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

2026 - 2027
GUIDELINES FOR
INTEGRATIVE LEARNING
EXPERIENCE

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GENERAL PROJECT GUIDELINES

The Integrative Learning Experience 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 Integrative Learning Experiences in the MPH-VPH Program, contact the Veterinary Public Health (VPH) director, or speak with their advisor. Although every Integrative Learning Experience will be different, there are some general guidelines that are relevant to every project.

1. Each student must choose an **Integrative Learning Experience (ILE)** 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 (CVM) approved by the VPH committee.

2. **All ILEs 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.

   - Please use the following ***Public Health Impact Checklist*** (See **Appendix A**) to verify that your ILE project and manuscript comply with this mandatory requirement.

3. **All ILEs must address a minimum of 3 foundational competencies set forth by the CPH and the VPH program.** Students are required to address one competency from each category (foundational public health and VPH specialization competency). A minimum of one additional competency is required from either category. For a full list of public health and VPH specialization competencies please refer to **Appendix B**.

4. If the student decides upon an ILE that is outside the Faculty Advisor's area of expertise, the student may identify an **Integrative Learning Experience Advisor (ILEA)** with the input of the Faculty Advisor. The student must obtain the ILEA's direct consent to serve on his/her project. The ILEA will work with the student and the Faculty Advisor to design and/ or develop the ILE.

5. **A minimum of two committee members are required to comprise the Integrative Learning Experience Committee.** They are the Main Faculty Advisor and a Second Reader. The Main Advisor is a **full-time Veterinary Preventive Medicine Department Faculty** with a joint or courtesy appointment and "M" or "P" Status with the College of Public Health (CPH). The Second Reader can be a full-time Faculty member from the Veterinary Preventive Medicine Department or the College of Public Health (CPH) with "M" or "P" Status with C V M o r CPH. Therefore, the student and his/her Main Faculty Advisor must choose a faculty member as a "Second Reader".

However, if the student has an ILEA or any other OSU faculty or professional (with "M" status from the Graduate School) directly involved in his/her ILE they could choose 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

If the student has an External Project Advisor, then such professional could be an *ad hoc* member of the committee, which still must have a minimum of two official committee members as indicated above.

6. 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 12-21.

   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 CPH.

   Students also have the option to complete a traditional research-based master's thesis as their ILE. 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; there are 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 advisors no later than the beginning of their second semester of enrollment to be sure they understand the requirements and timeline. It is expected that thesis work generates a peer-reviewed publication. Specific guidelines about this option can be seen on pages 22-24.

7. The Integrative Learning Experience 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 hour 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 advisor has agreed that it justifies the higher credit level.

8. The actual timing of registration for credit for the Integrative Learning Experience should be discussed with the Faculty Advisor, the MPH-VPH director, and the Office of Academic Programs & Student Services staff ***before the student registers***. The graduate school requires that students be enrolled in 3 ILE credits in the semester that they graduate.

9. After completion of the ILE, the student is required to present it to the student's Integrative Learning Experience Committee members at the final product presentation **or Integrative Learning Experience Oral Defense.** Students with two readers will have 60 minutes to defend; students with three readers will have 90 minutes to defend. 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).

   A Satisfactory/Unsatisfactory result on the Integrative Learning Experience 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. There is a curriculum guide which can help 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 Integrative Learning Experience 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 **Integrative Learning Experience 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 the CPH Master of Public Health Integrative Learning Experience timeline at https://cph.osu.edu/mph/integrative-learning 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 ILE defense and inform the VPH coordinator to advertise the defense at least 3 weeks in advance. Only by request of the advisor will the defense be "closed doors."

2. The student must provide the Committee members with a correctly formatted (refer to page 7) **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 advisor and he/she has approved it to be sent to the Committee.

3. Upon completion of the final oral defense meeting the student will complete the **VPH ILE Review Process**. This process involves the student making any necessary edits as noted by their committee, completing an **ILE Formatting Review** with the program coordinator, and having an **Exit Interview** with the VPH Director. A timeline of the VPH ILE Review Process can be found in **Appendix C.**

4. **After all the revisions to the manuscript from the Committee have been included in the final version (certified by the academic advisor),** the student must provide a PDF of the final ILE manuscript approved by the advisor. The student must also e-mail a PDF copy of the final ILE manuscript to the VPH director and the CPH 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 ILE manuscript. 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.

5. 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 ILE manuscript. 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. Most manuscripts, however, should be at least 35 pages, not including references, tables, figures, or appendices. The length and content will 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 printed/bound on white acid-free paper (8.5 x 11 inches), if requested.

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 (e.g., Abstract, Table of Contents, Introduction, Materials & Methods, Results, Conclusion, References) should be 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 included at the end of this document (Appendix D).

