INTRODUCTION

This document provides guidelines for the completion of the professional paper, a requirement for the MPH degree at East Carolina University, and summarizes the relationship between the two professional paper courses, MPH 6991 and MPH 6992. Together these two courses constitute the professional paper, also referred to as “pro paper.” Students should read and follow these guidelines carefully.
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Section I. Overview of the MPH Professional Paper

The professional paper constitutes the integrative learning experience for the MPH program, a culminating experience in which students demonstrate synthesis of foundational and concentration competencies.¹

To successfully accomplish their professional paper requirement, students will conduct a research project, which will include the following steps: review the literature regarding a practice-based or action-oriented public health or clinical question in their area of interest, design and plan a research project, complete an Institutional Review Board (IRB) application (if necessary), implement the project, write up the findings similar to a manuscript, and present the findings to the faculty and fellow students.

Research is a process by which we discover new knowledge, and it has different definitions. In the Code of Federal Regulations (45 CFR 46.102(d)) pertaining to the protection of human subjects, research is defined as: “A systematic investigation (i.e., the gathering and analysis of information) designed to develop or contribute to generalizable knowledge.”² A more broad definition of research is a “systematic investigation of a subject aimed at uncovering new information (discovering data) and/or interpreting relations among the subject’s parts (theorizing).”³ In a basic sense, research can be seen as the gathering of data or information for the development of new knowledge or understanding, but the research process must be systematic and follow a series of steps and protocol designed in advance. Students may choose from a variety of types of research for their professional paper project, including a descriptive study, an experimental or quasi-experimental study, an evaluation study, or a systematic literature review or white paper. Examples of appropriate types of professional papers and examples of titles of recently completed papers are listed in Appendix A.

The professional paper consists of two linked courses: MPH 6991 and MPH 6992. The goal of the 2 semester hour (s.h.) MPH 6991 Professional Paper I course is to develop a well-constructed proposal for a research project that can be completed the following semester in the 1 s.h. MPH 6992 Professional Paper II course. The project is conducted and the paper is written in MPH 6992. If appropriate, students are encouraged to structure their professional paper for publication in a peer-reviewed journal and/or for presentation at regional, state, or national public health conferences. All completed professional papers are retained by the MPH program and available to current students and the academic and practice community.

The MPH 6991 and 6992 courses have multiple sections, each of which is directed by a primary professor who is a member of the MPH program’s core faculty and provides primary guidance in developing the proposal, conducting the project, and writing the paper. The student may wish to

select another professor or practitioner for advice on methods and/or substantive expertise; this person would be a content advisor.

Pre-requisites for MPH 6991 are: MPH 6000, MPH 6002, MPH 6011, and one of the research methods courses (MPH 6020, MPH 6702, or MPH 6027). The pre-requisites for MPH 6992 are completion of MPH 6991 and all other core courses (MPH 6010, MPH 6013, MPH 6035, and BIOS 7021).

Section II. Preparing for MPH 6991/2

A. Choosing a topic
Ideally, students should identify a topic for their professional paper prior to enrolling in MPH 6991. The range of topics students choose reflects both diversity of the field of public health as well as the diversity of MPH students and their interests. The choice of topic may be a curiosity that the student brought to the program or one elicited by coursework or the internship experience. It may be a topic that the student developed into a research proposal in the Research Methods course. It must, however, be feasible to address in no more than two semesters and within the student’s means. The topic should be interesting and novel to the student. The method for examining the topic must be ethical. Any research involving human subjects must be approved by the University and Medical Center Institutional Review Board. Last, but not least, the topic must be relevant to public health - something that can be applied and lead to or inform action to improve the health of the public. The acronym, FINER, standing for the italicized words above, can guide selection of topic.

In addition to a range of possible topics, there is also a range of project types and various methods that can be used to investigate a selected topic. The methods might include the collection of original data or the use of data that has already been collected; data collection and analysis may involve quantitative or qualitative methods, or a mixture of both. The student should consider what skills they would like to learn or improve and try to incorporate these skills into their pro paper experience.

For students who do not know what topic they would like to address, there is a list of possible topics generated by faculty based on perceived data needs and their own interests and areas of expertise. This list is available on the Professional Paper page of the Department of Public Health (DPH) website at: http://www.ecu.edu/cs-dhs/publichealth/professionalPaper.cfm.

Students are encouraged to link their internship and their professional paper experiences. The internship (MPH 6903 or MPH 6904/6905) provides an ideal setting to develop professional paper objectives and methods, including opportunity for collection of data. However, the internship and the professional paper must involve different projects. This may require planning both the internship and a professional paper project prior to starting the internship. Students should discuss this possibility with their academic advisor.
B. Primary professor and content advisor

Students are encouraged to talk with various faculty about possible topics and to choose one faculty member with whom they would like to work. Students should then ask this faculty member if they would be willing to serve as their primary professor.

At their initial meeting prior to registration for MPH 6991, the student and the primary professor should complete the ILE Agreement and Concept Form; this will involve describing the concept of and possible data sources for the student’s professional paper, selecting competencies for the student’s professional paper experience, and reviewing and signing the Professional Paper Primary Professor/Student Agreement. (See Appendix B). The primary professor should then obtain the department chair’s signature on the form. The student and the primary professor should keep copies of this signed form and the original should be submitted to the student services coordinator.

The primary professor will work with students to establish dates and deadlines for the major sections of the proposal in MPH 6991 and the paper in MPH 6992 based on the academic calendar. This will allow the primary professor to review student progress and provide feedback. The student must set up meetings with the primary professor for specific guidance. The primary professor is responsible for the student’s products aligning with department requirements.

