's Examination Report.

Plan ahead, give yourself plenty of time, and make sure you are aware of all the deadlines. These are not negotiable!

INTEGRATIVE WRITING OR SERVICE PROJECT

The integrative writing or service project for the MPH specialization in Veterinary Public Health is an opportunity to provide a solution to a VPH issue or for intensive study of a topic, which is usually in the form of design and implementation of interventions, program planning and implementation, evaluation of programs, delivery of services, policy analysis or development, risk communication campaigns, or comprehensive case analysis, among others.

Project types:

There are several forms of the integrative writing project. The adviser will discuss individual expectations with the student, but these general descriptions about some integrative writing project possibilities may be helpful (this is not an exhaustive list of all possibilities):

- *Comprehensive Case Study*
  The student may write an original case study of a scope to permit integrative use of skills gained in the curriculum. The adviser will establish the format and expectations, particularly the concern for scope and opportunity for integration. A typical comprehensive case study would require analyzing a real situation, identifying relevant VPH issues, and applying appropriate methods to arrive at recommendations. A typical case study might be a critical, comprehensive review of a specific veterinary public health issue: i.e. "Q Fever in the Community: A Tabletop Outbreak Exercise".

- *Program Planning and Implementation*
  This option provides students with an opportunity to take a principal role in designing or developing a veterinary public health project for a community organization or agency. This option focuses on the planning, implementation, analysis/evaluation, and/or impact of a veterinary

public health project or program. A typical program planning project might be designing animal and/or human health programs related to veterinary public health topics: i.e. "Emergency Response Plans for the Ohio Animal Disease Diagnostic Laboratory".

- *Policy Analysis*
  This sort of project concentrates on critical review of an actual or proposed policy intervention (which may include a proposal of the student's own design). The methods of inquiry may include traditional data analysis, but should also demonstrate an ability to undertake qualitative analysis. This will involve critical reading, and may include key informant interviews and other sources. A typical policy analysis might be a review of proposed legislation or administrative rule: i.e. "Survery of Ohio County Dog Wardens with a Focus on the Implementation of Ohio House Bill 14."

- *Program Evaluation/Assessment*
  This option provides students with an opportunity to take a principal role in planning and pursuing a program assessment or evaluation. This option involves an assessment for a community, agency, organization or one of their programs or activities. A typical assessment might be reviewing the knowledge and/or handling of veterinary public health topics in a specific professional or population group. A common program evaluation will involve the analysis and assessment of an activity performed by a local, state or federal organization or company. The evaluated program has to have an important VPH component: i.e. "Competencies and Future Direction of Veterinary Public Health and Preventive Medicine: Assessment of the ACVPM".

When preparing a service-based culminating project, the student should follow the format below. Due to the variety of project types, the student may alter this format to pertain to their project with the approval of their Faculty Advisor.

<u>Sections to be included in an integrative writing a service culminating project:</u>

1. Cover Page (Appendix C)

2. Abstract/Executive Summary
An abstract is a brief summary of approximately 250-500 words. The major components are: Main Problem, Objective(s) and Purpose, Project Development/Approach, Product Description, and Discussion. An executive summary is an expanded version of the abstract and is typically one to two pages in length. Your advisor must make the decision on which one is appropriate according to your work.

3. Table of Contents
The table of contents lists all the major topical areas of the document with the corresponding page numbers.

Note: If numerous tables and figures are to be included then a **List of Tables** and/or a **List of Figures** should also be included.

4. Introduction

The introduction has three major elements or subsections: preamble, comprehensive literature review, and goals, objectives, and purpose.

Preamble: This subsection should state the basic rationale for the project (the main VPH problem to be addressed with this CP), what the student proposes to do (objectives), and why it is important (what impact is expected).