7. The sections of the manuscript will depend upon the nature of the project, as explained on the following pages. However, **every ILE manuscript must have a 1) title page, 2) an abstract or executive summary, 3) a table of contents (and a table of figures, 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-based 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. Upon advisor approval of the final manuscript, an appointment must be made with the VPH Program Coordinator to discuss formatting requirements.

11. An electronic copy (PDF) of the completed final, formatted version of the ILE manuscript, approved by the academic advisor and program coordinator, 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. Complete an ***Application to Graduate*** form (available online: https://gradforms.osu.edu/) This must be completed no later than the **last day of classes of the semester previous to graduation** and is **valid for the semester indicated in the form only**. 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 3. 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.

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

Step 4. 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 Integrative Learning Experience. In response to any direction from your ILE 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 Integrative Learning Experience, 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 regard to the Master's Examination Report.

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

POLICY FOR STUDENT USE OF ARTIFICIAL INTELLIGENCE

ARTIFICIAL INTELLIGENCE AND ACADEMIC INTEGRITY

All students have important obligations under the Code of Student Conduct to complete all academic and scholarly activities with fairness and honesty. Our students also have the responsibility to uphold the professional and ethical standards found in their respective academic honor codes. Specifically, students are not to use unauthorized assistance in the laboratory, on field work, in scholarship or on a course assignment unless such assistance has been authorized specifically by the course instructor. In addition, students are not to submit their work without acknowledging any word-for-word use and/or paraphrasing of writing, ideas or other work that is not your own. These requirements apply to all students undergraduate, graduate, and professional.

To maintain a culture of integrity and respect, generative artificial intelligence (AI) tools (e.g., ChatGPT, Gemini, Copilot) or any other automated assistance tools should not be used to generate or substantially modify or refine content in the completion of course assignments unless an instructor for a given course specifically authorizes their use. Some instructors may approve of using generative AI tools in the academic setting for specific goals. However, these tools should be used only with the explicit and clear permission of each individual instructor, and then only in the ways allowed by the instructor.

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 Advisor 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 Advisor 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: e.g., "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: e.g., "Emergency Response Plans for the Ohio Animal Disease Diagnostic Laboratory."

- *Policy Analysis*
  This project type concentrates on the 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 project 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: e.g., "Survey 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 must have an important VPH component: e.g., "Competencies and Future Direction of Veterinary Public Health and Preventive Medicine: Assessment of the American College of Veterinary Preventive Medicine."

When preparing a service-based ILE, 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.

Sections to be included in an integrative writing a service Integrative Learning Experience:

1. Cover Page (Appendix D)

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 ILE), 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. 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 the student's approach to address the project questions or reach the proposed goals and objectives should be described. Examples may include a discussion of the project's target population (if applicable), information on search strategies and databases used, potential data collection methods used (e.g., 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 performed to develop the project (identifying any "deliverables" obtained in every step). In essence, 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 ILE.

Budget (depending on ILE). 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 (e.g., peers/coworkers, professors, mentors, family, organizations, companies, etc.).

8. Footnotes

Footnotes are used when incorporating sources that were created outside of traditional publishing methods (ex. government agency webpages, non-profit organizations, etc.) Footnotes must be labeled with a superscript letter in order of appearance and formatted in one of two ways:

1. Footnotes placed at the bottom of the page containing the course. This is generally used when only a few footnotes are included in the entire manuscript.

2. For manuscripts with numerous footnotes should be listed immediately before the References section following the body text of the manuscript.

The project advisor can help to determine which footnote method is appropriate.

9. 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.

10. Appendices

The first appendix (or appendices) must be the product(s) produced by the student as well as the project schedule. Anything not included in the text of the report that is important for understanding the project should be included in the 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.

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 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 Integrative Learning Experience.

Sections to be included in a Grant Proposal Integrative Learning Experience:

1. Cover Page (Appendix D)

1. 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.

2. 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.

3. 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 ILE), 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 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.

4. 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 essence, 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 ILE.

5. 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.

6. Acknowledgement

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

7. Footnotes

Footnotes are used when incorporating sources that were created outside of traditional publishing methods (ex. government agency webpages, non-profit organizations, etc.) Footnotes must be labeled with a superscript letter in order of appearance and formatted in one of two ways:

3. Footnotes placed at the bottom of the page containing the course. This is generally used when only a few footnotes are included in the entire manuscript.

4. For manuscripts with numerous footnotes should be listed immediately before the References section following the body text of the manuscript.

The project advisor can help to determine which footnote method is appropriate.

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 Institutional Review Board (IRB) and/or 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 advisor's approval.