Although a rare occurrence, it is possible for students to switch their primary professor during the professional paper process (MPH 6991/2). The student should consult with their academic advisor and the student services coordinator. There is a form that the student and their academic advisor and primary professor need to complete and then submit to the student services coordinator.

The student may also identify a content advisor, separate from their primary professor, who will serve to provide expertise on the substantive topic area. The content advisor is optional and not required. The content advisor may work outside the MPH program, including internship preceptors.

If the student choses to have a content advisor, the student, the primary professor and the content advisor should meet early in the MPH 6991 semester to agree on a plan for the student and to define the roles and responsibilities of each person. The results of this meeting should be put in writing (e.g. an E-mail message).

C. Enrollment into MPH 6991

After meeting with their primary professor and completing the ILE Agreement and Concept Form, students will register themselves for the section of MPH 6991 that their primary professor is teaching. Students will need to know the section number of MPH 6991 their chosen primary professor is teaching in order to register.
Section III. MPH 6991 Details

A. Course objectives and competencies
The overall goal of MPH 6991 is to produce a well-constructed proposal for a research project that can be completed the following semester in MPH 6992.

Starting with Fall 2018, MPH 6991 students in consultation with their primary professor will select at least four foundational competencies and one concentration competency to address during their professional paper experience (MPH 6991/2). The selected competencies should be appropriate to their professional paper project and align with their educational and professional goals. Each student’s selected competencies should be documented in the ILE Agreement and Concept form.

The selected competencies for MPH 6991/2 will be assessed by the primary professor through review and critique of the professional paper proposal, paper, and poster. Meeting of competencies will be reported by exception during the professional paper process. That is, if the student is not making good progress towards meeting one or more competency, then the professional paper primary professor will report this to the chair of the department, the academic advisor, the student services coordinator, and the student. The primary professor will then work with the student to establish a remediation plan.

The student will create a table that lists their selected competencies along with how they met these competencies during MPH 6991/2. This “Competency Achievement” table should be included in their professional paper, placed after the Conclusions section, and be available as a hand-out at the professional paper poster session. At the end of MPH 6992, the primary professor will attest that the student has met all of their selected competencies in the completion memo to the registrar.

B. Course organization
MPH 6991, Professional Paper I, is a 2 semester hour required course in which the student writes a proposal for their professional paper project. This course involves the following steps:
1. Confirming and clarifying a proposal topic and title,
2. Defining the research question, and goal and objectives,
3. Designing a conceptual model or framework,
4. Conducting a literature review,
5. Planning the methods to be used (e.g., qualitative or quantitative) and the protocol,
6. Obtaining IRB approval (if necessary),
7. Preparing a timeline,
8. Outlining expectations for MPH 6992.

Each primary professor will provide a syllabus that includes the date on which the proposal is due and other mile stones. By the second week of the semester, the student and the primary professor together should have developed a schedule for the student to follow during the semester in order to complete the proposal. It is the student’s responsibility to report deviations
from the timeline to the primary professor. The primary professor will meet with the student at least four times during the semester to provide guidance.

C. MPH 6991 grading
The “S” & “U” Grading System is used. Upon successful completion of 6991, the primary professor will post either an “S” or “U” in Banner.

- S (Satisfactory progress) A special grade reserved for thesis and dissertation research, internships, practica, and similar courses. The grades in these courses are not included in meeting the cumulative grade point average of 3.0 required for graduation.
- U (Unsatisfactory progress) A special grade reserved for thesis and dissertation research, internships, practica, and similar courses. The grades in these courses are not included in meeting the cumulative grade point average of 3.0 required for graduation.

D. Structure of the professional paper proposal (MPH 6991)
The form and style of the proposal may vary depending on the research project being proposed and should be negotiated with the student’s primary professor.

It is recommended that students choose either the APA or the AMA citation style and use it consistently throughout their professional paper proposal. Other citation styles are also acceptable if the student’s primary professor has a citation preference, or the student would like to ultimately submit their paper to a specific journal which requires another citation style. For help with citation styles, see the ECU Libraries Citation Guide at: http://libguides.ecu.edu/c.php?g=17467&p=97552. Students are also encouraged to use a reference or citation manager throughout their professional paper process. RefWorks is the citation manager supported by ECU; information about RefWorks can be found on the Laupus Library webpage at https://hsl.ecu.edu/. Students can also ask for assistance from the librarians at Laupus Library.

Based on the topic, there may be variation in the components of each proposal, but there are some components that the majority of public health research proposals include. The following provides a structural guideline to the proposal for a research project.

Cover page: Includes the title of the proposal, student’s name, primary professor and content advisor, date and the semester. The title answers the question, “What you are going to do?” including person, place, and time. It should be clear and concise. A reader should understand the aim, the target population, and the dependent variable(s) if hypotheses are investigated (80-100 characters).

Introduction: “What is the problem and why is it important?” This section gives a brief description of the problem. Students should state the importance of the problem from a public health perspective and justify their decision for proposing this study. (1 page)

Background: “What has been reported on this problem?” This section supports the introduction by summarizing the scientific background relevant to the problem. The background will also show how the student’s investigation addresses the research needs in the area. Students will select scientific literature from various journals, textbooks, and other published material to support their proposal. (2 pages maximum)
**Goal and objectives:** “What are you planning to investigate and accomplish?” The goal states the broader long-term goal for the project. To reach this goal, the student needs to identify their measurable objectives. Just one goal and no more than three objectives are recommended. As part of the goal and objectives, the student should develop a research question, or a specific purpose for the project. (1 page maximum)

**Conceptual model:** Every proposal must have one of the following: conceptual model, conceptual framework, or logic model for describing the problem or process and/or grounding the inquiry. This conceptual model is a visual display of the context of your project. Students should include an explanation of the model in text accompanying the model.