Comprehensive Literature Review: Place the project in the context of what is already known about the topic by reviewing relevant research and official sources of information. A literature review is a synthesis of what researchers/scholars have written about a topic organized according to a **guiding concept**. The purpose is not to list as many articles as possible, but rather to demonstrate the student's ability to recognize relevant information, to synthesize the information and evaluate it according to the main point that the student has identified for his/her project. The literature review should set the proposed project in context, provide background on the problem to which the student is responding and the approach he/she is taking, and discuss any gaps in the literature that the student has identified. Remember to define specific terms that will be used in the text of the report and remember to "tell a story".

Goals, Objectives, and Purpose: The project goals and objectives define the scope and the direction of the project. Goals are broad timeless statements that include all aspects of a program. Objectives outline in measurable terms the specific outcomes or products of the student's work. For example, objectives of an intervention program might be specific changes that will occur in the target population in a designated time frame as a result of the student's project. Finally, the student needs to describe what would be the expected impact or main purpose accomplished if the project is successful.

5. Project Development

Agency/Organization Description. This section presents the agency/organization on whose behalf the project is proposed or been developed. It should include a graphic presentation of the organizational structure and a discussion of how the project fits in with their mission and other programs of the agency/organization. If relevant, this section may include historical information or discussion of interorganizational relationships.

Theoretical/Conceptual Framework. This section will vary depending on the type of integrative writing project the student chooses to do. In general, the student needs to describe the behavioral or risk communication model they are using and why it applies to their project.

Project development. In this section it should be described the approach used to address the project questions or reach the proposed goals and objectives. Examples of what this section may include are a discussion of the project's target population (if applies), information on search strategies and databases used, potential data collection methods used (i.e. surveys, interviews), description of the design and development process of each one of the products or "deliverables" (including the review and approval process), description of any data analysis and evaluation process performed, etc. A project schedule should be included as an appendix, describing step-by-step the activities carried out to develop the project; identifying any "deliverables" obtained in every step. In few words, this section should describe how the project was developed in a way that any future student could follow these steps to be able to successfully repeat such CP.

Budget (depending on CP). Provide a narrative description and justification of the resources required for the execution of the project, including both personnel and other resources. Construct a simple budget showing the resources by category with expected expenditures; if the project requires more than one year, show the division of expenditures by period.

6. Product(s) Description and Discussion

In this section the final product(s) obtained should be described in detail and inserted as an appendix. Explain to the reader the different sections/components of the product(s) obtained and the logic or reasoning behind them. The student should also describe how this product will be delivered and used (or implemented) by the agency/organization, and the potential impact/importance this will have in the target population. Depending on the project, the product obtained could be compared with similar work already published or developed, highlighting the new developments or relevance of the current student's work. Limitations of the product should also be presented in this section, as well as recommendations and future projects. Additionally, the Public Health impact of the work done must be discussed in detail in this section. Finally, a closing paragraph or conclusion should be added to close this section.

7. Acknowledgement

Include acknowledgements to anyone who helps with the project along the way (*i.e.* peers/coworkers, professors, mentors, family, organizations, companies, etc.).

8. References

All literature and personal communications cited in the proposal must be listed in the reference section. References should follow a standard format approved by the advisor.

9. Appendices

The first appendix (or appendices) must be the product(s) produced by the student as well as the project schedule. Also anything not included in the text of the report that is important for understanding the project should be attached as an appendix. All appendices must have references within the text of the project report and must be included as part of the table of contents.

GRANT PROPOSAL

Many public health professionals have occasion to seek funding for design and implementation of interventions, evaluation of programs, delivery of services, or research. For that reason, one of the possible culminating experience project options for students in the MPH-VPH Program is the preparation of a grant proposal.

In order to be appropriate for this purpose, a grant proposal should be more than a simple “boilerplate” request for funds to continue operations of an existing program. At a minimum, the proposal should require some basic elements, including design of a program, intervention, evaluation, or service; a justification of the proposed approach based on a careful **literature review and/or other evidence** (analysis of preliminary data); and a budget with appropriate justification.