Sections to be included in an Applied Research Integrative Learning Experience:

1. Cover Page (Appendix D)

1. 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).

2. Table of Contents

The table of contents lists all the major topic 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.

3. 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 ILE), 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.**

4. 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!***

5. 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.

6. 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.

7. Acknowledgement

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

8. Footnotes

Footnotes are used when incorporating sources that were created outside of traditional publishing methods (ex. government agency webpages, non-profit organizations, etc.) Footnotes must be labeled with a superscript letter in order of appearance and formatted in one of two ways:

5. Footnotes placed at the bottom of the page containing the course. This is generally used when only a few footnotes are included in the entire manuscript.

6. For manuscripts with numerous footnotes should be listed immediately before the References section following the body text of the manuscript.

The project advisor can help to determine which footnote method is appropriate.

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 it will be submitted or published.

10. Appendices

Anything not included in the text of the project report that is important for understanding the design, implementation, or conclusions of the project should be attached as an appendix (e.g., instruments, consent forms, timeline, surveys). 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 regard to the thesis formatting with which the student will have to comply. Please check such requirements on the Graduate School website: https://gradsch.osu.edu/completing-your-degree/dissertations-theses/format-review-and-submission. In general, 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 mentioned above should also follow the guidelines listed below:

1. Cover Page (Appendix D)

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 (e.g., peers/coworkers, professors, mentors, family, etc.).

4. Table of Contents

The Table of Contents lists all 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 ILE), 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 "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 general, this

section should be very detailed 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 (Office of Responsible Research Practices) 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 an 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 (e.g., instruments, consent forms, timeline, surveys). 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 in collaboration with their Advisor.

APPENDIX A

Public Health Impact Checklist

THE OHIO STATE UNIVERSITY
COLLEGE OF VETERINARY MEDICINE



VETERINARY PUBLIC HEALTH INTEGRATED LEARNING EXPERIENCE PUBLIC HEALTH COMPLIANCE CHECKLIST

- ❑ Title SHOULD clearly indicate the Public Health component
- ❑ The Abstract MUST directly address the Public Health link
- ❑ The Introduction/Literature Review MUST include a subsection describing the Public Health relevancy/connection to the project
  - o This point should be presented in the seminar
- ❑ The Discussion section in the manuscript MUST have a full subsection dedicated to the Public Health IMPACT of the project
  - o This point should be presented in the seminar
- ❑ The conclusion paragraph MUST restate the link/relevance of the student's work to Public Health

APPENDIX B

MPH-VPH ILE Foundational Competencies: Public Health and VPH Specialization

MPH-VPH Foundational Competencies

Students must address a minimum of **three** foundational competencies in their ILE with at least one public health competency and one VPH specialization competency.

Public Health Competencies
1. Apply epidemiological methods to settings and situations in public health practice.
2. Select quantitative and qualitative data collection methods appropriate for a given public health context.
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming, and software, as appropriate.
4. Interpret results of data analysis for public health research, policy or practice.
5. Compare the organization, structure, and function of health care, public health, and regulatory systems across national and international settings.
6. Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and systemic levels.
7. Assess population needs, assets, and capacities that affect communities' health.
8. Apply awareness of cultural values and practices to the design, implementation, or critique of public health policies or programs.
9. Design a population-based policy, program, project, or intervention.
10. Explain basic principles and tools of budget and resource management.
11. Select methods to evaluate public health programs.
12. Discuss the policy-making process, including the roles of ethics and evidence.
13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes.
14. Advocate for political, social, or economic policies and programs that will improve health in diverse populations.
15. Evaluate policies for their impact on public health and health equity.
16. Apply leadership and/or management principles to address a relevant issue.
17. Apply negotiation and mediation skills to address organizational or community challenges.
18. Select communication strategies for different audiences and sectors.
19. Communicate audience-appropriate (i.e., non-academic, non-peer audience) public health content, both in writing and through oral presentation
20. Describe the importance of cultural competence in communicating public health content.
21. Integrate perspectives from other sectors and/or professions to promote and advance population health.
22. Apply a systems thinking tool to visually represent a public health issue in a format other than standard narrative.

VPH Specialization Competency
1. Recognize and describe the etiology and epidemiology (including main reservoirs and transmission pathways) of common zoonotic, foodborne and foreign animal infectious diseases (especially those classified as reportable, bioterrorism threats or have a major impact on public health and/or agriculture).
2. Identify approaches and programs utilized to prevent, control and/or eradicate zoonotic, foodborne and foreign animal diseases, including pre- and post-harvest interventions, and applicable agencies, regulations and laws governing such diseases.
3. Identify and describe major elements of emergency preparedness and response and outbreak investigation, including biosecurity and biocontainment of zoonotic and foodborne diseases. and natural disaster plans.
4. Recognize approaches for assessing and controlling environmental and biological agents and strategies for reducing risks to human and animal health, especially in agricultural settings.
5. Define the role of epidemiology in maintaining human and animal health; and identify strategies in the design and conduct of surveillance, monitoring and epidemiological studies that assess the prevalence and distribution of zoonotic and foodborne diseases.
6. Conduct comprehensive literature reviews of the scientific evidence related to a veterinary public health issue, concern, or intervention.