**Methods:** “What will be explored, described, or explained? How are you going to implement the proposal in MPH 6992?” This section is the detailed explanation of the activities that will be undertaken to obtain results or findings. The process should be explained as if giving detailed instructions to a reader interested in duplicating the project. Depending on the type of study or project that is being proposed, the subsections in the methods section may vary. Below are subsections that are often included. (4 pages maximum).

**Target population:** The target population is the group of people (or things) about whom the researcher is interested in making conclusions. The target population should be defined in clear terms addressing time, geographic location, and demographic indicators.

**Study population:** Select a representative sample or group from the target population and explain: What inclusion and exclusion criteria will be used to select the study population? How will participants be recruited? What is the unit of analysis? How will the sample size be determined? What sampling method will be used? If a comparison group is included, similarly describe criteria for eligibility and inclusion in the sample.

**Study design:** Describe the study design.

**Data collection:** “How are you going to collect data?” Explain the sources of data and details of the data collection methodology, e.g., use of data that has already been collected, original data collection, survey research, in-depth interviews, focus group discussions, biometric measurements, data abstraction forms, log books, etc. Describe design of a data collection instrument, and if relevant, include how the instrument will be tested and how the data will be collected and managed.

**Variables:** Define and explain the variables that will be analyzed to answer the research question, or the main variables that will be used in the project. Each variable must be clearly defined and operationalized in terms of definitions and coding. Depending on the study design, goal and objectives, students may need to develop a dependent and independent variable list for the study.

**Data analysis:** Develop an analysis plan. Describe development of a data dictionary or codebook and operationalization of variables. Analysis of data requires knowledge of biostatistical tests and how to analyze data. What statistical methods and techniques will be
employed; descriptive or inferential? Student should discuss the process of data analysis with their primary professor to determine the best approach. A brief description of the planned data analysis including the software packages (e.g., SAS, SPSS) and the analytical techniques should be included.

For qualitative research questions, data analysis will include selecting major themes/topics to explore, a plan for coding each interview (double-coding using independent coders), and qualitative data analysis package to be used (NVivo, AtlasTI). This section would also include an outline of inductive versus deductive analysis strategy.

**Expected results/outcomes:** “What are the anticipated outcomes of the project?” This section summarizes the end products of the study, how public health practice might be informed and improved. Based on the analysis plan, develop drafts of tables or figures you are likely to use in the results section, e.g., table shells with column and row headings, title of figures, and x- and y-axis of graphs. (See Appendix C for examples of table shells.) For qualitative research, include a table of potential themes/topics and salient quotes to illustrate each theme. (1/2 page)

**Limitations and strengths:** “What are the strengths and weaknesses of the study?” State the limitations and strengths of the study plan and briefly explain how limitations may affect the study results.

**Timeline:** “What is your schedule?” Each proposed activity should be planned chronologically (weekly or monthly) with critical events identified. The MPH 6991 proposal should include an individualized timeline of activities that the student proposes follow in MPH 6992 in order to complete their professional paper.

**Human subjects:** The final proposal should include relevant IRB-related information, for example whether human subjects research is being proposed, whether an IRB application was submitted, and the ECU University and Medical Center Institutional Review Board (UMCIRB) approval number or letter granting exempt status. (See section E below for additional information on the IRB process.)

**References:** The source of all literature cited in the proposal should be referenced in a format appropriate for submission to a professional journal, e.g., MLA, APA or biomedical format, depending on the contextual discipline in which the work is done. Advice of the primary professor should be sought. Other literature, articles, book chapters, books, and unpublished material consulted but not cited may be listed in a Bibliography.

**Appendices:** Sample survey tools, questionnaires, consent forms, and other related documents for the proposal may be added as an appendix.
E. IRB process
Below are the definitions of research and human subjects as described in the federal regulations governing human subject research [45 CFR 46.102(d)]:

**Research** means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes. For example, some demonstration and service programs may include research activities.

**Human subject** means a living individual about whom an investigator (whether professional or student) conducting research obtains:
(1) Data through intervention or interaction with the individual, or
(2) Identifiable private information.

See the federal website for the protection of human subjects for more details at: [http://www.hhs.gov/ohrp/](http://www.hhs.gov/ohrp/).

All MPH 6991 professional paper students will be proposing a research project, however, all students will not necessarily be proposing a human subjects research project. The student and the primary professor should first decide whether the research project being proposed by the student involves human subjects, as defined above. If it does not, then the student does not need to go through the IRB process. If the primary professor is unsure about whether the proposed research involves human subjects or not, then the UMCIRB office should be contacted for guidance.

All students proposing to conduct human subjects research must submit their research study to the UMCIRB for prospective review and approval. No portion of the research (recruitment, consent, intervention or interaction with participants, etc.) may be conducted before approval is granted by the UMCIRB. Students with questions about their proposed human research should contact the UMCIRB office via e-mail at UMCIRB@ecu.edu or at 252-744-2914. The IRB website is [www.ecu.edu/irb](http://www.ecu.edu/irb).