It is expected that the grant proposal be “real” in the sense that the student has a specific target funding source, whether he/she actually submits the proposal for review by the sponsor or not, and an agency or organization under whose auspices the work described in the grant proposal would be conducted. As part of the proposal for the project the student is required to provide a copy of the Request for Proposals (RFP) to which he/she is responding, or other evidence of the priorities and expectations of the target sponsor. The choice of funding source is up to the advisor and the student, but typical choices would include federal and state agencies (CDC, NIH, ODH, USDA, ODA, etc.), national foundations (Robert Wood Johnson, Pew, Kellogg, Melinda & Bill Gates Foundation, etc.), other non-profit organizations (American Cancer Society, Red Cross, CVM, Farmers’ Association, etc.), or various local foundations and organizations (Columbus Foundation, Columbus Medical Association Foundation, Osteopathic Heritage Foundation, etc.). Remember that the Faculty Advisor must approve the topic for the project. In addition, it is strongly advised that the student update their committee members on a regular basis, to avoid any unwelcome surprises.

The student should follow the format and requirements established by the sponsor agency or organization in their Request for Proposals. The final grant produced must be included as an Appendix. If this format does not include or follow the structure provided below, then the student should add such sections as part of their culminating project.

Sections to be included in a Grant Proposal Culminating Project:

1. Cover Page (Appendix C)

2. Abstract/Executive Summary

An abstract is a brief summary of approximately 250-500 words. The major components are: Main Problem to be addressed by the Grant, Objective(s) and Purpose, Grant Development, Expected

Results, and Discussion. An executive summary is an expanded version of the abstract and is typically one to two pages in length. Your advisor must make the decision on which one is appropriate according to your work.

3. Table of Contents

The table of contents lists all the major topical areas of the document with the corresponding page numbers.

Note: If numerous tables and figures are to be included then a **List of Tables** and/or a **List of Figures** should also be included.

4. Introduction

The introduction has three major elements or subsections: preamble, comprehensive literature review, and goals, objectives, and purpose.

Preamble: This subsection should state the basic rationale for the project (the main VPH problem to be addressed with this CP), what the student proposes to do (objectives), and why it is important (what impact is expected).

Comprehensive Literature Review. Place the project in the context of what is already known about the topic by reviewing relevant research and official sources of information. A literature review is a synthesis of what researchers/scholars have written about a topic organized according to a guiding concept. The purpose is not to list as many articles as possible, but rather to demonstrate the student's ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that the student has identified for his/her project. The literature review should set the proposed project in context, provide background on the problem to which the student is responding and the approach he/she is taking, and discuss any gaps in the literature that the student has identified. Remember to define specific terms that will be used in the text of the report and remember to "tell a story".

Goals, Objectives, and Purpose: The project goals and objectives define the scope and the direction of the project. Goals are broad timeless statements that include all aspects of a program. Objectives outline in measurable terms the specific outcomes or products of the student's work. Finally, the student needs to describe what would be the expected impact or main purpose accomplished if the project is successful.

5. Grant Development

Agency/Organization Description. In this section the student should described the agency/organization to which he/she is submitting the grant proposal. It should include a graphic presentation of the organizational structure and a discussion of how the project fits in with mission and other programs of that agency/organization. The student should also provide a short description of the RFP he/she are pursuing, highlighting why such RFP is the best match for his/her grant.

Grant development. In this section it should be described all the steps taken to develop the grant proposal from conception through the review process and final presentation. It should also include the search methodology used to identify publications to be included in the literature review and other sections of the grant.

Pilot data or results. Describe here any materials and methodology followed to obtained preliminary data to be used in the grant application. Also describe here all the data bases used as well as any analysis or evaluation performed of such data to obtained preliminary results to support the grant. In few words, this section should describe how the whole grant proposal was developed in a way that any future student could follow these steps to be able to successfully repeat such CP.