APPENDIX C

Timeline for Integrative Learning Experience Review Process

Timeline for Integrated Learning Experience (ILE) Review Process

Note: If the student does not have the 1st draft of the ILE ready or close to completion before the semester in which he/she is planning to graduate, the student needs to discuss with his/her advisor if it is still feasible to complete the ILE by the different deadlines.

First Draft

Turn in the ILE 1st complete draft to the academic advisor

Final Draft

Once the academic advisor has approved the Final Draft, the student can circulate the ILE to the committee members for review.
The committee will need at least two weeks two review the final draft of the ILE before your scheduled oral defense.

VPH Review

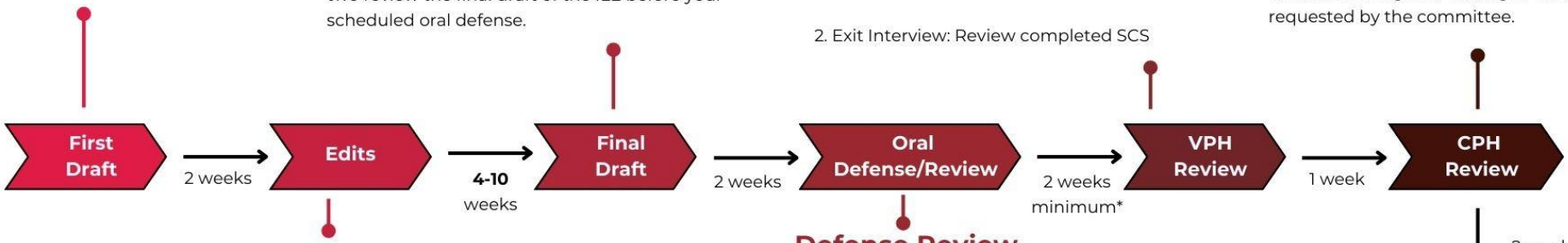
The VPH Review is completed in two steps: the formatting check with the program coordinator and the exit interview with the program director.

1. Formatting Check: Review overall document formatting and public health impact checklist

2. Exit Interview: Review completed SCS

CPH Review

Turn in paperwork at the College of Public Health (CPH) by the deadline established by the grad school for that semester.
Leave at least two weeks between the oral defense and the deadline to allow time to do minor changes or editing to the ILE as requested by the committee.



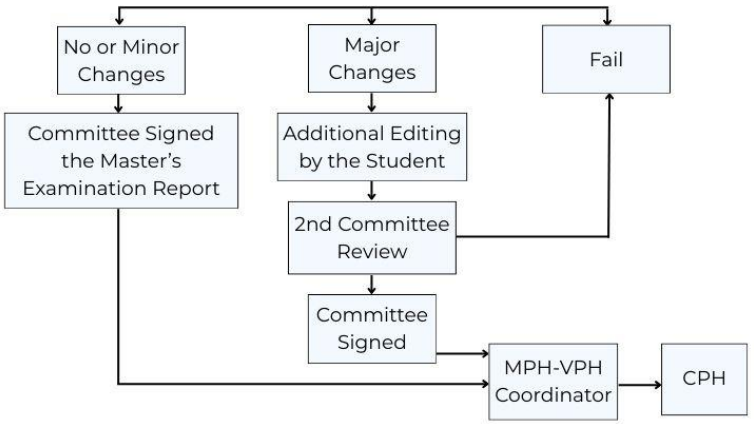
Modification and Editing

The student should allow for at least two weeks for his/her advisor to review **each** ILE draft and return the comments and/or criticism.
Then the student will spend additional time editing and modifying the ILE.

It is very possible to work on three to five drafts before the academic advisor approves the final draft that will be presented to the committee.

The number of drafts will depend on the quality of the ILE that the student provides to the advisor.

Defense Review



2 weeks

Grad School Review

Commencement

Total: 12-16 weeks

*More time required for major changes

APPENDIX D

Sample Title Page

Master of Public Health
Veterinary Public Health Specialization

Title

Student Name, degree(s)

Advisor Name, degree(s)
Committee Member Names (with degree(s))

Submitted in Partial Completion of Requirements for the Master of Public Health Degree at
The Ohio State University

Date of Oral Defense