Completion of the IRB submission must be done in conjunction with the primary professor. The following is a list of the steps that need to be taken in order to submit human research to the UMCIRB for review and approval:
(1) If not already registered, you must register to become an ePIRATE (the online IRB submission and review system) user ([ePIRATE Registration for ECU Users](https://epirate.ecu.edu/epirateuser/registration/registrationHome.cfm));
(2) Successful completion of the mandatory online training, CITI training ([https://author.ecu.edu/cs-acad/oric/irb/education-modules.cfm](https://author.ecu.edu/cs-acad/oric/irb/education-modules.cfm));
(3) Creation and submission of the research study in ePIRATE, information required in the submission includes but may not be limited to:
   a. Lay summary of your project
   b. Study team members
      i. Primary professor or the content advisor should be the primary investigator (PI) for the project not the student;
      ii. All persons involved in the pro paper student’s project should be listed on the
IRB)
c. Project funding and location information
d. Plans for recruitment and informed consent of participants inclusive of the informed
   consent document(s) to be used or request and justification of waive of informed
   consent
e. For student projects a free-standing professional paper proposal/thesis/or dissertation
   proposal is required to be uploaded and should generally include the following
   information;
      i. Literature review
      ii. Hypothesis/Research question
      iii. Goals/objectives
      iv. Methodology for answering your research question
      v. Risks and benefits of the study as well as plans for minimizing risks
      vi. Plan for data collection and secure maintenance of data
      vii. Description of your plan for recruitment and consent of the participants
f. Projected number of people to be enrolled
g. Methodology
h. Risk(s) and benefit(s) discussion
i. Data privacy, your plan for maintenance of the data during the conduct of the study as
   well as after the study is completed and your plan for destruction of the data

If the student is participating in an existing human subjects study that has already received an
IRB determination/approval, they do not need to submit a separate IRB application but do need
to be added to the existing IRB documents. The primary professor and the primary investigator
on the IRB (if different from the primary professor) must agree with this option and an
amendment to the existing study to add the student would be required within ePIRATE. For
students being added to an existing IRB-approved study as a study team member, steps #1 and
#2 above are still required.

F. Summary of the professional paper proposal process
1. Select the study topic and project type.
2. Select the primary professor and content advisor (if appropriate).
3. Develop the timeline for the proposal.
4. Acquire knowledge, skills, and resources needed to complete the proposal and project.
5. Write the proposal.
6. Submit the proposal for primary professor’s and content advisors’ approval.
7. Obtain Institutional Review Board (IRB) approval, if necessary.
Section IV. MPH 6992 Details

A. Course objectives and competencies
The objective for MPH 6992 is the implementation of the proposal by following the timeline developed in MPH 6991. The student will implement the project proposed in 6991 to generate the findings/outcomes/results section of the paper, summarize and discuss the findings, submit a written report, and present the project publicly.

The MPH program is transitioning towards implementation of the Council on Education for Public Health criteria amended in 2016. Therefore, competencies for MPH 6992 will depend on whether the student has completed MPH 6991 prior to Fall 2018.

For students who have already completed MPH 6991 and will be completing MPH 6992 in Fall 2018, the only competency assessed is:
Deliver an oral presentation using recognized criteria for effective information dissemination.

For students starting MPH 6991 in Fall 2018 and completing MPH 6992 in Spring or Summer 2019, competencies will be selected by the student and their primary professor at the beginning of MPH 6991. The selected competencies will apply to both MPH 6991 and MPH 6992.

Students will present their professional paper project in a poster presentation format as part of a medical center wide research day. The primary professor will assess whether or not the student has met the competencies for MPH 6992 by evaluating the student’s poster and oral explanation of the study at the poster session.

B. Course organization
There are no organized class sessions. The primary professor will provide a syllabus and timeline for the dates that drafts are due. The final presentations will be scheduled for a time at the end of the semester.

The primary professor will meet with each student at least four times during the semester to provide guidance.

C. MPH 6992 grading
The “S” & “U” Grading System is used. Upon successful completion of MPH 6992, the primary professor will send a memo to the student services coordinator to upload into SharePoint/DegreeWorks stating the date work was completed. Once the memo is uploaded, the registrar will code professional paper as “R” -- Successful Completion. The primary professor will post either an “S” or “U” in Banner. The registrar is the only person who may assign an “R.”

- S (Satisfactory progress) A special grade reserved for thesis and dissertation research, internships, practica, and similar courses. The grades in these courses are not included in meeting the cumulative grade point average of 3.0 required for graduation.
- U (Unsatisfactory progress) A special grade reserved for thesis and dissertation research, internships, practica, and similar courses. The grades in these courses are not included in meeting the cumulative grade point average of 3.0 required for graduation.
D. MPH 6992 paper structure
The form and style of the paper may vary depending on the type of research project and the methods chosen. The student and the primary professor should negotiate the required paper format at the beginning of the MPH 6992 semester.

It is recommended that students choose either the APA or the AMA citation style and use it consistently throughout their professional paper. Other citation styles are also acceptable if the student’s primary professor has a citation preference, or the student would like to ultimately submit their paper to a specific journal which requires another citation style. For help with citation styles, see the ECU Libraries Citation Guide at: http://libguides.ecu.edu/c.php?g=17467&p=97552. Students are also encouraged to use a reference or citation manager throughout their professional paper process. RefWorks is the citation manager supported by ECU; information about RefWorks can be found on the Laupus Library webpage at https://hsl.ecu.edu/. Students can also ask for assistance from the librarians at Laupus Library.

The professional paper may be in the public health research article format. The IMRAD format (which is the acronym for “introduction, methods, results, and discussion”) is the most common format for public health research papers and may be used in writing the professional paper. The following instructions summarize the structure of this format. Students can read further details on this format from the International Committee of Medical Journal Editors (ICMJE) web page at http://www.icmje.org/.