6. Grant Description and Discussion

In this section the final grant should be described and inserted as an appendix. Explain to the reader the different sections/components of the grant and the logic or reasoning behind them (remember that the grant always has limited space, so you can use this section to explain in detail the experimental design or methodology to be followed in case that the grant is successful and obtain the funding). The student should also **describe the expected results** to be obtained if the grant is fully executed, as well as the potential impact/importance this results(s) will have in the target population. Depending on the grant, the student should compare with similar work already published or developed, highlighting the new developments or relevance of the current student's idea (what is the innovation of this project?). Limitations of the product should also be presented in this section, as well as recommendations and next steps. Additionally, the Public Health significance or impact that this grant will have must be discussed in detail here. Finally, a closing paragraph or conclusion should be added to close this section.

7. Acknowledgement

Include acknowledgements to anyone who helps with the project along the way (*i.e.* peers/coworkers, professors, mentors, family, organizations, companies, etc.).

8. References

All literature and personal communications cited in the proposal must be listed in the reference section. References should follow a standard format requested from the agency/organization.

9. Appendices

The first appendix must be the grant produced as well as any Institution Review Board (IRB) and/or the Institutional Animal Care and Use Committee (IACUC) application. The IRB and/or IACUC should only be included as appendices <u>if they were prepared or amended by the student</u>. Finally, anything not included in the text of the manuscript that is important for understanding the grant should be attached as an appendix. All appendices must have references within the text of the project report and must be included as part of the table of contents.

APPLIED RESEARCH PROJECT

The MPH-VPH program permits general applied research projects in order to provide students with an opportunity to pursue an area of interest through their own research. An applied research project ordinarily includes data analysis of some sort in order to permit hypothesis testing or evaluation. Therefore, it is expected that most applied research projects will be of one of two types: (1) investigation of a research question expressed in traditional hypothesis form, or (2) evaluation of a program, diagnostic technique, treatment, intervention, or retrospective data analysis, among others. Some have described this sort of research project as a "mini-thesis." It is correct that some research projects approved for this purpose could probably also function as a master's thesis. However, the expectations of scale and completeness are less than that of the thesis (no peer-review publication is expected), perhaps at the level that one might use for a "pilot study" or generation of preliminary data. Nevertheless, the student is expected to use appropriate scientific research methods and provide science-based interpretation suitable for the approach taken.

The applied research project might be conceptualized as closer to the research activities carried out in the field of practice rather than those done in academic settings.

As with the grant proposal option, the student will need to discuss potential topics with the advisor and agree on both the topic and the appropriate credit hours. Because the applied research project need not be a response to a specific sponsor, the student is not required to identify an RFP or target funding source; however, if he/she has any interest in expanding the scope of their research that might be a useful step.

The details of the final report for this type of project are provided below. The sections listed should be included in most cases; however, modification may be appropriate for particular topics. In such cases, the student should provide some rationale for departure from the typical structure and have the adviser's approval.

Sections to be included in an Applied Research Culminating Project:

1. Cover Page (Appendix C)

2. Abstract

An abstract is a brief summary of approximately 250-500 words. The major components are: Main Problem addressed by the Applied Research, Objective(s) and Purpose, Materials and Methods used, Results obtained, and Discussion/Conclusion(s)/Recommendation(s).

3. Table of Contents

The table of contents lists all the major topical areas of the document with the corresponding page numbers.

Note: If numerous tables and figures are to be included then a **List of Tables** and/or a **List of Figures** should also be included.

4. Introduction

The introduction has three major elements or subsections: preamble, comprehensive literature review, and goals, objectives, and purpose.

Preamble: This subsection should state the basic rationale for the project (the main VPH problem to be addressed with this CP), what the student proposes to do (objectives), and why it is important (what impact is expected).

Comprehensive Literature Review. A literature review is a synthesis of what researchers/scholars have written about the main topic in which the research is focused, organized according to a guiding concept. The purpose is not to list as many articles as possible, but rather to demonstrate the student's ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that the student has identified for his/her project. The literature review should include relevant information to the main topic of the applied research providing background on the problem and discussing any gaps in the literature that the student has identified. Remember to define specific terms that will be used in the text of the report and remember to "tell a story".