Paper length will vary. Students should focus on being succinct yet including sufficient detail so that others could replicate the results. For the professional paper, it is highly suggested that, depending on the topic and type of study, the paper be modeled after certain journals in that field.

In general, the format of a research professional paper will include the following:

**Professional paper signature page:** This page includes the title of the paper and names of all professors/advisors, with an area for their signatures. This will be used for final approval of your paper. (See Appendix D for an example.)

**Professional paper cover page:** This page is similar to the cover page used for the proposal. Students should state the title, their name, and the semester. The names, affiliations, and academic credentials of the professors/advisors should appear on this page.

**Abstract:** Summarizes the background, methods, results, and the conclusion of the paper. Use a “structured” format for the abstract and summarize each section under separate headings. The abstract should be limited to 200 words.

**Introduction:** This section is the combined summary of the “Introduction,” “Background,” and “Goal and Objectives” sections from the proposal. It gives a brief description of the problem, the importance of the problem, and the goals and objectives. The literature review in the proposal should be omitted from the introduction, except to use citations from literature to support introductory statements. It may be helpful to find a good peer-reviewed paper and
follow its example for the content of the Introduction.

Methods: This section contains the methods used to conduct the study or project. In some situations, the methods to implement the proposal may have changed by the time the paper is written. This section should reflect what was actually done in terms of methods for the study design, protocol, data collection, and biostatistical sections. The methods section should include UMCIRB number and determination; if the research did not involve human subjects, that should be stated.

Results: Gives the observed findings and the objective results of the analyses without any interpretation. Students should use tables and figures (which are placed after the reference list) along with the text to summarize the data. Data in tables should not be repeated verbatim in the text section. Read other journals as to the common practice of appropriate result section writing.

Discussion: Students should summarize in 1-2 sentences their major findings. The first paragraph should always reflect the major findings. The next paragraphs should discuss the results in the context of previously published findings, i.e., describe whether the results agree or disagree with studies cited in the literature review. This section also includes speculation about why or why not results agree or disagree with prior findings. Next, both strengths and limitations of the study must be discussed. Students should conclude the discussion with the study's contributions to public health practice, community health and scientific literature, and give recommendations for future research.

Conclusion: Not more than a short paragraph, this section should give the “take home” message from the project as well as what should be researched next.

Competencies: The Competency Achievement table, which includes a list of the competencies selected by the student and how they met each competency, should be placed in this section.

Acknowledgements: Students should include a brief section in the paper and on the poster acknowledging help they received from various individuals.

References: Only works cited are listed in final paper. An appendix of other literature consulted, published and unpublished, may be listed as a Bibliography. Epidemiology papers should use the AMA format.

Figures and Tables: Figures and tables should be placed after the references on separate pages.

E. Paper submission
The student should revise their paper according to suggestions of the primary professor and content advisor and deliver a final draft to them no later than one week before the scheduled presentation day.
Steps the student should take after the paper is final:
1. Ask primary professor and content advisors to indicate their approval of the final draft.
2. Present the paper publicly as a poster on scheduled day. (This date should be set at the beginning of the semester.)
3. Print the poster in an 8”x11” format. Have the paper and this copy of the poster spiral bound together, placing the poster after the paper. Only one bound copy of the paper and presentation is required for the MPH library. The primary professor or content advisor may request a bound copy from the student.
4. Obtain content advisor’s signature on bound copy, if student has a content advisor.
5. Submit the bound paper and poster to the primary professor who will sign off and give the bound paper to the student services coordinator who in turn will obtain the signature of the department chair.
6. Send an electronic copy of the paper and poster to the primary professor and to the content advisor.
7. Ask primary professor (or content advisor if PI) to “close” the study with the IRB by entering ePirate and following instruction.

F. Professional paper poster
All students are required to develop a poster describing their professional paper project, which will be presented in one session at a designated time and location at the end of the semester.

Posters should be created using the ECU PowerPoint 42 inch by 48 inch poster template. An annotated version of this poster template is available on the DPH pro paper webpage.

In the acknowledgement section of the poster, students should acknowledge all those who helped them with their professional paper project and indicate the role of each individual and the assistance they provided.

There are two options for authorship on the student’s professional paper poster, which should be discussed among the student, primary professor, and content advisor.
Option 1. The student is the sole author. This is recommended if the student does not plan to present the poster again at a conference or professional meeting.
Option 2. The student is the first author, followed by all those who contributed to the project. This option is recommended if the student does plan to present the poster in other professional venues.

The following guidelines should be adhered to for printing, displaying and presenting the poster:
1. Posters should be printed through the Laupus Library printing services at (http://www.ecu.edu/cs-dhs/laupuslibrary/services/posterprinting.cfm). The department will pay for poster printing. Please contact Kristin Wooten for details on payment.
2. The department will provide an easel and poster board and pins to display the poster at the session.
3. Students are expected to have a professional dress and demeanor during the poster session and stand by their poster for the entire session.
4. Students are expected to bring a few copies of their Competency Achievement table as handouts for interested guests.
5. Students can either keep the poster themselves or give it to their primary professor or content advisor.
advisor after the poster session.

G. Publication of paper
Early in the MPH 6992 semester, the student and primary professor should discuss the possibility of submitting the student’s paper for publication. If the decision is made to submit, authorship and responsibilities should be discussed early in the process and agreed upon among the student and advisors.