Goals, Objectives, *and Purpose:* The project goals and objectives define the scope and the direction of the research project. Goals are broad timeless statements that include all aspects of a program. Objectives outline in measurable terms the specific outcomes or products of the student's work. Finally, the student needs to describe what would be the expected impact or main purpose accomplished **if the research is successful.**

5. Materials and Methods

Agency/Organization Description. If relevant, describe the agency/organization in which the project took placed. This should include a graphic presentation of the organizational structure and a discussion of how the project relates to the mission and other programs of the agency/organization.

Materials and Methods. Describe what materials, methods, and procedures were applied to collect and analyze data using the scientific method. Each research project is different, so it is not possible to provide a unique list of subsections that should be here included. Therefore, consult your advisor to determine which subsections should go in the Material and Methods. In any case, this section should be very detail so future students and researchers could follow such methodology and obtain similar results.

Ethics. If human or animal subjects were present in the study, the student must address how they were treated. Please note that if human subjects or their private information are involved in any way in his/her research, they will need to have their proposal reviewed by the OSU Institutional Review Board before they begin any data collection. Similarly, if animal subjects are involved in any way in the student's research, he/she will need to have IACUC protocol approved. ***This is not optional, and failure to follow appropriate procedures could expose the student to legal liability and threaten his/her ability to use their work to meet degree requirements!***

6. Results

All the findings of the applied research should be presented in this section. Describe the results of the observations/experiments, as well as the results of data analyses performed, using a standard peer-review research publication format. All tables and figures should be referred to within the text. If a table or a figure is used from another source, there needs to be a reference citation. If possible, smaller tables and figures should be placed within the text; larger tables and figures may be included in an appendix.

7. Discussion, Conclusions and Recommendations

Discussion of the findings (interpretation of the data) as they relate to the project questions, goals, and objectives should be presented in this section. Implications and Public Health importance of the findings should be also included. Limitations and recommendations for use of the findings and for future research should also be presented in this section. Conclusions that refer to the objectives and hypothesis establish for the student's research should be included and discussed as a closing paragraph.

8. Acknowledgement

Include acknowledgements to anyone who helps with the project along the way (*i.e.* peers/coworkers, professors, mentors, family, organization, institution, etc.).

9. References

All literature and personal communications cited in the manuscript must be listed in the reference section. References should follow a standard citation format, ideally that used by the Journal of the American Veterinary Medicine Association (JAVMA). The student can also choose the format of the peer-reviewed publication where will it will be submitted or published.

10. Appendices

Anything not included in the text of the project report that is important for the understanding of the design, implementation, or conclusions of the project should be attached as an appendix. For example: instruments, consent forms, timeline, surveys, etc. All appendices must have references within the text and must be included as part of the table of contents.

THESIS OPTION

Students choosing the thesis option are usually planning to pursue a career in research and/or academia. Students will use skills in research design and data analysis. Usually, completion of a thesis option will entail working with original data produced by the student, and the expectation is to produce a scientific peer-review publication. Students are expected to generate and analyze data specifically collected for the thesis option or analyze a very comprehensive, previously existing, data set.

The Graduate School has additional requirements for a Master's Thesis option and some different forms are required. These requirements can be found in the Graduate Student Handbook: https://gradsch.osu.edu/handbook/all.

In addition, the Graduate School has very specific requirements in regards to the thesis formatting that the student will have to comply with. Please check such requirements on the Graduate School website: https://gradsch.osu.edu/completing-your-degree/dissertations-theses/format-review-and-submission In any case, a thesis is typically (but not exclusively) organized as follows:

- Cover/Title Page
· Copyright
· Abstract
- Dedication (optional)
- Acknowledgments (optional)
- Vita
· Table of Contents
· List of Tables (if applicable)
· List of Figures, Illustrations, etc. (if applicable)
- Chapter 1 Introduction
- Chapter 2 Literature Review
- Chapter 3 Material and Methods
- Chapter 4 Results
- Chapter 5 Discussion, Conclusions and Recommendations
- References
· Appendices (if applicable)

The sections mention above should also follow the guidelines listed below:

1. Cover Page (Appendix C)

2. Abstract

An abstract is a brief summary of approximately 250-500 words. The major components are: Main Problem addressed by the Research, Objective(s) and Purpose, Materials and Methods used, Results obtained, and Discussion/Conclusion(s)/Recommendation(s).

3. Acknowledgement

Include acknowledgements to anyone who helps with the project along the way (*i.e.* peers/coworkers, professors, mentors, family, etc.).

4. Table of Contents

The table of contents lists all the major sections and chapters of the document with the corresponding page numbers.

Note: If numerous tables and figures are to be included then a **List of Tables** and/or a **List of Figures** should also be included.

5. Introduction

The introduction has three major elements or subsections: preamble, comprehensive literature review, and goals, objectives, and purpose.

Preamble: This subsection should state the rationale for the research project (the main VPH problem that was addressed with this CP), as well as a general description about the research the student performed and why it is important. The hypotheses or problem statement should also be described in this section, including the objectives and goals for this research. In addition the introduction should also contain the following components:

Comprehensive Literature Review. A literature review is a synthesis of what researchers/scholars have written about the main topic in which the research is focused, organized according to a guiding concept. The purpose is not to list as many articles as possible, but rather to demonstrate the student's ability to recognize relevant information, to synthesize the information and evaluate it according to the guiding concept that he/she has identified for their project. The literature review should include relevant information to the main topic of the thesis, as well as to identify any gaps in the literature. Remember to define specific terms that will be used in the text of the student's report and remember to "tell a story".

Goals, Objectives, and Purpose. The project goals and objectives define the scope and the direction of the research project. Goals are broad timeless statements that include all aspects of a program. Objectives outline in measurable terms the specific outcomes or products of the student's work. Finally, the student needs to describe what would be the expected impact or main purpose accomplished if the project is successful.

6. Materials and Methods

Agency/Organization Description. If relevant, describe the agency/organization in which the project took placed. This should include a graphic presentation of the organizational structure and a discussion of how the project relates to the mission and other programs of the agency/organization.

Materials and Methods. Describe what materials, methods, and procedures were applied to collect and analyze data using the scientific method. Each research project is different, so it is not possible to provide a unique list of subsections that should be here included. Therefore, consult your advisor to determine which subsections should go in the Material and Methods. In any case, this section should be very detail so future students and researchers could follow such methodology and obtain similar results. *Ethics.* If human or animal subjects were present in the study, the student must address how they were treated. Please note that if human subjects or their private information are involved in any way in his/her research, they will need to have their proposal reviewed by the OSU Institutional Review Board before they begin any data collection. Similarly, if animal subjects are involved in any way in the student's research, he/she will need to have IACUC protocol approved. ***This is not optional, and failure to follow appropriate procedures could expose the student to legal liability and threaten his/her ability to use their work to meet degree requirements!***

7. Results

All the findings of the research should be presented in this section. Describe the results of the observations/experiments, as well as the results of data analyses performed, using a standard peer-review research publication format. All tables and figures should be referred to within the text. If a table or a figure is used from another source there needs to be a reference citation. If possible, smaller tables and figures should be placed within the text; larger tables and figures may be included in an appendix.

8. Discussion, Conclusions and Recommendations

Discussion of the findings (interpretation of the data) as they relate to the project questions, goals, and objectives should be presented in this section. Implications and importance of the findings should be also included. Limitations and recommendations for use of the findings and for future research should also be presented in this section. Finally, conclusions that refer to the objectives and hypothesis establish for the student's research should be included and discussed as a closing paragraph.

9. References

All literature and personal communications cited in the proposal must be listed in the reference section. References should follow a standard citation format as indicated previously in the applied research projects section.

10. Appendices

Anything not included in the text of the project report that is important for the understanding of the design, implementation, or conclusions of the project should be attached as an appendix. For example: instruments, consent forms, timeline, surveys, etc. All appendices must have references within the text and must be included as part of the table of contents.

Students choosing a thesis option should plan to present their work at a national meeting and submit it for publication in a scientific peer-reviewed journal.