H. Summary of the professional paper process (MPH 6992)
1. Conduct the research project, and/or data collection after obtaining IRB approval (if IRB is necessary).
2. Prepare the data base.
3. Enter and clean data.
4. Analyze the data.
5. Review the data with professor/advisors.
6. Re-write the introduction and methods as necessary.
7. Write the results section, prepare tables and figures.
8. Double check introduction, methods, and results.
9. Write the discussion and conclusion.
10. Prepare the reference citation list, and bibliography if appropriate.
11. Write the abstract and prepare a cover page and a signature page.
12. Submit an electronic version of the paper for suggested revision and/or approval by primary professor and content advisor.
13. Present findings in a poster presentation and submit a bound-copy of the paper to the primary professor.
14. Close the study with the IRB in collaboration with the primary professor or content advisor (whomever is the PI), if appropriate.

Section V: Resources for Professional Paper Students

A. Library services for literature searches
Kathy Cable is the library liaison for Public Health at Laupus Library. Feel free to contact her with any questions you may have about literature searches and library resources. Her email address is cablek@ecu.edu, and her phone number is 252-744-3222.

The ECU Libraries’ Research Guide for Public Health can be found at: http://libguides.ecu.edu/c.php?g=17380&p=97092

B. Support for statistical analyses
Students seeking analytical support have a variety of resources. First, the student should attempt the analysis on their own in consultation with their primary professor. Then the student should check with their primary professor regarding the best choices for analytical support. Potential sources of support include other DPH faculty members, as well as faculty in the Department of Biostatistics. If a student and primary professor decide to seek input from a faculty member in the Department of Biostatistics, the primary professor should initiate contact with a Biostatistics faculty member, and if the Biostatistics faculty member agrees to provide
consultation, he or she should serve as a content advisor for the professional paper student.

C. University Writing Center
The University Writing Center offers in-person consultations and resources to help students at any stage of the writing process and has locations at both Joyner and Laupus Libraries. Their website is:
http://www.ecu.edu/cs-acad/writing/uwc/.

D. UMCIRB
The University and Medical Center Institutional Review Board (UMCIRB) website has a lot of helpful information. Tutorials about ePirate can be found at:
http://www.ecu.edu/cs-acad/oric/irb/ePirateTutorials.cfm

The UMCIRB Quick Start Reference Guide for Investigators can be found at:

Further information for investigators and coordinators can be found at:
http://www.ecu.edu/cs-acad/ORIC/irb/investigators_and_coordinators.cfm

Section VI. Roles and Responsibilities

The roles and responsibilities of each person involved in the MPH 6991/2 process are outlined below.

Primary Professor
- Develop a Blackboard site for their professional paper students including a syllabus and other materials.
- Define MPH 6991/2 components clearly.
- If the student’s project is a component of a larger study being conducted by the primary professor (content advisor or other professor), clearly define the role and responsibilities of the student in that project.
- Establish clear benchmarks/timeline for each semester.
- Assist student’s development of a sound methodological framework.
- Provide timely and constructive feedback/input for questions posed by students.
- If the student’s project requires IRB approval, provide guidance for the IRB submission and be the PI. (In some instances the content advisor may be the PI.)
- Check on the student’s progress on the timeline.
- Communicate with the content advisor about the students’ progress and about attending the final MPH 6992 presentation.
- Assign the final MPH 6991/2 grade.
- Complete the student’s MPH 6991/2 competency form.
Content Advisor (if applicable)

- Provide input on public health implications of research topic.
- Guide the student regarding sound methodology.
- Early in the MPH 6991 semester, meet with the student and primary professor to define student’s pro paper project and the roles and responsibilities of each person. Results of this meeting should be documented in writing.
- Provide timely input to drafts of proposal and professional paper.
- Attend the student’s final poster presentation, if possible.
- The content advisor does not assign the grade and does not participate in grading. The content advisor may provide editing and other suggestions that will enhance the final product.

Student

- Develop a topic that is feasible, measurable, and achievable.
- Lead development of a sound methodological framework to answer research question/topic.
- Implement feedback from primary professor and content advisors in a timely fashion.
- Adhere to benchmarks set by the primary professor.
- Complete the proposal and paper in a timely and efficient manner.
Appendix A: Examples of types of professional paper projects and recent professional paper titles

Types of professional papers
1. An epidemiological investigation
2. Description and analysis of a significant public health problem affecting a population not previously examined
3. Description and analysis of an emerging public health issue
4. Clinical effectiveness/outcomes research
5. A research question in the clinical research setting
6. A systematic literature review, or a white paper on a specific topic
7. History of a public health problem or program
8. An evaluation of a public health intervention or program
9. An analysis of a public health policy
10. Legislative research for drafting new public health legislation
11. Research for legal action to promote public health

Examples of professional paper titles (with student’s name and date of presentation) from recent MPH graduates

Injury-Related Emergency Department Visits After Hurricane Matthew in North Carolina (Joshua Mabellos, May 2018)


A Qualitative Comparison of Traffic Light Labeling versus Physical Activity Caloric Expenditure Labeling to Promote Healthier Purchases in an Eastern North Carolina Corner Store (Archana Kaur, December 2017)


Comparison of Mitigation to Recovery Spending from 1993-2012 for North Carolina (Michael Dickson, May 2017)

PTSD Prevention Programs Implemented by the United States Military: A Systematic Literature Review (Kara Rice, May 2017)

Provider and Medical Staff Perceptions and Referral Practices for Diabetes Self-Management Education in Pitt County, NC (Brenna Kirk, December 2016)
Appendix B
ILE (Integrative Learning Experience) Agreement and Concept Form
ECU Department of Public Health

Instructions
The following should be completed before the student registers for MPH 6991.

1. The student and the primary professor should complete all three sections of this form: Concept for Professional Paper Project, Selection of Competencies for Professional Paper, and the Professional Paper Primary Professor/Student Agreement.
2. After completion and review of this document together during their initial meeting prior to registration for MPH 6991, both the student and the primary professor should sign and date the agreement.
3. The primary professor should obtain the Department Chair’s signature, and then make signed copies for themselves, the student, and the department.
4. The department copy should be given to the Student Services Coordinator.

Students who register themselves for MPH 6991 without completing this paperwork in full may have their registration for MPH 6991 purged.

Semester and Year Starting MPH 6991: ______________________

Student’s Name: _________________________________________

Primary Professor’s Name: _________________________________

Primary Professor’s MPH 6991 section number: ________________

Student’s Concentration:

☐ Community Health and Health Behavior (formerly Health Behavior)

☐ Epidemiology

☐ Health Policy, Administration and Leadership (formerly Health Administration)
Concept for Professional Paper Project

Research question to be addressed


Potential Data Source(s)


Is the student planning to use data from their internship?


If so, please outline a brief contingency plan if these data become unavailable.


Although not required, students may have additional professors or other investigators involved as content advisors. Does the student have any content advisors? If so, please list them here.


Additional information


Brief Proposed timeline


Selection of Competencies for Professional Paper

Instructions: In collaboration with their primary professor, students should choose at least four foundational competencies and at least one concentration-specific competency for their professional paper experience. The competency selection should be based on the professional paper topic and methods, and the student’s educational and professional goals. The student and the primary professor should both initial in the box next to the selected competencies.

<table>
<thead>
<tr>
<th>Initials</th>
<th>CEPH MPH Foundational Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Evidence-based Approaches to Public Health</td>
</tr>
<tr>
<td></td>
<td>1. Apply epidemiological methods to the breadth of settings and situations in public health practice</td>
</tr>
<tr>
<td></td>
<td>2. Select quantitative and qualitative data collection methods appropriate for a given public health context</td>
</tr>
<tr>
<td></td>
<td>3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate</td>
</tr>
<tr>
<td></td>
<td>4. Interpret results of data analysis for public health research, policy or practice</td>
</tr>
<tr>
<td></td>
<td>Public Health &amp; Health Care Systems</td>
</tr>
<tr>
<td></td>
<td>5. Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings</td>
</tr>
<tr>
<td></td>
<td>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 societal levels</td>
</tr>
<tr>
<td></td>
<td>Planning &amp; Management to Promote Health</td>
</tr>
<tr>
<td></td>
<td>7. Assess population needs, assets and capacities that affect communities’ health</td>
</tr>
<tr>
<td></td>
<td>8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs</td>
</tr>
<tr>
<td></td>
<td>9. Design a population-based policy, program, project or intervention</td>
</tr>
<tr>
<td></td>
<td>10. Explain basic principles and tools of budget and resource management</td>
</tr>
<tr>
<td></td>
<td>11. Select methods to evaluate public health programs</td>
</tr>
<tr>
<td></td>
<td>Policy in Public Health</td>
</tr>
<tr>
<td></td>
<td>12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence</td>
</tr>
<tr>
<td></td>
<td>13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes</td>
</tr>
<tr>
<td></td>
<td>14. Advocate for political, social or economic policies and programs that will improve health in diverse populations</td>
</tr>
<tr>
<td></td>
<td>15. Evaluate policies for their impact on public health and health equity</td>
</tr>
<tr>
<td></td>
<td>Leadership</td>
</tr>
<tr>
<td></td>
<td>16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making</td>
</tr>
<tr>
<td></td>
<td>17. Apply negotiation and mediation skills to address organizational or community challenges</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>18. Select communication strategies for different audiences and sectors</td>
<td></td>
</tr>
<tr>
<td>19. Communicate audience-appropriate public health content, both in writing and through oral presentation</td>
<td></td>
</tr>
<tr>
<td>20. Describe the importance of cultural competence in communicating public health content</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interprofessional Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. Perform effectively on interprofessional teams</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Systems Thinking</th>
</tr>
</thead>
<tbody>
<tr>
<td>22. Apply systems thinking tools to a public health issue</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Concentration-Specific Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community Health and Health Behavior (Formerly Health Behavior)</strong></td>
</tr>
<tr>
<td>1. Design a conceptual and/or logic model to guide intervention development and/or data collection for program evaluation</td>
</tr>
<tr>
<td>2. Develop an evaluation plan for health promotion and disease prevention interventions that address multiple levels of the socioecological framework</td>
</tr>
<tr>
<td>3. Use qualitative and/or quantitative methods to analyze data regarding programmatic needs, evaluation, or other public health issue.</td>
</tr>
<tr>
<td>4. Create a plan for public health partnership building to achieve common community and public health goals</td>
</tr>
<tr>
<td>5. Demonstrate knowledge related to managing a project including budget preparation, managing timelines and deliverables, and training staff for data collection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Epidemiology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Critically evaluate public health literature through application of fundamental principles and methods of epidemiology</td>
</tr>
<tr>
<td>2. Develop a foundation for designing valid and efficient protocols to address public health problems</td>
</tr>
<tr>
<td>3. Apply quantitative skills to organize, analyze, interpret and synthesize epidemiologic data related to public health issues</td>
</tr>
<tr>
<td>4. Design surveillance for a public health problem and identify surveillance needs</td>
</tr>
<tr>
<td>5. Collaborate across disciplines to plan, implement, and evaluate public health programs</td>
</tr>
<tr>
<td><strong>Health Policy, Administration and Leadership (Formerly Health Administration)</strong></td>
</tr>
<tr>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>1. Apply systems thinking in addressing rural and minority health inequities</td>
</tr>
<tr>
<td>2. Examine policy impacts on health and health care access for disadvantaged populations</td>
</tr>
<tr>
<td>3. Participation in policy formation and advocacy to improve the health and health care access for disadvantaged populations to reduce health inequities</td>
</tr>
<tr>
<td>4. Leadership skills in strategic planning/management with a focus on reducing disparities in disadvantaged populations</td>
</tr>
<tr>
<td>5. Financial performance analysis</td>
</tr>
<tr>
<td>6. Human resources management skills inclusive of diversity and disadvantaged populations</td>
</tr>
</tbody>
</table>
Professional Paper Primary Professor/Student Agreement

This agreement outlines the collegial relationship between the faculty mentor and the student working collaboratively on the student’s integrative learning experience project for the MPH program. It is intended to ensure the best possible experience for both the faculty member and the student. To help students decide on a primary professor, a list of possible professional paper topics and faculty interests is available on the professional paper webpage at http://www.ecu.edu/cs-dhs/publichealth/professionalPaper.cfm.

After deciding on a primary professor, the student and faculty member (primary professor) should consult and mutually agree to:

1. Work collaboratively to identify and refine a pro paper topic that as closely as possible aligns with the professional expertise of the faculty member and the professional interests of the student;
2. Ensure that the student views the 3 orientation to professional paper lectures on Mediasite at https://mediasite.ecu.edu/MS/Catalog/catalogs/mph-6991_6992/;
3. If IRB is required,
   a. Submit the study protocol to the ECU IRB with the primary professor or content advisor as the principal investigator and with all other persons involved in the project listed in appropriate roles;
   b. Collectively develop a strategy regarding the closeout of the study protocol with the IRB;
4. Together review the Roles and Responsibilities section of the Professional Paper Guidelines and abide by them;
5. Select at least four foundational competencies and one concentration competency that align with the student’s educational and professional goals and their professional paper project;
6. During the course of the experience, communicate regularly on the progress of the data collection, analysis, and development of the paper and poster;
7. Agree in a timely manner on contents of the final products (paper and presentation documents) to complete the requirements of the MPH;
8. Come to a mutual agreement on authorship assignment and venues for submission of manuscripts and abstracts to peer-reviewed journals and scientific/professional meetings;
9. Collectively develop a strategy regarding the disposition of data collected during the study in alignment with IRB policy (e.g., destruction of paper copies of data collection instruments).

Signed

Student ____________________________ Date _____________

Primary Professor ____________________ Date _____________

Department Chair ____________________ Date _____________
Appendix C: Examples of Table Shells (or Mock Tables)

A table shell is a structured table that includes a title, the appropriate number of columns and rows, column headings, row headings, and footnotes but does not include any results. Creating table shells early in the research process helps the researcher to make sure they are collecting the right data and also helps to define the analysis plan.

**Example of table shell to describe the sample population**

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (in years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;=65</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Race-ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whites, non-Hispanic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blacks, non-Hispanic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;= HS graduate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some post-secondary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College graduate</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Annual household income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; $35,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$35,000 - 49,999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;= $50,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example of table shell to describe univariate statistics of main analysis variables

<table>
<thead>
<tr>
<th>Prevalence of Current Cigarette Smoking Status and Other Characteristics, Pitt County Smoking Survey, 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n</strong></td>
</tr>
<tr>
<td>Current cigarette smoking status</td>
</tr>
<tr>
<td>Currently smokes*</td>
</tr>
<tr>
<td>Does not smoke</td>
</tr>
<tr>
<td>Number cigarettes per day**</td>
</tr>
<tr>
<td>Less than 5</td>
</tr>
<tr>
<td>5-10</td>
</tr>
<tr>
<td>11-19</td>
</tr>
<tr>
<td>20 or more</td>
</tr>
<tr>
<td>Participated in Employee Wellness Program***</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

*Has smoked at least 100 cigarettes in their lifetime and currently smokes cigarettes. **Number of cigarettes smoked on a typical day, among current smokers. ***Participated in any wellness program in the past 12 months offered by their employer.

Example of table shell to report bivariate statistics.

<table>
<thead>
<tr>
<th>Prevalence of Current Cigarette Smoking and Number of Cigarettes Smoked per Day by Participation in Employee Wellness Program, Pitt County Smoking Survey, 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participated in wellness program</strong>*</td>
</tr>
<tr>
<td>% (n)</td>
</tr>
<tr>
<td>Current cigarette smoking</td>
</tr>
<tr>
<td>Currently smokes*</td>
</tr>
<tr>
<td>Does not smoke</td>
</tr>
<tr>
<td>Number cigarettes per day**</td>
</tr>
<tr>
<td>Less than 5</td>
</tr>
<tr>
<td>5-10</td>
</tr>
<tr>
<td>11-19</td>
</tr>
<tr>
<td>20 or more</td>
</tr>
</tbody>
</table>

*Has smoked at least 100 cigarettes in their lifetime and currently smokes cigarettes. **Number of cigarettes smoked on a typical day, among current smokers. ***Participated in any wellness program in the past 12 months offered by their employer.
Appendix D: Example of Signature Page and Cover Sheet for Professional Paper
The signature page is only required on the MPH 6992 professional paper, not on the MPH 6991 proposal for the professional paper. Cover sheets are required for both. Examples of each are provided on the next two pages.
Title of Paper

Name of Student

Department of Public Health
Brody School of Medicine
East Carolina University
Greenville, NC 27834

Primary Professor
Ann P. Rafferty, PhD

Content Advisor
John Q. Public, PhD

MPH 6992 Professional Paper II
December 2018